



GREATER VANCOUVER

# WOODTURNERS GUILD

CHAPTER 130 OF THE AMERICAN ASSOCIATION OF WOODTURNERS



## Special points of interest:

- Next Meeting:  
Wednesday, March 25 at 6:30 PM,  
Sapperton Hall,  
318 Keary St, New West
- Main Event:  
Marco Berero will demonstrate how to pierce, 1800's style.  
  
John Spitters will teach us how to make finials.
- Food Providers:  
Annie Prefontaine  
Ed Pretty  
Art Rock  
Lance Rossington  
Anne Rostvig  
George Russell
- Greeters:  
Jay Mapson  
Harvey Maser,  
Peter McClaren  
Maarten Meerman  
Mark Michaluk  
Cam Montgomery

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GVWG

March 2015

## President's Column

Bill Fowle

**W**ith another successful AGM under our belt I wanted to thank you for electing another outstanding Board of Directors. I think you will see another year of great leadership. Their names are listed here in the newsletter. Thanks to everyone who was nominated. It is volunteers like you who make our Guild such a great organization.

And to our retiring Directors Bruce, Ken and Ed. Your thoughtful, knowledgeable opinions were a huge asset to the Board. On behalf of the Guild thank you for your hard work and dedication.

Ed and Claudia did an awesome job explaining the new Demonstrators Accreditation process and it is already in full swing with a few people already certified. The new tracking system will make it easy to keep track of the certifications. Please remember that all certifications expired at the February 2015 general meeting so please contact one of the accreditors in your area (listed on our website) and take the time to get certified.

I understand that Steven Hatcher has his new passport and we are trying to find another time for him to come. Let's hope it's soon.

Don't forget to talk to John Spitters and get signed up for the AAW's Chapter Collaborative Challenge. We will have to get moving on this so we can have something ready in time. John's idea for a theme is 'fishing' but is open to suggestions.

Speaking of the AAW, This year's Symposium is June 25-28 in Pittsburgh and I hear the closest hotels are booking up quickly. So if you are going you might want to register soon. You can get more info at <http://www.woodturner.org/?page=2015Pittsburgh>.

This Month's President's Challenge was 'Hollow'.

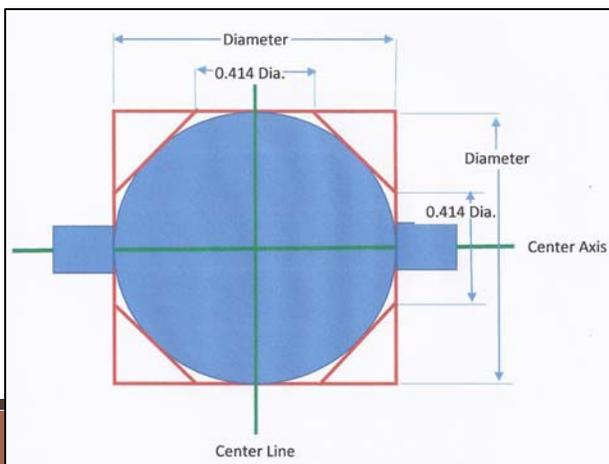
Aprils' Presidents Challenge is 'Something turned between centers'

# Turning a Sphere

by Larry Stevenson

First of all I would like to say that there are many ways to turn a sphere and by no means do I feel that this is the best way to turn a sphere or the only way. Secondly I am not a fan of going out and buying or building a sphere making jig. By learning to do it another way you become a better woodturner and you save your money. Once you have done a few, you can do it as quick or quicker as using a jig and you can establish a better surface finish. What I am attempting to do is ensure that everyone can accomplish turning a sphere with success. I modified other methods to assist the beginner sphere turner in accomplishing the task and to gain the experience of recognizing the form or shape of a sphere. I know that may sound stupid, but in my own experience in turning spheres I found that getting those initial curves in the piece frustrating and went back and forth to accomplish the final sphere. So this is a method in avoiding those frustrations that should help the novice sphere turner accomplish the end task.

First have a look at the diagram below and we will talk about the layout of a sphere in a piece of wood, then we will simplify it and then turn the sphere. In the diagram below you will notice that there are lines at 45 degrees. These are cuts that you will make to assist in achieving the final shape. Mathematically these are 0.414 times the diameter of the sphere. We are not going to measure out that closely but this is what the layout of an octagon is surrounding a sphere. All the elements or sides of the octagon are 0.414 times the diameter of the enclosed sphere. I haven't labelled all of the elements of the octagon.



Ok, now that we have looked at the physical layout of an octagon surrounding the sphere let get busy and turn the sphere.

First put your piece of wood between centers. The wood should be 1 – 2 inches longer than the diameter of the sphere that you want to turn. What is different about this method is that we are going to create a template of the outside shape of the sphere. This template will assist you in establishing the correct shape of the sphere without having to go back and forth several times. This plastic template will be created using the outside diameter of the cylinder to get the correct profile. The plastic that I use is from old covers from period reports. These were in the garbage at work and I saw another use for them. This plastic is great for any template that you want to make. We will turn the cylinder first then trim the cylinder to length and finally create an octagonal form with the stubs that you are holding the piece with.

1. Turn a cylinder between centers ensuring that the diameter is consistent.
2. Place a piece of plastic on the end of the cylinder holding it in place with the tail center and turn the lathe to a relatively slow speed. Hold a block of wood behind the piece of plastic and use a skew to cut the plastic to the same diameter as the cylinder. This will create a plastic template or outline of the sphere. You only need a section of about  $\frac{1}{4}$  of the outside diameter.
3. Mark the center totally around the cylinder that you turned with a pencil and use calipers to measure the cylinder's diameter. Dividing the diameter in two mark with a pencil the ends of sphere. This should leave you with two sections that will be the stubs that you are currently holding between centers.
4. Using a parting tool reduce the diameter of the cylinder to about 1" or so, depending on the size of the sphere you are turning. The length of the cylinder should now be the same as the diameter leaving two stubs about 1" diameter.
5. In the analysis of the layout of an octagon surround-

ing a sphere I said that the sides of the octagon are 0.414 times the diameter, but we are woodturners and I believe only a few of you are willing to mark it out that closely. From the center line divide each half into two equal parts, thus creating  $\frac{1}{4}$  marks

6. Measure down the same distance on each side and draw another circle on each end. This creates the two reference marks that you will now turn the 45 degree angles of the octagon. You can use a bowl gouge or a spindle gouge to do this. Cut as straight a line as possible between these two reference points.
7. Measure the diagonal with calipers set to the diameter of the cylinder. You will notice that the diagonal is larger than the diameter. This is because we set the reference points at 0.5 diameter and not 0.414. This isn't a problem because not you cut along each diagonal equally until the diagonal is the same as the diameter. This is much easier and quicker than measuring 0.414 and cutting a straight line between them.
8. Now you have a somewhat octagonal piece with two holding stubs. Now using your accurate eyeball divide the 45 degree diagonal sides into two and mark with a pencil. It is important that you turned a 45 degree side between your reference marks. This new line is the outside surface of the sphere and you do not want to turn this line away.
9. From the initial center line of the cylinder to this new line on the diagonal side you are now going to establish the curvature of the sphere. Start at the points and start establishing the curvature, working back to the reference marks. This is where the template you made comes in handy. Use it to see where you have to remove more material. The closer you can establish the correct curvature now the easier the rest of the job is. Keep the center line on the piece as you will need this later.
10. You should now have a spherical looking piece with a couple of stubs sticking out the center axis. Now we have to talk about how we are going to hold it from this point on.

In order to finish turning the sphere and removing the stubs we need to make a pair of cup centers. I make

these out of a softwood, usually cedar or pine only because that is what I have laying around. I turn them as an end grain turning.

Turn a piece of whatever softwood you have laying around between centers and create a tenon on each end so that you can mount it in your 4 jaw chuck. Part the piece into two pieces. One will be the headstock cup center and the other the tailstock center.

Mount the headstock cup center in the chuck and turn the cup into the end ensuring that the cup is deep enough that the sphere is supported by the outside rim. I would make the diameter of this cup about 25% - 40% of the diameter of the sphere.

Now mount the other piece in the chuck and turn a 60 degree cone shaped hollow into the end to that you can put it onto your 60 degree cone center of your tailstock live center. Make sure that it is a good fit then establish another tenon on the same end as the 60 degree cone inset. You can now turn the piece around in the chuck and turn the cup shape into it again ensuring that the cup is deep enough that the sphere is supported by the outside rim. The diameter of this cup is again about 25% - 40% of the diameter of the sphere.

We are now going to hold the spherical shape between the cup centers and refine the sphere. First cut the stubs off with a dovetail saw or a small Japanese pull saw. We are going to turn the sphere on 3 axis, alternating between them. We will call these the X, Y and Z axis. We already established the first axis, the x axis by turning between centers. You should still have the center pencil mark on the sphere.

11. Mount the cup centers on your headstock and tailstock and hold the sphere between the cup centers. The stud ends should now be oriented so they are at 90 degrees to the horizontal and the center line of the sphere should be in the center of the cup centers. This is the y axis.
12. The grain of the wood is now like a side grain piece so you do your turning uphill. I use a sweptback gouge for this. As you turn the lathe on look at the profile of the piece and you will see a shadow. What you are going to do is turn away the shadow and establish the spherical form. Take your time and carefully turn the shadow away. You are turning

mainly the ends where you couldn't establish the correct curvature because of the stubs. Do not be too quick to move on to the third axis. Stop the lathe and ensure that you have turned enough off the ends to blend it in with the profile of the sphere. Mark the center around the sphere on this axis with a pencil.

13. Now it is time to move on to the third axis, the Z axis. Looking at the end grain, slightly loosen the tailstock and revolve the piece 90 degrees around the original x axis and tighten the cup centers onto the wood. The intersection of the pencil mark centers you established with the X axis and the Y axis should now be clamped and centered on the cup centers.
14. The grain of the wood is still like a side grain piece so you do your turning uphill as before. When you

turn the lathe on this time the shadow should be barely distinguishable. Carefully turn away the shadow. Again do not be shy and ensure that you turn away enough but not too much. You should now have a sphere.

15. If you turned away too much on any of the 3 axis, then you may need to cycle through them again.

For sanding I may put a piece of fun foam or a piece of closed cell foam onto the cup centers to protect the piece as I sand. You again rotate the sphere through the 3 axis and progressively reduce the grit of your abrasive. Rotate the piece and sand with each abrasive grit. Do not reduce your grit until you have done all axis with the same grit.

# Instant Gallery

February 25 2015



Merv Graham  
Arbutus Bowl 5.5" x 3.5"  
Micro Crystalline Wax



Merv Graham  
Commemorative Baby Rattle 1.5" x 6" , Spalted Maple  
Krylon. For my latest granddaughter



Merv Graham  
Maple Candy Dish 6" x 1.5" ,Krylon



Merv Graham  
Study on punky wood.  
Spalted punky maple burl, 11" x 2.5", Lacqur



Art Liestman  
Teapot, 5"  
Big leaf maple burl, ebony. Wipe on poly, acrylic

# Instant Gallery

## Page 2



Bruce Campbell  
Rings  
Cocobolo, Tigre, Boxwood Silver. CA finish



Nancy Hills  
Canoe cup scoop  
Maple wax



Marco Berera  
Are you getting changed?  
Maple Sphere 3 1/4 " Base 7 7/8" x 3 1/2"  
Buffing / Gold Leaf, Acrylic white



Dan Breck  
Live Edge Bowl  
Cherry 9.75" x 3" Wipe on Poly  
Green Turned



Marco Berera  
Tea Light  
Maple 4" x 7 7/8", Stain +  
Lacquer

# Instant Gallery

## Page 3



Jim Johnson  
Dragon Pods #1  
Black Walnut 3" x 3"  
Walnut Oil



M. Meerman  
Ray Gun  
Mable 2.5" x 7" , Wax.



Barry Wilkinson  
Bowl  
Acacia  
Sand Blasted, Wipe on poly



Ross Pilgrim  
Quilter's Chain  
Bloodwood, Pau Amarello, 6" x 5"  
Tung Oil, 541 Segments



Jim Johnson  
Dragon Pods #2  
Maple, 4" x 4" , Walnut Oil

# Instant Gallery

## Page 4



Allan Cusworth  
 Bottle Stoppers—Stainless Steel  
 Various woods, Wipe on poly



Bob Askew  
 Bowl  
 Oak 7" x 2", Tung Oil



Barry Wilkinson  
 Bowl  
 Acacia  
 Sand Blasted, Wipe on poly



M. Meerman  
 Pocket watch & stand  
 Maple 2" watch & 3" x 5" stand  
 Prize for competition.



Barry Wilkinson  
 3 Point  
 Elm  
 Sand Blasted, Tung Oil

# Instant Gallery

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Page 5



Art Liestman  
Teapot  
Bigleaf Maple, 3.5"  
Graphite



Bob Askew  
Bowl  
Chestnut, 11" x 4"  
Tung Oil



Keith Ruttan  
2 Bowl set  
Maple, 10" x 3"  
Wipe on poly

# Turning 101

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February 25 2015



David Adolph  
Potpourri Dish  
Maple, 4" x 6"  
Linseed oil

# Present's Challenge Gallery

## Spheres



Pete Blair  
Spheres



Bruce Campbell  
A Bowl of Balls



Pete Blair  
Spheres



Marco Berera  
i-Phone holder  
Maple burl, 1.25" x 1.75"  
CA Finish, Plasma Pens



David Adolph  
Sphere  
Dogwood, 6"  
Linseed Oil

# Present's Challenge Gallery

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## Spheres



David Adolph  
Sphere, Dogwood 6"  
Linseed Oil



John Spitters  
Sphere on stand  
Maple Burl & Iron Wood 3" x 5.25"  
dye & Wipe on poly



Bill Robertson  
Sphere 3"  
Wipe on poly



Cathy Friesen  
Sphere, Fir  
Cat's "Fir" Ball

# Present's Challenge Gallery

## Spheres



Des Wilson  
Clock, Parallam, 4"  
Polyurethane  
Nearly a Sphere!



Dan Breck  
Sphere, Maple 4.75"  
Green turned, un finished



Nancy Hills  
Sphere  
First try!



Merv Graham  
Sphere, Cherry, 6"  
no finish



Des Wilson  
Clock, Spalted Maple, 4"  
Polyurethane Sphere???

## *GVWG Officers, Appointees & Volunteers*

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