IWG News

The Newsletter of the Island Woodturners Guild October 2022

About the IWG:

The Island Woodturners Guild meets from 1:00 - 4:00 PM on the 4th Saturday of each month (except for July/Aug) at the Central Saanich Senior Citizens' Centre, 1229 Clarke Road, Brentwood Bay, BC.

Visitors are welcome.

Executive Committee

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Tim Karpiak

Vice President:
Don Robinson

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Secretary:
Michael McEwan

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The IWG gratefully acknowledges the support of the following companies:
Artisan Wood to Works
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THE PRESIDENT'S TURN

As I sit here writing, I'm looking out at the turning leaves and am thankful we've had such amazing weather for so long. Soon enough it'll be time to plug in the heater in the shop. Fortunately, my shop is so small I only need a tiny one.

Our September meeting was very interesting. I was inspired to try making a torus vase. I looked high and low for a test tube and eventually ended up getting some from Craft Supplies. Their price, even in American dollars, was substantially better than anywhere else. Now I just have to remember how to do it.

Technically, the meeting was a challenge. Hybrid meetings, although the norm now, are still a bit of a mystery. Hovan and I went early to set up and everything went smoothly until we tried to connect it all up. Then there was a bit of a panic. Fortunately, we were able to get it to work and the meeting was a success.

This month will feature a demonstration by Heise (which I know will be great) and we will endeavor to have a seamless Zoom meeting for those who join us online.

Finally, I'd like to thank all the people that help put on our meetings. Every helping hand really does make it more enjoyable and much easier to do.

I hope to see you all on Saturday - in person or on Zoom.

Tim Karpiak

NEXT MEETING: SATURDAY OCTOBER 22

Our next meeting will feature a presentation by Gil Heise on turning an ornament. A long-time member of the Guild, Gil is a jig master *extraordinaire* who revels in working with demanding local exotic woods such as hemlock and fir!

As is the case with all of our meetings this year, this will be a hybrid offering available in person at our meeting hall or on-line.

This will be followed by a *Show and Tell*. If you are unable to attend in person, please forward photos of your work to Virginia (remoteva@gmail.com) no later than Wednesday October 19th.

MEET THE WOODTURNER

Meet the Woodturner offers weekly live, interactive interviews with professional turners from around the world. Hosted by noted Irish turner, Pat Carroll, the turners share their experiences, inspirations, and insights.

Access is free (although donations are appreciated). You can sign up for these sessions at: https://www.patcarrollwoodturning.com/index.php/meet-the-woodturner/sign-up

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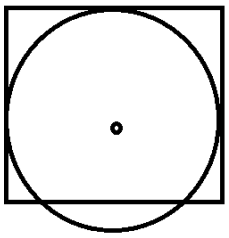
SEPTEMBER RECAP

Craig Timmerman provided an informative and detailed demonstration of turning a Torus vase. He noted that while there are many ways to do this turning, he would describe the process he uses for production turning. The following are the highlights.

1. Craig began with a blank that was 6.25” (H) x 7” (W) and 2.25” thick. (*These measurements are based upon the flared vase tubes that he uses which are 4.75” long.*)



He marks the centre of both flat faces on the assumption that the block is 7” square and scribes a 7” circle (left). He also marks the centre on the top and bottom. The waste material is then removed at the bandsaw to form the base of the vase.

***Note**: Craig noted that you could start with a 7” square blank and upon completing the turning, remove 3/4" from the bottom. He noted that you would need to ensure that the cut is perpendicular to the vase tube channel. However, this would only mean no “air turning” on one of the axes. The other axis, which involves much more “air turning” would still be required.*

2. As discussed later, the centre hole will be drilled out using a Forstner bit which must obviously clear the jaws of the chuck. Accordingly, he opens the jaws until they clear the bit and measures the outside diameter. This measurement will also be used to size the diameter of the recess on the face.

3. He mounts the blank in friction mode against the chuck jaws and then applies pressure using the live centre in the tailstock. Always remember to lock the quill.

He then faces off the two sides to ensure they are parallel. While facing the front side is straightforward, facing the rear side (headstock) will require a left-handed cut. You must be careful to avoid running the tool into the chuck.

***Note**: If you are uncomfortable with this method, you could place the blank between drive and live centres. However, this will almost certainly require you to (re)turn the two faces to ensure they are parallel.*

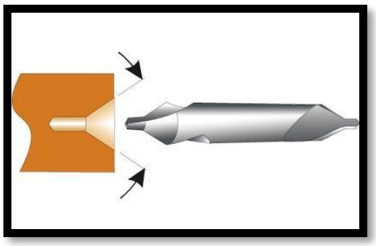
Once the sides are parallel, he marks the centre of the rim in two adjacent places and marks these with a punch.

4. He then cuts a recess for the blank to be held in expansion mode. The diameter was determined previously (Step 2). In anticipation of rounding the form, the recess should be quite shallow – approximately 3/16”.

5. The next step is to drill the hole for the glass tube. The piece is mounted on the other axis using a Steb centre in the headstock. A narrow tenon is then turned on the bottom (left). Craig emphasized that care should be taken when turning the tenon since you will be turning mostly air.

The piece is then mounted on this tenon, and the tube hole is drilled. While you could use a twist drill in a Jacob's chuck, Craig prefers to use a machinist bit with a morse taper on it. To prevent it from spinning, he applies a vice grip to the bit (right)

A common problem with drilling on the lathe is that the bit tends to wander. One solution for this is to use a HSS machinists centre drill (aka Slocomb bit) to bore a starter hole. Used primarily in metal turning, these bits are also useful for cutting a 60^0 centre recess which matches the cone angle of most live centres.



These can be obtained from KMS Tools (they call them Centre Drill Countersink bits) for $10.

***Note**: Most on-line sources recommend a ¼" shaft with a pilot head of 1/8".*

Craig stops drilling short of the finished depth so that he can turn a recess at the top.

To ensure a consistent, attractive recess, he uses a homemade jig. When the black line on the jig (left) meets the edge of the recess, he stops.

After sanding this area, he turns a slight recess for the flared rim on the glass tube. He then completes drilling for the tube to the final depth.

6. The piece is than mounted on the face recess with the chuck in expansion mode and the centre hole is drilled out using a Forstner bit. The bit diameter should be just slightly less than the width of the piece. Accordingly, with a width of 2-3/8”, he uses a 2-1/8” bit.

He then faces the outside of the blank.

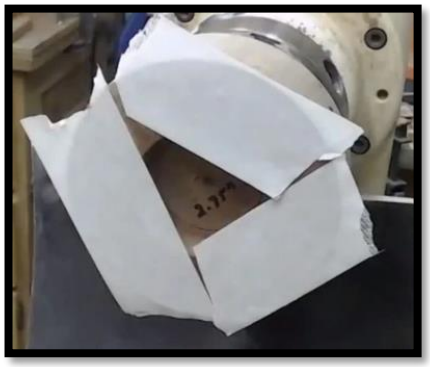
7. As the torus is a circle in cross-section, he measures the width and then marks this distance on the face. He then marks the mid-point on the edge and the two faces.

Beginning with the inside edge, he turns a quarter of the circle and uses a negative rake scraper to clean up the surface. Similar to turning a sphere, the mid-point marks should remain uncut.

He repeats this process on the two outside “quarters”. He suggested that you could use a cardboard template to check the curvature.

The turned surfaces are then sanded. He first sands any defects or tool marks with the lathe off and then completes the sanding with the lathe on.

8. The piece then needs to be reversed to round the last quarter. Craig mounts a flat face waste block in the chuck and turns a recess in the centre. The recess simply provides clearance for subsequent sanding tools.



He applies indoor outdoor double-sided carpet tape to the face of the block and then uses a cone centre in the tailstock to centre the turning.

If the turning is not exactly centred, it will be a major problem to round the last quarter. Accordingly, an alternative method is to make a jig with a tenon on one end that exactly matches the interior of the turning (2-1/8” in this case) and a 3/4" hole on the other end which fits over the nose of the live centre.

The last quarter is then rounded and sanded in the manner noted above.

To sand the inside of the ring, he uses a sleeveless sanding drum mounted in a drill. (LV: $22 and up) As noted above, the recess in the waste block provides clearance for this tool.

9. To remove the tenon on the bottom, he uses the jig that was used to turn the recess in the mouth as a jam chuck and secures it using the tailstock.

To remove the nub, you could use a rotary tool, chisel or a lathe-mounted sanding disc.

ZINNSER *SEALCOAT*

A new member recently asked about the contents of *Zinsser's Bulls Eye SealCoat* and whether he should use it as a first coat on a turning. The following is a condensed version of my hours-long response!

A. SHELLAC

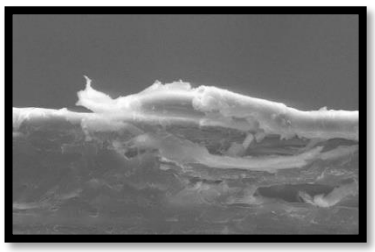
SealCoat is dewaxed shellac. For over 3,000 years, shellac has been used in a wide array of contexts ranging from dying fabrics to the production of gramophone records, formation of dentures, stabilisation of fossils and as a coating for fruits, candies, vitamins, and pharmaceuticals. It is also a remarkably versatile product for wood finishing.

Shellac is derived from resin secreted from the female *lac* bug. The insects are "bred" on trees, primarily in India and Thailand, and the lac resin is collected from the tree branches.

Depending upon what qualities of shellac are sought, the resin is subjected to various processing steps to produce what are referred to as flakes. The flakes are then mixed with denatured alcohol to produce the finished product. While you can purchase shellac as flakes and mix your own, most members prefer to buy premixed shellac such as *SealCoat*. While natural shellac has a wax content of approximately 5 - 6% which can produce a "cloudy" finish and interfere with various finishes, the shellac in *SealCoat* is dewaxed.

B. APPLICATIONS

1. SEALER



The short answer to the member's question is that there is no need to use shellac (or any other commercial sealer) as an initial sealer. The first coat of **any** finish you are using - penetrating oil or film - will fill the wood pores and lock in fibres (right: photomicrograph). These fibres can then be easily sanded, leaving a smooth surface for subsequent coats.

Possible Exceptions: Film Finishes

Nonetheless, if you are using a film finish (varnish, polyurethane, lacquer) there are a few circumstances where you **might** want to consider using a seal coat of shellac.

a. To Reduce Absorption

If your piece was turned from an absorbent wood such as cedar or poplar, a coat of shellac will minimize excessive absorption of your intended top finish.

Similarly, if intend to use lacquer, then regardless of the species of wood, a sealer coat of shellac will prevent excessive absorption of the first coat or two, especially on end grain.

b. Water Based Finish

If you are using a water-based film finish, an initial sealer coat of shellac will reduce the amount of grain raising. However, the same result can be obtained by first dampening the wood with water and then sanding.

c. Oily/Exotic Woods

Woods with a high oil content such as teak or cocobolo pose a problem of adhesion for many oil-based film finishes. These and other species such as rosewood and African Blackwood also contain antioxidants which may prevent these finishes from curing. A sealer coat of shellac will deal with both problems.

d. Knots/Pitch

If your turning has knots or pitch/sap pockets (common in cherry), a sealer coat will deal with the adhesion and absorption problems.

Strength of Coat

*If you choose to apply a sealer coat of shellac, most sources recommend using a single coat of a 1 lb cut. The concentration or strength of shellac (the proportion of shellac to alcohol) is referred to as the "**cut**". A one-pound cut means one pound of shellac flakes dissolved in one U.S. gallon of denatured alcohol. A two-pound cut means two pounds of shellac flakes dissolved in one U.S. gallon. And so on.*

SealCoat is a two-pound cut which is the most common strength. To produce a 1 lb. cut, mix 1 part SealCoat with 2/3 denatured alcohol.

2. BARRIER COAT

Shellac will adhere to virtually any finish and virtually any finish will adhere to shellac. This opens up a range of useful applications.

a. Incompatible Finishes

If you are using finishes that are incompatible with another (e.g., a waterborne finish over oil), shellac can be used to create a barrier between them to ensure adhesion.

b. Common Solvents

If you are applying two finishes that have a common solvent (e.g., a waterborne finish over waterborne dye) the solvent in the finish will "dissolve" the dye. A barrier coat of shellac will seal in and protect the dye from the solvent in the finish.

(*It follows that you should not use shellac as a barrier coat over an alcohol-based dye since they both have the same solvent*)

c. Bleeding/Staining

There are a variety of circumstances in which you may wish to apply a product to a specific area on a turning, but do not want it to affect the surrounding area.

One common situation is using CA glue to seal a crack. The problem is that the CA glue may migrate to the surrounding area and interfere with the final finish. A coat of shellac can be used to prevent this.

Similarly, if you are using ink, gesso, or paint, on a bead or a portion of a turning, a sealer coat of shellac will prevent bleeding into surrounding areas. When done, the shellac (and any colorant which is "on top" of it), can be easily turned or sanded away.

3. "DYE"

Shellac adds "warmth" to the colour of wood and, depending upon the number of coats, can also be used to age its appearance. It functions as a "natural dye" and, unlike some other products, does so without any loss of clarity.

For this purpose, you will need to mix your own using shellac flakes which are available in a variety of "colours" ranging from Ultra Blond to Dark Garnet. Some of these colours are available from Lee Valley ($13).

Ultra Blond	Natural Wood	Super Blonde	Blonde	Orange	Garnet	Dark Garnet

Hard Curly Maple

In the case of "plain" maple, many professional turners report that they routinely use a coat of blonde or amber (orange) shellac to add some "life" to their turning.

If you wish to highlight the grain on a figured piece, you can tint the shellac with an alcohol soluble dye such as Colour FX (*Wood Essence*) before applying a topcoat.

4. TOPCOAT

You can use shellac as your only finishing product. While suitable for virtually any turning, there are a few instances where it may be particularly appropriate.

Lidded boxes are one possibility. Shellac has exceptional resistance to water vapour which makes it an ideal product where you need to maintain a precise fit between the body and lid of a turning. For the same reason, it may also be a useful finish on a segmented turning.

Another case is that of highly figured woods. The clarity of shellac, particularly in comparison with polyurethane, makes it a good finish for figured wood.

However, applying shellac with a brush can be very difficult. The alcohol tends to evaporate rapidly leaving ridges of shellac. For that reason, most professional woodworkers will spray shellac when used as a topcoat. In this case, you should consider using ***Zinssers Bulls Eye Shellac*** in a rattle can. While there is no reference on the can, noted finisher Jeff Jewitt advised in an email that this product contains dewaxed shellac. Otherwise, the wax would clog the nozzle.

Note: *Zinsser's Bulls Eye Shellac* – clear or amber - in a quart can does **not** contain dewaxed shellac and should be avoided.

5. SANDING SEALER

a. Introduction

Zinsser claims that *SealCoat* is a "*Universal Sanding Sealer*". As Bob Flexner, a leading authority on finishes observes, this is not technically accurate.

By way of explanation, throughout the 19th and early 20th centuries, shellac was the primary finish used by furniture makers in Europe and North America. For a variety of reasons including the desire for a more abrasive-resistant finish, beginning in the 1920's manufacturers switched to nitrocellulose lacquer.

Despite its many advantages, lacquer was particularly susceptible to "**corning**" – the heat created during sanding would melt small pieces of finish which would become embedded in the sandpaper (left) and create scratches deeper than those created by the sanding grit.

In response, lacquer manufacturers added zinc stearate to thinned lacquer and called it **sanding** sealer – with an emphasis on the sanding. Zinc stearate is a mineral soap that was and still is widely used in cosmetic and personal care products as a lubricant. It has the same effect in a finish and thus minimizes "gumming up" sandpaper.

With the subsequent popularity of varnish, particularly for hobby woodworkers, similar corning problems arose. Once again, manufacturers responded by producing **sanding** sealers for varnish using zinc stearate and thinned varnish.

What makes sanding sealers different from simply a thinned version of the finish is the addition of zinc stearate. However, *SealCoat* does not contain any stearates - it is simply shellac.

***Note**: Many manufacturers of sandpaper have responded to the problem of corning by offering paper that has a coat of zinc stearate to reduce clogging.*

b. Sanding Shellac: Corning

Having said that, pure shellac is generally hard enough that it sands moderately well. If you find that corning is taking place, there are several possible explanations.

i. Heavy Cut

Your cut may have been too heavy – particularly if you did not thin the 2 lb. cut in *SealCoat*. A coat of 1 lb. cut will be easier to apply, quicker to dry and easier to sand.

ii. Melting Point

Shellac has a very low melting point – it will start to soften around 120 – 140 degrees Fahrenheit. Accordingly, you should never power sand and should probably never sand with the lathe turning. **Light** hand sanding (with a craft foam pad backing) is quick and easy.

iii. Shelf Life

Over time, even a can of unopened *SealCoat* will undergo a chemical change which means it will take longer to dry and the dried film will be softer which will be prone to scratches and corning problems. However, determining the shelf life of SealCoat is not an easy task. While historically, Zinsser claimed that their product had a shelf life of 3 years from the date of manufacture they no longer make any claim to shelf life. On-line commentators report the shelf-life of an opened container to be anywhere from 6 months to 3 years.

Hence you want to purchase the "freshest" product you can. Unfortunately, while Zinsser used to stamp the date of manufacture on the can, they now use an absurdly complicated marking which begins with a letter, followed by 5 numerical digits and ending with a letter. The only digits that matter are the second and third which indicate the year and month of manufacture. (As for month, 9 is September, 0 is October and November and December are represented by the letters N and D.) Thus, LOT S9N107 D means that the shellac was manufactured in November of 2019.

If in doubt, place a drop on a non-porous surface (e.g., glass). If it does not set up within 20 minutes or so, the shellac should not be used.

Suggestion: A random survey of a few members reveals that most do not use much more than a quarter to one-half of a quart over a 12-month period. At $40/quart, you may want to share a purchase with one or two members and store your share in a mason/canning jar in a dark, cool place.

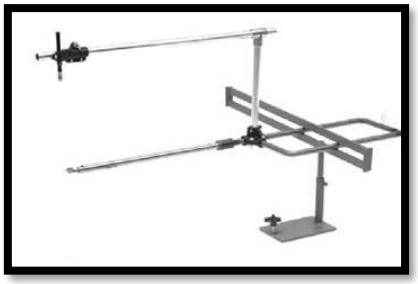
HOLLOWING WITH A CAMERA

At the May meeting Tim Soutar extolled the virtues of “camera” hollowing. The following is a brief introduction to this tool.

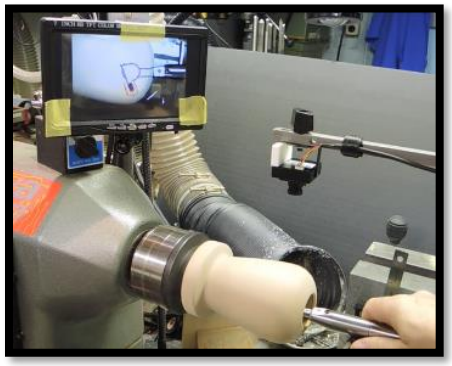
Introduction

One of the most popular tools for determining the thickness of a hollow turning is a laser.

Suspended on a bar above the cutting arm, the laser point is offset from the cutting edge to the desired thickness. While it works quite well, the laser light is set to only one point on the cutter head. As the hollowing proceeds from the neck to the sides to the bottom of the form, it needs to be constantly readjusted to maintain the desired distance from the cutting edge.

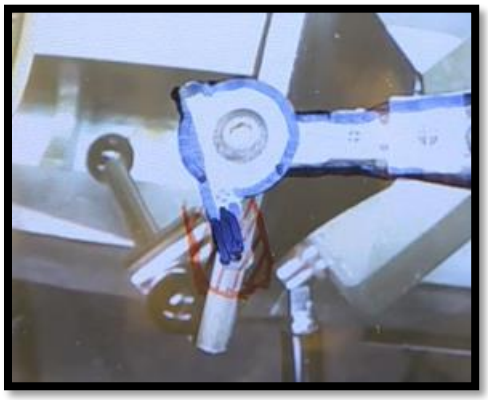


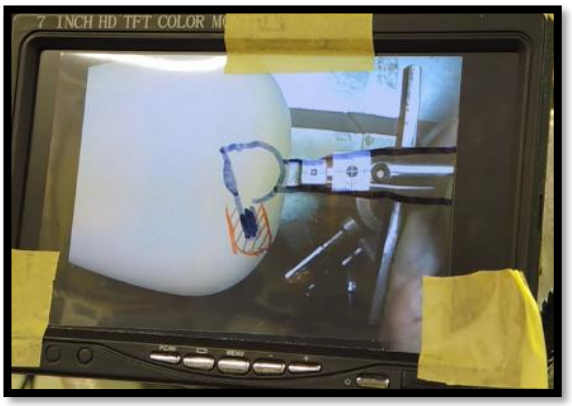
Camera System Overview



In the camera system, the laser is replaced with a small camera with the image fed to a computer monitor.

The outline of the cutter image (right: solid blue) as well as the desired thickness (red) is drawn on a piece of clear plastic taped to the monitor.





When the cutter is inside the form, you can still see its position in relation to the outside wall of the turning. And, unlike the laser, there is no need to constantly readjust the camera view.

Homemade Version

To the best of my knowledge, Trent Bosch was the first person to offer a commercial version of this tool which he called the Visualizer. However, at US$750 it is an expensive option. Accordingly, many turners began investigating how to make their own version.

The following video provides an overview of the parts that are required to construct this system. https://www.youtube.com/watch?v=pidLwThKHSw&t=17s. You can find many other instructional videos on YouTube.

If you are interested in making one of these tools, Tim has generously indicated that he would be happy to answer any questions you may have.

REQUEST FOR NEWSLETTER TOPICS!

As one who is becoming "topic-challenged" in my editorial old age, I would be grateful to receive suggestions for newsletter topics – particularly from new turners. If you have a question or an area of interest, please do not hesitate to pass these on to me at jrk@uvic.ca

No promises, but I will do my best.

PARTING OFF

Thanks to Harvey Pfluger for suggested topics, Tim Karpiak and Hovan Baghdassarian for the A/V setup, and of course the members of the Executive. A special thanks to those members who showed up early to set up the meeting hall and stayed late to clean up. Your help is greatly appreciated.

CONCLUDING THOT