IWG News

The Newsletter of the Island Woodturners Guild February 2021

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.

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THE PRESIDENT'S TURN

Well, I hope we have seen the last of the snow for this year! Between the snow and the wind there have been so many trees that have either fallen on their own or had to be taken down. I guess that's good for acquiring wood for turning but it's a shame to see the trees fall.

Many of you were able to watch last month's demo from John Kilcoyne on pyrography. It was amazing and very inspiring. And so much fun to watch! I bet it prompted a wave of wood burner purchases.

This Saturday promises to be another great demo with Nick Agar presenting his skills for making a Viking sunset bowl. If you have seen pictures of his bowl, I think you will be awaiting this with as much anticipation as me.

If you have seen the last couple of meetings, you will know we're doing a series of shop tours of members. It is wonderful to see other shops and if you want to participate, let me know and I will add you to the schedule.

It occurred to me the other day that we all have different shops and certainly different shop management styles. My tiny little shop will never be confused with a spotless, well organized shop. Although it has in the past been neat and tidy, sometimes for a few weeks in a row, it generally falls somewhere south of that. But I keep it safe, I know where mostly everything is, and I love being in there. And that is the key. As long as we can create and have fun that's all that matters.

I hope to see everyone on Saturday. As I've said way too many times, while it is not the same as a real meeting, it is still nice to see everyone.

Cheers,

Tim

NEXT MEETING: SATURDAY FEBRUARY 27: 1:00 p.m.

Our meeting in February will feature a live remote demonstration by Nick Agar.

With over 30 years turning experience, he is regarded as one of the foremost turners in the world.

He will demonstrate turning, texturing, and colouring of his Viking Sunset Bowl.

MARCH MEETING

This meeting will feature a remote demonstration by Martin Sabban-Smith.

The author of over 150 YouTube videos on turning, he is well known for his clarity, enthusiasm, and humor.

You can find more information on Martin on his website at:
https://www.msabansmith.com/

Note: While the start time has not been set, as Martin is located in England, it will likely be 2 or 3 hours earlier than our normal 1:00 p.m.

JANUARY RECAP: PYROGRAPHY

The following is a summary of the presentation on pyrography by John Kilcoyne.

I. EQUIPMENT

Introduction

There are two broad categories of pyrographic techniques employed by woodturners which have slightly different equipment requirements.

The first of these, which can be characterized as **Conventional or Decorative**, consists of figures or patterns. The works below by Cynthia Gibson, Michael Hosaluk and Georgianne Jackofsky are illustrative.



The second form is known as **Branding** and consists of texturing or heavy patterns. This form is illustrated in the works by Molly Winton, David Heiser and D. Gillard.



A. The Basic Unit

A pyrography unit consists of three components: a burner (transformer), a pen with a specialized nichrome alloy tip and a connecting cord. The transformer "steps down" household voltage to a usable level for burning wood (usually 2 - 3 volts) and includes a controller which enables the user to vary the wattage (power) flowing through the cord to the pen depending on the density of the wood and the desired effect.

1. Burner

a. Homemade

One of the most popular homemade burners is the "Priddle Vapourizer" which uses a re-wired battery charger. While some people rely upon a dimmer switch to vary the power, Tim Soutar has found that a variable transformer (Variac) is a much better option. With a typical rating of 10 amps, this unit is particularly well-suited to branding.

For information on making your own burner unit using a battery charger, see http://www.woodturnersresource.com/extras/projects/priddle/WoodBurner.html.

Alternatively, you could consider making a burner from readily available electrical components as was done by Hew Lines in building his *Super Burner* which is also very effective at branding. For information on this unit, see the note in the May 2018 Newsletter.

b. Commercial

While there are many manufacturers, the 4 most popular commercial burners are the Colwood ($120), the Razertip ($140), the Optima ($150) and the Burnmaster ($280). (The prices are for the single port, base model.)

These machines are all well made, and each is used by a number of professional turners and pyrographers.

Note: Wattage

A review of various sources suggests the following wattages of these 4 units **in actual use**.

Razertip	20 - 22 watts
Colwood	30 – 35 watts
Optima	30 – 35 watts
Burnmaster	50 - 55 watts

On its face, higher wattage means faster burning. While not an important factor in conventional pyrography, it is an important one in branding. However, focusing only on wattage can be misleading. The more relevant issues are tip temperature and speed of reheating. While wattage will be an important factor, the gauge of the cord, the type of connection jack and the pen design will all affect these issues.

b. Port: Single or Double?

All 4 manufacturers offer dual port machines. While this enables one to have two pens plugged in, it is important to note that only one of these will be hot at any one time.

I don't believe that the extra cost of the dual unit and a second cord is warranted for woodturners. Firstly, switching pens is relatively rare. Whether doing conventional pyrography or branding, I typically use the same pen for many hours. Secondly, it takes about 2 seconds to switch pens which makes the "time savings" illusory.

2. Cord

The standard cord offered by most manufacturers is 18 gauge. I strongly recommend that you purchase a 16 gauge cord which will provide greater heat and faster heat recovery.

The magnitude of the difference is revealed by the results of the following experiment. When 1.6 volts was sent through an 18 gauge cord, the draw was 9 – 10 amps. When the same voltage was sent through a 16 gauge cord, the draw was 14.5 – 16 amps which represents a massive 60% increase.

Note: I do not recommend purchasing a bundled kit of burner, cord, and pen. The cord is typically only 18 gauge and the pen tip unlikely to be of much use.

3. Pens

a. Nichrome Wire

The tips of pens are made of nichrome wire. Widely used in heating elements, it can withstand 1150 degrees C.

b. Types: Fixed vs Interchangeable

There are two types of pens.

A fixed tip pen (FT), available in standard or heavy duty, has the wire tip welded to the pen.

An interchangeable pen (IT) has tips that are secured by two screws or sockets.

The primary attraction of an IT pen is low cost. For example, Razertip's IT pen (called a BPH) costs $32.00 and each tip costs approximately $8.00 for a total cost of $55 for 3 tips. To purchase these 3 tips in an FT would be approximately $95.

Nonetheless, for those tips that are **most frequently used**, most pyrographers recommend FT pens. They heat faster, provide more consistent burning, offer better control and, of particular importance to turners who typically work with hardwoods, are much stronger.

4. Assessment

a. Previously

When I decided some years ago to purchase a unit, I opted for the Razertip single port machine. This was based in part on my decision that I was not going to do much, if any, branding and so there was no need for a higher wattage burner. More importantly, I concluded that for conventional/decorative work, the Razertip pens were the best ones on the market for the following reasons.

i. The Razertip pens have the smallest diameter which makes them highly maneuverable: they can be used much like a pen or pencil.

With higher wattage, you need a thicker pen to provide sufficient insulation to prevent burning your hand. This is particularly apparent when one considers the Burnmaster pens (right).

Note: For branding, a thicker pen is not a problem since the pen is typically used in a "more vertical" position.

ii. The tips are made from a proprietary Ni-chrome alloy which reheat very quickly.

iii. The tips are laser welded to the pen whereas most other manufacturers use solder.

iv. At the time, they were the only manufacturer which would replace damaged tips for a nominal fee which essentially meant a brand, new pen. (I am now on the 3rd tip of my most frequently used pen)

v. Razertip has by far the largest selection of FT pen tips.

b. Today

There are a few changes in the market since then. First and most importantly, Razertip now offers adaptors ($8) which enable their pens to be used in the other 3 burners.

CAUTION: If you use a Razertip pen in any of the other three higher wattage burners and turn them on to full power, you will eventually destroy the pen. However, if you are careful and experiment, you can use them in these units including even the Burnmaster.

Secondly, Optima and Colwood now offer FT pens and those from Optima are much closer in size to those from Razertip i.e., they are more "pen-like".

Note: While Optima will now replace damaged tips, Razertip also offers this service on Optima, Colwood and various other pens. The cost is CA$8 which is less than other manufacturers and does not involve mailing the pens to the U.S. where one may face custom charges on return.

c. Considerations

Despite these changes, I would still purchase the single port Razertip today. It works very well for conventional pyrography and the only branding that I do is stippling which this unit also handles very well.

However, many turners want to engage in more robust branding and depending upon the configuration and size of the tip, the relatively low wattage of the Razertip makes this a slow process.

If so, you might want to check out the Optima burner which enjoys high praise from many turners. It apparently handles conventional burning reasonably well and is much better suited for branding .

Note: Razertip does offer a high-end burner, the P80 which delivers tip temperatures from 80 to 800 degrees Celsius. However, at $360, it is targeted at professional carvers/pyrographers.

Regardless of which burner you purchase, I recommend using Razertip pens for the reasons noted above.

B. TIPS

Razertip offers over 900 tips and sizes which reflects the fact that as is the case with all manufacturers, their primary customer base is bird carvers. Having said that, I use only 2 tips for 95% of my burning.

1. Knife (Razertip Series 14)

This tip is the equivalent of my ½" bowl gouge. I use it for 90% of my burning. It burns crisp, clean lines and unlike the skew tip, has a rounded heel which makes it easier to burn curved lines.

As most of my work consists of very fine burning, I use the extra-small knife (F14XS) which will burn 120 lines per inch.

Note: If you only do straight lines, you may want to consider the skew tip (Series 1). For beginners, the straight bottom tracks much better than the knife.

ii. Ball Stylus (Series 99)

While this tip can be used for writing, it is primarily used for texturing – specifically stippling. It produces a finish similar to a round ball burr in a rotary carver.

iii. Spear Shader (Series 5)

In projects where I want to undercut a pattern, I find that this shader tip is very effective.

iv. Custom Tips

For special texturing, you may want to make your own tips using Nichrome wire. (Amazon: $12/16ft). I would suggest 20 – 22 gauge for fine working tips and 18 for branding tips.

One of the most common custom tips is the Basket Weave which was developed by Molly Winton. This tip is made by wrapping the wire around a small drill bit or nail. The challenge is to ensure that the diameter of the tip is exactly ½ the length.

The photo below shows some of the textures which can be created with this tip.

4. Other Equipment

a. Lung Protection

If you do any burning - conventional or branding – you must deal with the smoke.

Given the volume of pyrography I do, I "splurged" and bought the *Razaire* from Razertip ($425). It is an exceptionally powerful and quiet machine.

Alternatively, you can simply use a fan to draw the smoke away. A fan from a desktop computer provides a relatively effective and inexpensive option.

Note: The fan must be positioned on the far side of your work to draw the smoke away from you. Otherwise, the air current will cool off the pen tip.

b. Sharpening

For initial sharpening (and shaping) of tips, you should use a small diamond hone. Thereafter, the only tool you will need for sharpening is a strop which is simply a piece of leather, glued to a piece of wood, which is dressed with a honing compound.

c. Brass Brush

You will also require a small brass brush to frequently clean ash from the pen tip to avoid smearing.

d. Magnifier

Regardless of the type of burning, a magnifier is a recommended aid.

e. Clean Up

I use a 3M abrasive pad (maroon) to clean ash from a turning. For larger works, I mount a piece of this pad on a mandrel for use with a rotary tool.

f. Gloves

As a charter member of *BOCAM* (*Brotherhood of the Clumsy and Absent Minded)* I find golf gloves a useful safety accessory.

II. PYRO PATTERNS

A. STIPPLING

This is the most common type of branding. While you can use a variety of different tips, the most popular one is the ball tip.

You might want to keep the following suggestions in mind:

1. It is important to stay within the confines of the area that you are stippling. If you stray outside the boundary, this mistake will be quite visible once a final finish is applied.

2. While a linear row of “dots” is fine at the perimeter, thereafter the texturing should be random. Otherwise, the “straight” lines will detract from the intended effect.

3. Ensure that you stipple the entire area. Gaps will be readily apparent when a finish is applied.

4. This texture looks best when the depressions are a relatively consistent depth. Practicing on a sample piece of the same species will help you determine how long to leave the tip on the surface.

The following two photos show somewhat different stippling techniques.

In this bleached arbutus bowl, the stippling was used to create “negative” patterns.

(The patterns reflect ancient South American pictographs of llamas and associated geometric patterns.)

The application of different sized depressions on this hollow form produced a unique and striking visual effect. While Tim Soutar used a variety of ball burs in a rotary carver, the same effect could be achieved using different size ball tip pens.

B. FLORAL PATTERNS

While I rarely use floral patterns, they are popular with many turners. This practice piece shows some of the variations that can be burned.

Technique

Unless you are going to colour after burning, one of the challenges is avoiding a “blob” at the start of a line. When the tip is initially applied to the wood, it is relatively hot and will produce an aggressive burn. As some of the heat is absorbed by the wood, the tip then cools off slightly producing a lighter burn.

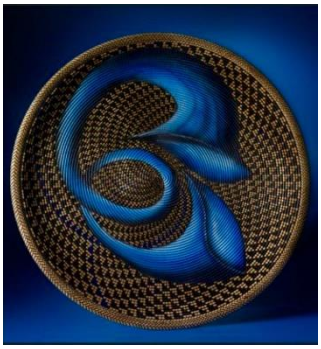
To avoid this, the most common advice is to adopt an “airplane landing” technique. Gently apply the tip to the wood **with the pen in motion**. To avoid an overburn at the end, adopt an “airplane taking off” technique – again with the pen in motion.

As I frequently work in very confined circumstances, I prefer to use a different technique. I elevate the pen to a vertical position when beginning the burn and then lower it to a more horizontal “pen position” to complete the line. As the tip of the pen is very narrow, this produces a very light burn at the start while subsequently lowering the pen means that more metal is engaged on the wood. With a bit of practice, the result is an even burn line.

C. TWIG PATTERN aka Birds Nest

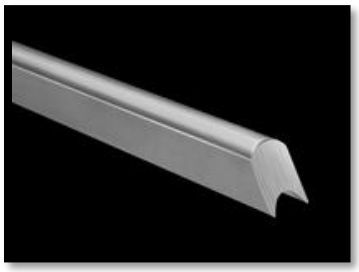
This pattern is inspired by the work of Jacques Vesery. While it is relatively easy to create, you must ensure that the size of the twigs vary and that you pay attention to the crossing (under or over) of the “twigs”.

D. BASKET WEAVE ILLUSION



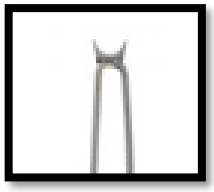
The use of pyrography to produce a *faux* basket weave was made popular by David Nittman (left) and is now championed by Harvey Meyer (right).

The most popular way of forming the beads is using a beading tool from DWay Tools.

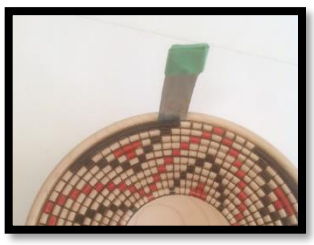


While you could burn the concentric lines, a faster and more accurate method is to use a piece of plastic laminate. The laminate is sanded to a thin edge and is then used to burn the lines with the lathe at a high speed.

The radial lines are laid out using the lathe's indexing system. While these lines could be burned using a knife or skew tip, I recommend using a beading tip that is sized to fit over the surface of the turned bead.



Note: Razertip makes two beading tool tips - 3.0 mm and 4.7 mm. While the latter exactly matches a 3/16" bead, the 3.0mm tip is slightly smaller than a 1/8" bead (3.175 mm). Using a diamond hone, it took less than a minute to modify this tip to match the 3.0 bead.



For colouring, I recommend using a small piece of thin sheet aluminum shaped to match the curvature of the beads. This serves to keep ink off adjacent beads.

The bowl at left was turned from a maple tree that was brought down by lightning. As a simple form of *faux* beading, I used the Haida symbol for lightning as the pattern on the piece

E. GEOMETRIC PATTERNS

The following are a few examples of geometric patterns.

Colouring a piece hides a multitude of burning “sins”.

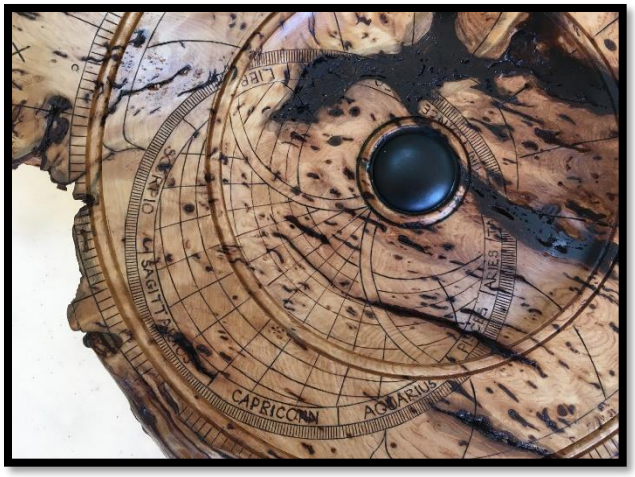
The form of this hollowing was inspired by Pueblo pottery.

(The colour of the maple was quite insipid, so the piece was dyed after burning.)

In keeping with the form, I burned various Pueblo and Anasazi geometric patterns on the top.

The pattern on this yellow cedar turning is based on a 15th century astrolabe. First used as early as 200 BCE for celestial navigation, it was supplanted in the 18th century with the invention of the sextant.

(While normally I would not do pyrography on a figured piece, the burl reminded me of a celestial pattern and the astrolabe pattern did not obscure the figure.)

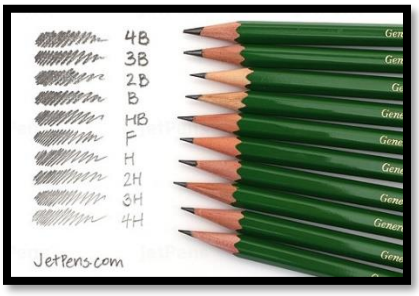


The patterns on this lidded box are taken from traditional Ashanti and Zulu artifacts.

F. IMAGES

a. Drawing: freehand or stencil.

There are 2 grading scales for graphite in a pencil: H and B which stand for hard and soft. For each scale, there are 9 levels. Accordingly, a 9B pencil has the softest lead while a 9H the hardest. A 9B pencil will produce a line that is easy to see because a great deal of graphite is deposited on the wood. However, this means that it will be harder to remove. Conversely, a 9H will be easy to remove but difficult to see.



I have found that a 2H or 3H pencil is the best compromise between visibility and ease of removal.

b. Image Transfer

i. Pyrography Paper

This is transparent paper that is specially treated so it will not smolder or melt. (Razertip: $10) You can use it in a printer, tape it to the turning and then burn following the outline.

I have not found it convenient to use. Unless it is a simple pattern, as you burn through the paper, portions of it will come loose from the masking tape making it very frustrating to complete the pattern.

ii. **Marker Blender**

This is a better option to pyrography paper. A blender marker is a xylene-based, colourless felt pen (Opus: $4.40). While designed to blend colours in solvent-based inks, it can also be used to transfer a pattern printed on regular paper **using toner ink** such as that used in a laser printer or photocopier.

The print is secured to the turning with masking tape and the pen is used to soak the paper. The xylene "dissolves" the toner ink which is transferred to the wood. While most sources recommend burnishing (spoon) to transfer the ink, you should be careful not to press too hard. Otherwise, you will spread the ink.

Note: Ink Jet Printing

As one who has used a laser printer for over 25 years, I had assumed that ink jet printers had gone the way of the abacus. My bad!

Xylene will only dissolve an image that is toner based. It will not work on a page from an ink jet printer which uses ink that consists of dyes or pigments in a liquid solution.

To transfer an image from an ink jet printer you will need to use a sheet of specialty "waxed" paper in your printer. The most convenient source is the backing sheet of address/shipping labels. (The labels themselves are removed and discarded)

Insert the backing paper into your printer **ensuring that the image will be printed on side of the backing paper which held the labels**.

Caution: When removing the page from the printer, be careful not to touch the image as the ink will be sitting on the surface of the "waxed" paper rather than being absorbed into it. Apply the image to your turning and gently burnish it using a spoon or your finger.

Andre Robin tested this technique and reports that it worked very well.

He first printed his pattern onto the backing paper from address labels.

(The creases are the result of cleaning the ink off a prior print using denatured alcohol which allowed him to re-use the paper.)

While the transferred image was blurrier than a toner image, he found that the excess ink was easily removed after burning using 500x sandpaper

This maple turning was inspired by an English mazer which was used as a drinking bowl during the middle ages.

The text reads "ALE FOR AN ENGLYSSHMAN IS A NATURALL DRYNKE". This "slogan" was a response by 16thC. English ale brewers to the threat posed by the import of lagers from continental Europe.

Note: If you are transferring text, you must reverse the lettering on your print copy. If you use MS Word, this can be done using a text box.

Inspired by *Lord of the Rings*, the text in Elvish reads "***One ring to rule them all".***

This bowl was inspired by Viking funeral boats. The pattern is a classic Viking serpent figure.

G. ANCIENT POTTERY

Deep burning (with knife and ball tip) allows one to mimic the effect of repaired pottery.

The figures are taken from ancient Hittite art.

One can easily move from this to a conventional brick or cobblestone pattern.

H. BRANDING

A basket weave pattern on a small maple box.

I. CARVING

Finally, it is possible to use a pyro unit to “carve” wood for a shallow relief.

This feathered egg is based upon the work of Jacques Vesery.

Modelled on a Haida design, the relief was first “carved” with a knife and spear shader before stippling with a ball tip.

(The relief is approximately 3/32” deep)

Following an (excellent) workshop with Dixie Biggs, I wanted to practice the techniques that I had learned. This hollow form is modelled on one that she used during her demonstration.

While most of the carving was done with a rotary carver, the gingko leaves were first outlined with a knife and undercut using a spear shader. The surrounding areas were stippled using a small ball tip pen.

MIKE NEAL: HANDLES AND RELATED TURNING ITEMS

Over the years, Mike Neal has generously made tool handles, hollowing rigs, steady rests, and a wide variety of turning aids for many members. With a fully equipped machine shop, the workmanship and price cannot be beat.

If you need a machined item, give Mike a call to see if he has the time to help. He can be reached at 250 886-4347.

REMINDER: VIRTUAL SHOW AND TELL

A reminder to forward photos of your recent work and information on the species, size, and finish to Virginia Lee (remoteva@gmail.com) so she can post them in the *Virtual Show and Tell* on the Guild website.

(You can access it under the menu heading *Galleries* or by clicking on this link: https://www.islandwoodturners.ca/galleries/show-tell/)

PARTING OFF

Thanks to Andre for the information on Ink Jet transfers and to the members of the Executive for continuing to offer outstanding remote demonstrations.

Special thanks this month goes to Tim Soutar for a great shop tour (and a heavy dose of envy!)

CONCLUDING THOT