

John's Wood Turnings

Purpose of this document

The purpose of this document is to provide the reader with a series of short paragraphs that will enable him or her to better understand the art and craft of woodturning as well as its terminology.

Who is John Giem?

John and his family have been living in Fort Collins, Colorado, since 1979. He has been doing woodworking for over sixty years. After retiring from an engineering career, he pursued his interest in woodworking with emphasis in wood turning. In addition to doing woodturning, he also teaches woodworking in his workshop.

What is woodturning?

Woodturning is performed by placing a chunk of wood on a machine called a lathe. The lathe rotates the wood while the craftsman uses various hand held tools to cut and shape the wood into the desired configuration. Most turned items (bowls, cups, candle holders, vases, etc.) are cut while rotating around a single axis resulting in the piece being symmetrical around that axis. Sometimes, the artist will remount the wood and turn it around two or more different axes to accomplish the specialized shapes. An oval hammer handle would be an example of multiple axis turning.



Where does he get his wood?

John obtains the majority of his wood locally from Tree Surgeons and private individuals. This is recycling in its truest form. The trees were cut for reasons other than harvesting but John is able to save them from the landfill by converting them into works of art and other useful items for your enjoyment. He cuts the blanks for his turnings from the logs recovered.



Characteristics of wood and effects

Wood is unique in that it is a renewable resource. It is from a once living thing. Part of the beauty of working with wood is that one never knows what will be found when he cuts into that log. The craftsman must adapt to the grain, colors and imperfections of the wood. Wood moves, that is, it changes size and shape as it dries out. The amount and direction of the movement is one of the characteristics of wood that make it challenging and interesting. If you notice that a wooden bowl is not perfectly round, then you are seeing the result of wood movement due to the change in the moisture content of the wood.

Did he use dry or green (wet) wood?

The larger the size of the piece, the higher the probability that it was turned from green wood. As wood dries, it shrinks. This sets up stresses in the wood which can cause it to split or check. It is difficult (and expensive) to get large pieces of dry wood with out cracks. It is easier to dry thinner wood (three inches and less) without it cracking. Also, some types of wood are so bad about cracking that they must be turned while green and then allowed to distort or warp while drying. Consequently, if it is larger than two or three inches it was probably turned with wet green wood, dried and then maybe returned. See below.

Types of wood finishes

In general, there are two types of wood finishes, those that soak into the wood and cure there and those that remain on the surface of the wood. The finishes that soak into the wood will react with UV light and oxygen to cross polymerize and form a hard substance within the wood. It may scratch easily but it is also easily repaired and maintained. Examples are linseed oil, tung oil and walnut oil. When enhanced with dryers they may be called finishes such as Minwax Tung Oil Finish. Varnishes and other finishes will form a hard film on the surface of the wood to provide a barrier to dirt, water and wear. It is a harder finish and will wear longer but when scratched or damaged, it takes more work to make a proper repair.

Food Safe Finishes

According to the article ***Food-Safe Finishes*** by Bob Flexner in the Spring 2008 issue of ***American Woodturner***, all clear wood finishes sold in the US are food-safe when they are fully cured. On John's wood turnings he uses Walnut Oil, Danish Oil (linseed oil with dryers) and Tung Oil Finish along with various waxes. His preference is, after sanding, to use multiple coats of Minwax Tung Oil Finish letting each coat to soak in and cure. After curing, each piece is buffed smooth and waxed with carnauba wax, providing a hard durable finish.

Care of turned wood items

You must decide how you want to use your piece of turned wooden art and how you want it to look long term. If you want it to be a display item, then put it in display and dust it as needed. Occasional buffing and usage of a good wax will help also.

If you want to use it to serve food, then do it. Liquid or wet foods are acceptable but be aware that some foods may stain the wood. This is only a cosmetic issue. DO NOT use in the microwave. DO NOT wash in the dishwasher. Clean it using warm soapy water, rinse and let dry. Over time it will develop a warm pleasing patina finish. It may distort some also. If desired, you may want to oil it to improve the appearance. DO NOT use vegetable oil, it will soak into the wood and over time turn rancid. The preferred oil to use would be Walnut Oil, apply liberally to the dry wood, let soak for five minutes or so, wipe off any excess and let dry (cure). A safe alternative would be to use food grade mineral oil. Mineral oil is edible, and looks good but it does not dry or cure.

Types or classifications of turned items

Wooden turned works are grouped into two major categories, spindle turning and faceplate turning. In spindle turning, the long axis of the wood grain is parallel to the axis of rotation, that is the work is

held by two ends each of which is end grain. Examples: baseball bats, wooden spoons, candle sticks, chess pieces, the vertical turned spindles in stair banisters and porch rails (you may need to visit some of the older homes to see samples of the last two.). Most commercial woodturning is spindle turning. Faceplate turning gets its name from the practice of screwing the wood to a face plate so that it can be mounted on the lathe. The wood grain of these pieces runs perpendicular to the axis of rotation. This orientation makes it more difficult for the artist to obtain good surfaces on his work but the resulting patterns of the grain in the wood make it worth while.

Is it a spindle or faceplate turning?

It depends. Pick up the piece and try to determine the direction of the wood grain then determine the axis of rotation. If they are parallel, then it is spindle turned. If they are perpendicular, then it is classified as faceplate turned. But it could be both if it was mounted multiple times. Also, some woods classified as burls have such twisted wood patterns that they don't fit into either category but that is what makes them interesting.

The Jewelry Tower to the right contains both spindle and faceplate turning. The two vertical pieces were spindle turned while the base and upper notched ring were held in a chuck and faceplate turned.



The steps in making a wooden bowl, Dry Wood

1. Plan the size and design of the desired bowl
2. Obtain a piece of dry wood without cracks that will enable you to cut a blank to fit your design.
3. Lay out your bowl on your piece of wood and cut the outline with a bandsaw. At this point, the blank will be a round cylinder with flat top and bottom. The wood grain will be across the diameter of the cylinder and will be a faceplate turning. (Some places in Europe, they run the wood grain from top to bottom of the cylinder.)
4. Mount the blank on the lathe between centers and turn the outside shape of the bowl. Leave a tenon (a temporary stud) on the bottom of the bowl for remounting.
5. Remount the bowl using a chuck to hold the tenon on the bottom of the bowl. Turn the top and inside of the bowl. Some people still screw the bowl to a faceplate for turning but most prefer the convenience of holding the work with a chuck.
6. Sand the entire bowl except for where it is held by the tenon on the bottom.
7. Dismount the bowl and mount a scrap piece of wood in the chuck. Turn the scrap wood to fit the inside of the bowl with a tight fit. This is called a 'jam chuck'.
8. Mount the bowl over the jam chuck holding it on using friction only. Jam the bowl on the jam chuck. Finish turning the bottom of the bowl and sand it.

9. Put the desired finish on the bowl.

As you can see, turning the bowl takes many steps and at any time the artist may find new and unexpected 'features' inside the wood of the piece being turned. Sometimes, these are flaws such that you have to scrap the piece. Other times, great beauty is revealed.

Making a wooden bowl, Green Wood

When turning green wood, the artist must make allowance for movement while it dries. There are two approaches, one is to completely turn the bowl to its finished form with thin walls and just let it reshape itself (warp and distort) while it dries. This lets the wood express itself resulting in interesting and beautiful shapes.

The second method is to rough turn the bowl leaving the sides of the bowl rather thick. The wood is then placed in paper bags to control the rate of moisture loss. The rough turned bowls are then put on the shelf and allowed to cure. After the wood dries and has distorted, the wood is remounted on the lathe where it is turned into its finished form removing any distortions.

The basic steps for turning green wood are the same as for dry wood with the appropriate changes as indicated above.

What is a Natural Edge Bowl?

Most bowls are turned from wood obtained from deep within the tree. A natural edge bowl uses wood from the outer surfaces of the log. The term 'natural edge' comes from the fact that the outer surface of the tree, the natural edge, makes up the rim of the bowl. The bowl's edge will be irregularly shaped often having the tree bark still attached.

The edge of the bowl, as seen from the side will be saddle shaped, high on the ends and low in the middle. The size of the log determines the shape of the bowl's edge, the saddle. Since the bowl is turned on a single axis, it will be round in shape but the shape of the edge and the grain of the wood cause an optical illusion. The round bowl will appear to be oval shaped to the eye.



What is burl and why do I care?

You may have seen a tree that has an unusual lump or growth on the side of its trunk that was otherwise straight or smooth. This bump may have been caused by the healing process from a broken limb or some other cause. The 'tree experts' don't really understand the formation of burls in most cases. (The British call burls burrs.) For the wood turner, a good burl is hard to come



by but is worth the search. The wood grain within the burl is very unpredictable and goes in all directions making it difficult to develop a good finish on the final piece. But, the results can be fantastic.

The photos at the right show the top and bottom of a bowl that was turned from a maple tree burl.



Enclosed form, what's that?

Think of a bowl, the opening into the bowl is as large as or larger than the space inside the bowl. For an enclosed form, the opening into the interior of the object is smaller than the space inside. If it were made of ceramic, you would probably call it a vase. The opening into the vessel (enclosed form) may only be an inch across while the diameter of the interior may be several inches in diameter. Special tools are needed to reach around the interior and carve out the wood. The wood grain may be oriented either parallel or perpendicular to the axis of rotation. In the photo to the right, the 8 inch tall enclosed form has an opening in the top 1 1/2 inches wide whereas the hollow interior measures about 4 inches in diameter.



That's a box? I thought boxes were square.

A box is an enclosed form of any shape that has a fitted lid. Boxes on the lathe are usually spindle turnings with the wood grain running vertically within the box. This orientation allows a better fitting lid when considering wood movement. (With wood movement the box remains round so that the lid continues to fit. If it were 'faceplate' oriented, it could become oval making the fit of the lid difficult to control.) Most boxes are turned from a single piece of wood. With this technique, a small amount of wood is removed in the center to separate the top from the bottom. As a result, when the box is made this way, the patterns in the wood of the finished box can be aligned between the base and the top. The lid may be fitted to the base of the box with a loose or tight friction fit. Also, the lid and base may be threaded so that the lid can be screwed on and off.



Finial? What's a finial anyway?

The purpose of the lid of a box is to enclose the space within the box and prevent the loss of its contents. The outside of the lid provides the artist a space to be creative and have some fun. Many artists put interesting shapes and spires on the lids of their boxes. These shapes and spires are called finials. They are used to add functionality, a handle, to the lid of the box or they may be justified only by their beauty. In fact, some finials are very elegant and delicate.

The finial may be part of the same wood used to make the lid, or new and contrasting woods may be incorporated to fit the needs of the artist.

