

Demo: Layered Bowls

Using layered or stacked wood to create turned objects has been used in woodturning for many years. Dale Nish described and pictured it in his classic book Creative Woodturning. Others have used this process even earlier.

I was first introduced to the technique of turning layered bowls when Jim McPhail gave a daylong demo to Carolina Mountain Woodturners in 2001. I was not at the demo but I obtained a VCR of it and have viewed it several times. The video describes in detail the many aspects of this turning technique. Jim also wrote an article that was published in "The Journal of the American Association of Woodturners" (Vol. 20 No. 4, 2005).

I experimented with his techniques. Some I tried and was satisfied with – others I modified to my liking. In this demo I will show you the process that I have found to be both satisfying and rewarding.

Wood Selection:

All wood must be dry. Most hardwoods can be used. A few I have found to be unsatisfactory due to grain configuration and ease of splintering. An example is Wenge. If used for the rim it chips easily. However, if it is used as an intermediate layer it appears to work well and is quite attractive. Woods can be purchased in the thicknesses needed: i.e. one-eighth, one-quarter, one-half or three-quarters of an inch. This can, however increase the price. You can also resaw your own but this requires a hefty bandsaw with a wide blade. Wood is available from various suppliers. One I use is Cormark International in Weaverville, NC. Woods can be reasonable or they can be quite costly. The latter category includes imported burls and some of the highly figured hard woods such as cocobolo. These higher priced woods can be used very effectively for the bottom layer or featured layer.

Tools Needed:

- a. Lathe – mini lathe is ok
- b. Bandsaw
- c. Drum sander if available
- d. Book type press or clamps
- e. Buffing system (Beall)
- f. Bowl gouges
- g. Beading-parting tool – ¼ inch
- h. Parting tool – thin
- i. Skew
- j. Round-nosed scraper
- k. Depth gauge (optional)

Materials:

- a. Sandpaper – grits to 1500
- b. Scotch Brite Pads by 3M as used in automotive work
- c. Glue – I use Titebond Original for gluing the layers together. It is more flexible than and over time does not become as brittle as CA glue. It also

gives you more time to work and does not set-up so rapidly that you are forced to rush. It is also much less expensive than CA glue and safer to work with. I do use CA glue to attach the glue block to the work piece and as a sanding sealer prior to waxing and polishing.

- d. Wood – See above under “wood selection.” You should choose woods for the layers that enhance each other. The featured layer (center) and the bottom layer are the deciding layers when building a piece.
- e. Veneers – These can greatly add to the artistic appearance of a piece. They also act as a transition from one layer to another and quite possibly provide a cushioning between hard wood layers. Veneers can be purchased in many colors but they are costly. I obtain veneers in large sheets, usually in maple, and cut squares to the desired size. These I then dye with water-soluble aniline dyes. It is messy but quite cost effective.
- f. Finishes – I have used gloss lacquer by Deft, which produced a glass appearing finish. One gallery, however, said that they did not like the “plastic” look so I began using thin CA glue as a sealer after sanding. Then I use the Beall System to give a very attractive satin sheen that seems to be quite desirable.

Process:

Select the wood species you want for the various layers. There are no hard and fast rules as to the number of layers used in a piece. It partly depends on the thickness of the layers and the shape of the piece you are turning. The greater the total thickness of the layers, the greater the depth of the piece will be. I begin with a bottom layer, which is about one-half inch thick. Before stacking the layers they are cut to size. I usually cut them about 5x5 inches. Between wood layers I use contrasting veneers (red, white or black). Sometimes I use one veneer, other times two or three veneers. An average bowl will have a bottom or base layer. Then there will be two additional layers – one above the featured layer and one below it. Finally there will be a top layer or rim. Between each of these layers are veneers. Once you have cut the layers and stacked them in a pleasing display of texture and color you are ready to begin the gluing-up process.

When gluing, I begin with the rim or top layer. I apply the glue liberally to the entire surface and then place that layer on the next layer (veneer). If additional veneer layers are to be used I glue them up at this time and then glue on the next wood layer. I stop at this point and clamp or press the layers together for several hours. I do not glue up the entire piece at one sitting. It usually takes four or five steps. If you attempt to glue too many layers at once it is difficult to prevent slipping of the layers when putting pressure on them in the clamping process. Even with two layers of wood and two veneers you have to be cautious when clamping. When the final layers are glued to the piece I leave the entire piece clamped overnight. When clamping the layers, do not apply too much pressure because too much glue can be pushed out and a weak glue joint can result. During the gluing process I place the pieces on kitchen wax paper.

Now that the piece is glued up you can attach a glue block. I use a two and one-half inch diameter block made of maple, elm, or ash. I make it about three inches long so that it can be used several times before there is virtually nothing left of it. I mark the center of the bowl blank and scribe a circle where the glue block is to be attached. I glue

it to the piece with thick CA glue and accelerator. To date, I have not had a glue line failure. I scribe a circle on the piece prior to gluing it to the block the size I want the bowl to be. This circle can then be cut on the bandsaw either before or after being attached to the glue block. At this point the piece is ready to be put in the chuck and turned. Note: The glue block is attached to the top or rim layer, not the bottom. This permits me to turn the foot of the bowl when turning the outside. This then permits the piece, after parting from the glue block, to be placed on the expansion jaws for turning or hollowing the inside. The recess on the foot to accept the jaws is made about one-eighth inch deep and one and one-eighth inches in diameter. This permits the pin jaws of my Vicmark to expand into the recess and hold the piece. You must be careful when expanding that you don't crack the foot. Some woods, such as cedar, are more prone to this. I have learned the hard way BUT I have learned. Once the outside and the foot have been turned the piece is sanded and the CA sealer is applied. Once dry, I again sand to the final grit. The surface is then ready for the final waxing and buffing which will be done when the entire piece is finished.

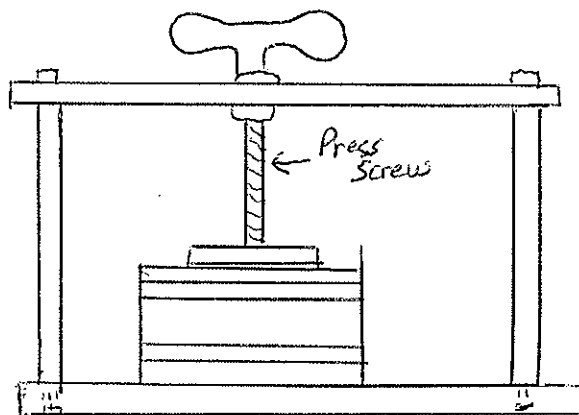
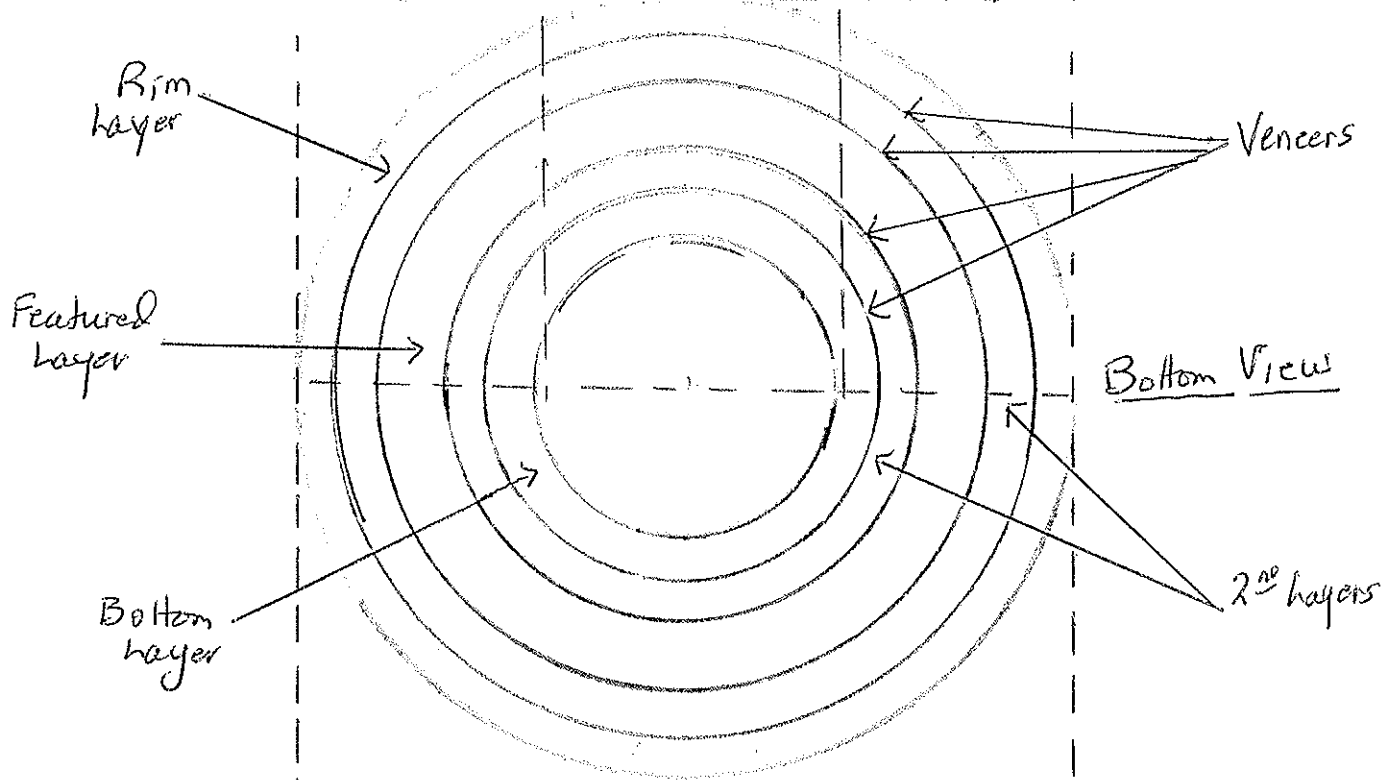
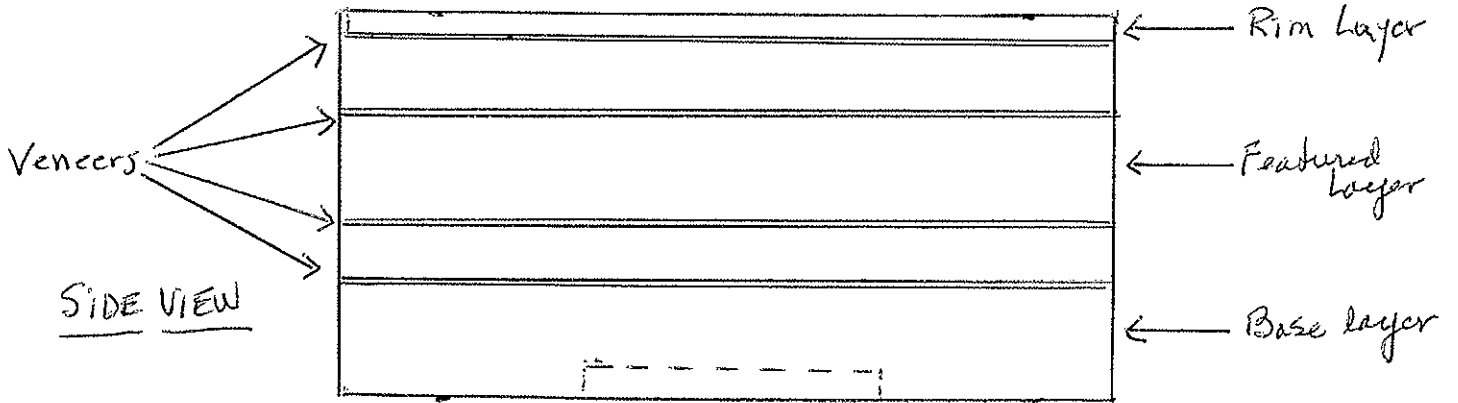
The piece is reversed and placed on the pin jaws. The interior is hollowed to a wall thickness of about three thirty-seconds of an inch. When turning the bottom of the interior remember the recessed foot. A depth gauge can be of benefit here. Once hollowing is completed the interior is sanded, sealed and sanded again. This essentially completes the piece except for buffing. I use the Beall System. The white polish is omitted on any open areas such as burl voids and the foot. The entire piece is waxed. It can then be signed.

Post Demo Note: Each of you will probably modify the above process to suit your own tastes and talents. That is what makes it fun and rewarding. You can change woods, sizes and shapes as you see fit. You are not using a huge amount of wood and you are not spending an excessive amount of time or money on each piece so you can be creative. If it doesn't work out to your satisfaction simply start over. I glue up four at a time. This seems efficient. They can all be the same or different. Try it! Have fun! They make great gifts.

Bob Gunther

Attachment: Diagrams

Diagrams:



Press Clamp - 9"
Woodworkers Supply
Item # 125050