The Lost Wood Process

Shapes materialize as the stock disappears

LOWELL CONVERSE

Whenever the Ohio Valley Woodturners Guild runs its semi-annual contests, the competitive spirit of the 130 OVWG members produces a flood of exceptional and unique entries. Past contests have included turnings made from 2-x-2-x-18-in. walnut, anything egg-shaped, any kind of box, and anything under 2 in. Last year in the under 2-in. contest, I entered the small tulipwood lidded "pot" shown at right .

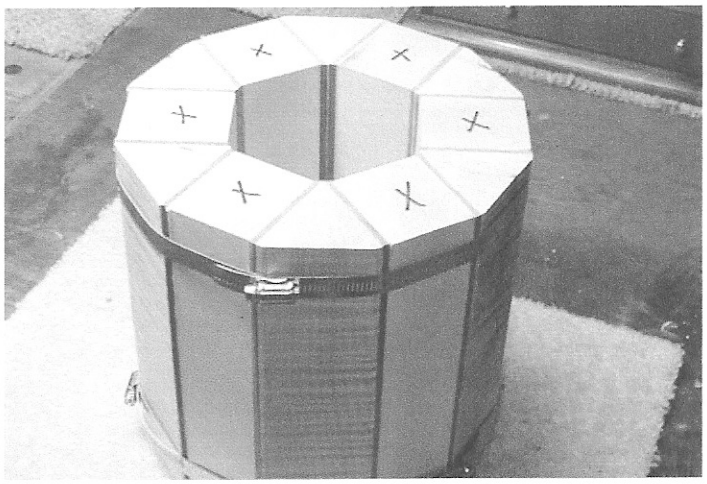
Author's tulipwood lidded pot

This piece was made by a process which probably has been used before, but which I have not seen anywhere in the literature. It's a method which I have dubbed the "lost wood process."

Lost wood is a lamination process with a twist. You not only dispose of all the shavings, but you also throw away half, more or less, of the turning before final finishing.

Inspiration for the process came from an OVWG demonstration by Michael Hosaluk. After seeing Michael make one of his well-known fish by removing a section from a basic hollow form, I wondered if I couldn't remove more than one section to get a four-or-six-or-more-sided object. Michael's method of bandsawing the center section out and then sanding each sawn side before gluing the sections back together would work, but if you had to glue up more than two pieces, it would be very difficult to keep the segments symmetrical.

I decided to cut everything apart before turning. If the pieces to be discarded are put into the assembly before its turned, and then removed afterwards, the remaining segments would have a built in symmetry, because of the way they were fit together originally and could be recombined much more easily. Thus the "lost wood" approach to making a multi-sided segmented piece.



Square scrap wood pieces marked with an X will be discarded after the cylinder is turned.

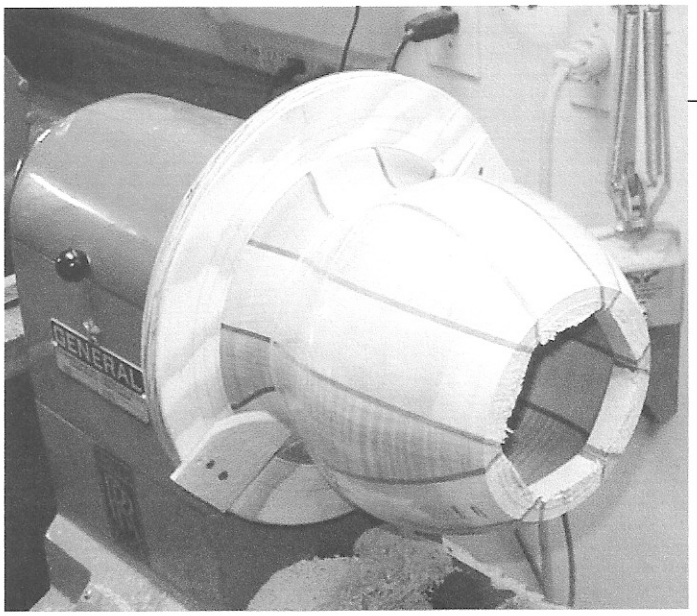
For this year's contest I made a vase; there were two categories: under 8-in. and over 8-in. Since I was fortunate enough to win last year with a little pot, I decided to try the process on a larger piece.

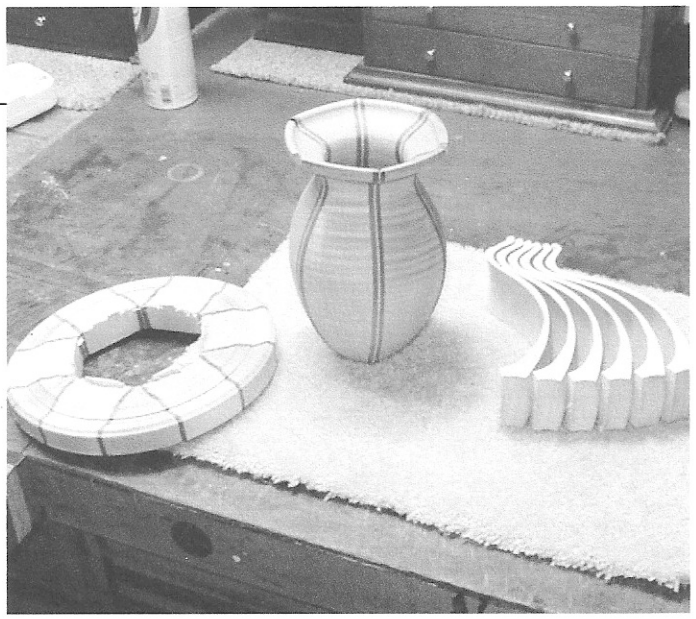
To make an 8-in. high vase with a nominal 4 $^{1}/_{2}$-in. diameter, I started with the configuration, shown below left. The six pieces with the X's are discarded after turning; they are 2 $^{1}/_{2}$-x-2-x-9-in. and for this project were from basswood, although any scrap wood will work. The other six triangular pieces, which will become the vase, are 2 $^{1}/_{4}$-in. curly maple ripped at 30° (for a 60 ° corner) and then laminated on each of two sides with $^{1}/_{8}$-in. thick walnut and a piece of birch veneer. The walnut and birch offer contrast, but not surprisingly make the project more difficult. Without those pieces, a little disk sanding of the edges makes reassembly easier. With them, any sanding would destroy the symmetry.

It is important that the inside "point" of each triangular segment be identical, as when these are assembled with the rectangular pieces they define a circumference for centering the large piece on the faceplate. It is well worthwhile to preassemble the triangular segments dry to assure a good fit. Each segment should be numbered in a place the number will remain intact throughout the process. This is important for final assembly.

The trick to removing the lost wood is to assemble the pieces shown in the photo using double-sided tape between the rectangular and the triangular pieces. Where the segments come together on the inside and on the bottom must match up as accurately as possible. This relatively large segmented piece is then very carefully centered and mounted on a faceplate. I used a $^{3}/_{4}$-in. plywood faceplate which would also be used as a jam chuck for reversing the piece to turn the bottom.

During rough turning, although the double-sided tape might be enough, two hose clamps were used



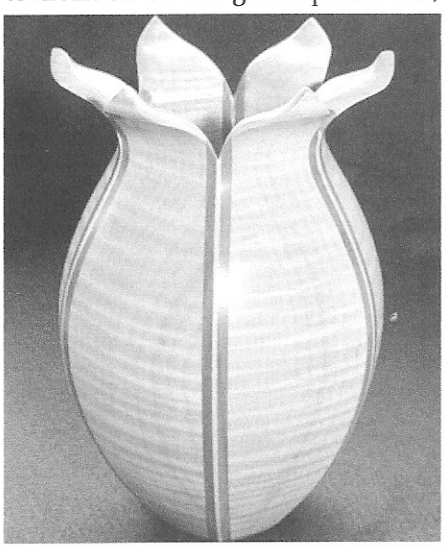


Assembly is jam fit onto a plywood chuck, left, for reverse turning. At right, the new assembly, the shaped components comprising the lost wood and a scrap piece from the bottom..

to make sure nothing came apart. Once the rough outside profile was finished, moving the hose clamps as required, the clamps were removed and fiberglass reinforced tape or shrink wrap was used as safety reinforcement. The final outside profile was then completed. It is very helpful during this process to have a drawing of the vase profile for reference as the turned piece can be a bit deceiving. After completing the outside profile, turn the inside to the desired thickness, in this case $^1/_4$-in. One nice thing is there is plenty of room to get at the inside; most of this piece was done with a $^1/_2$-in. spindle gouge. Now finish sand the outside and inside; the inside of the vase will have the same quality finish as the outside. On this vase I used thinned lacquer as sanding sealer and sanded to 600-grit.

The piece can now be parted off and reversed into a jam chuck made from the plywood faceplate. It can be clamped as shown above left. Hindsight tells me screws through the lost wood would work as well. Once the bottom is turned, remove the piece and carefully pull apart the double-sided tape joints. If all went well the six segments should fit together nicely. What you will then have will be the scrap piece from the bottom, an almost finished vase, and the lost wood shown above right. The practice assembly shown is held together by the remaining double-sided tape.

Before gluing the six segments together, I carved the top of each segment in the manner shown on the finished piece and also finished the inside of each segment, in this case by polishing the wood. Next, glue two sets of two adjoining segments together. Here's how Michael Hosaluk does it: some yellow glue on each edge, rub them together to assure a uniform joint, then hold them together tightly till you're comfortable the joint is good (1-3 minutes.) When this joint is cured, add the third segment to each of the two pieces (watch the numbers!) and let dry. Make sure to clean off all the glue squeeze-out, especially on the inside. When dry the two 3 segment sides can be joined the same way, although a little clamping force may be helpful here. Small discontinuities in the joints of the finished piece can be cleaned up with sand paper before final finishing. (Note: If made without the accent wood, the two sides can be sanded on a disk sander to get a perfect glue joint.) The outside of this vase was finished the same as the inside with thinned lacquer sanding sealer, hand sanded to 600 grit and polished.



For this vase, a final detail. If accent pieces are used, there will be a small six-sided hole in the bottom of the vase. A small turned plug for both the outside and inside to fill this hole adds a finished touch.

The vase , shown at left, turned out to be 8 $^1/_8$-in. tall, and it indeed won in the over 8-in. category. The competition is fierce, and even if this little vase hadn't beat out any of the bigger ones, it was still a lot of fun, and quite a challenge to make.

Lowell Converse is from Beavercreek, Ohio (outside of Dayton). He is retired from the US Air Force and currently represents an aircraft engine manufacturer. He has been turning seriously a little over two years. Some of his work can be found at the Village Artisans in Yellow Springs, Ohio.