

Turn a Burl Bowl

with David Lancaster

Text and photos by Ken Keoughan

Photo: David Higgins

“David Lancaster turns a thousand bowls a year and sells them all.”

—from *American Woodturner*
(December 1995)

Ten years has passed since that statement appeared on these pages. David still turns a thousand bowls a year—sometimes up to 1,200—but there is a significant difference.

Today, David uses less brute strength and less willful force. Smaller gouges with shorter handles have replaced heavy,

long-handled gouges. There is more finesse. Consistently well-made bowls have yielded to more refined forms made with gentler cuts. Sharp details and a mature well-founded elegance have evolved over the years.

Read on to learn how you can turn a 16"-diameter bowl using David's techniques.

Tools

For this project, you'll need:

- 1/2" and 3/8" Irish-grind bowl gouges
- 1/2" x 1/8" diamond-shaped shear scraper
- 1/2" shallow-flute spindle gouge ground on a bias

- 4" face plate
- vacuum chuck
- bowl-coring system
- four-jaw chuck
- 10" drum chuck

For his bowls, David likes the leverage and mobility in tight areas that curved tools rests and short-handle Hosaluk-style gouges give him.

Prepare the blank

First, select a burl

For this project, David chose from three or four burls. The most promising of these was an 18" rock maple burl with little distortion from bark inclusions and manageable spalting.

Since David's bowls usually a functional, they can't have bark inclusions that destroy their integrity as vessels. And they must be burred deeply enough to prevent an interior that is mostly tree trunk.

Mark the shape

Scribe an 18" diameter circle to define the outside diameter of the bowl.

Rough cuts

Carefully chainsaw the circumstance into a reasonably balanced bowl blank.

David uses a 16" electric chainsaw for this step, which avoids fumes from gas-powered saws inside his shop.

Next, attach a 4" face plate to the face of the burl using an impact driver and four 1 1/4" #10 McFeely square drive screws. Since this burl is valuable, he uses the small face plate to maximize the area where he will core two additional bowls.



Rough-turn the outside

Rough-turn the outside with a 1/2" Irish grind gouge. The curved tool rest shown *below* enables him to be close to the workpiece and eliminates the need for the leverage that long tool handles provide.

Establish the rough shape by a series of "steps" made with bevel-rubbing plunge cuts with the flute orientation at about 10 o'clock.



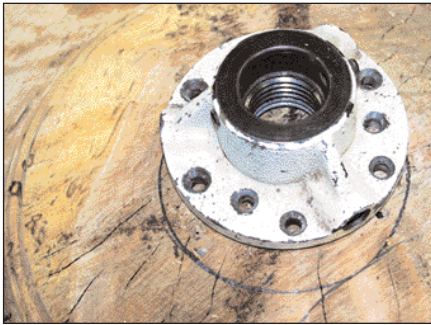
The tailstock is in place throughout the outside turning process, thus the small face plate acts as a strong spur drive.

As the roughing process proceeds, a bark inclusion becomes evident as shown *below*.

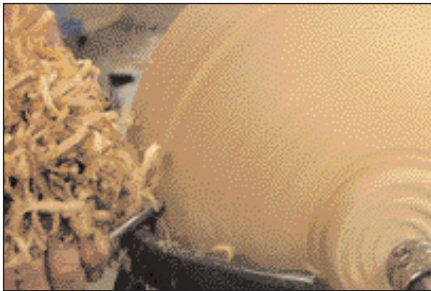


Continued

A careful assessment reveals that moving the face plate 1/2" away from the bark inclusion will allow David to remove it with little affect on the final diameter.



As the piece turns, the high side hammers on the gouge. David recommends holding the gouge parallel to the floor, thus transferring the hammer force straight into the tool rest.



Working around the bark inclusion altered the center point of the base of the bowl. Be sure to re-mark the tailstock center on the face of the burl before beginning the coring process.

To refine the shape, David uses a variety pulling and pushing cuts, but always with the bevel rubbing. David follows this straight-forward design plan:

- establish the rim
- when satisfied with the rim, establish the foot
- when satisfied with the foot, connect the foot and the rim with a full smooth, harmonious curve.

Shape the rim

To create a rounded rim, cut away the material underneath the rim. This is a nice nuance that frames the beads you will turn between the rim and the body of the bowl. Refine the rim and the beads with a small diamond-shaped shear scraper. In skilled hands, this tool will roll a bead faster than you can say Richard Raffan. These beads provide an elegant detail on a large bowl.



Next, sand the beads and rim. David uses 3M Radial Bristle Discs in grits from 120 to 240. Sanding with these discs requires reversing the lathe direction to capitalize on the curve engineered into the discs.



Core the bowl

The foot has been established in the form of a 4" tenon made to enable you to transfer the bowl to a four-jaw chuck. This eliminates using a face plate and the accompanying danger of screw holes popping through the bottom or into the foot.

Before you begin coring, be prepared to lubricate the burl with water, which will simply the coring process—especially with a dry, wild grain burl. The watering process does not require anything more sophisticated than a water bottle to squirt water into the coring cut. This lubricates and cools while washing the chips out of the cut as shown *below*.



After coring the blank, remount the bowl onto a 10" drum chuck using vacuum power. If you shifted the bowl to remove a bark inclusion (as David did in photo opposite top left), remember to align the bowl on the drum chuck with the new tailstock mark.

Now, cut away the tenon and make the final cuts to create the foot of the bowl.



Drill for depth

After finishing the foot and before turning the inside of the bowl, take the cored blank to your drill press, which is set to drill to the depth that allows you to maintain an appropriate wall thickness at the bottom of the bowl—in this case $\frac{3}{8}$ ". This $\frac{1}{2}$ "-diameter hole does not need to be perfectly centered—it's simply a depth stop.



Turn the inside

Turning the inside requires a 10" drum chuck and vacuum system. With partial vacuum pressure to support the bowl, align the blank with a dead-blow mallet. Check the distance between the rim and the tool rest while rotating the workpiece by hand.



Turn the inside of the bowl with a $\frac{3}{8}$ " Irish grind gouge and a curved tool rest. Make your final cuts with a $\frac{1}{2}$ " shallow-flute spindle gouge, ground on a bias, to shape it for the final cuts. David recommends gentle cuts, gentle curves, and cutting with the grain from the outside to the center.

Remove stock to the depth of the $\frac{1}{2}$ " hole drilled in the blank.



The secret to the beauty of David's burl bowls is the exquisitely fine finishing cuts that he makes both outside and inside the bowl.

Tear-out is non-existent; a light burnish is often present. And when you reach the point at which you turn a thousand bowls a year—and sell them all—you will make these kinds of cuts, too.

Sand and finish

Sand the outside of the bowl with a $\frac{3}{4}$ " soft foam backing pad chucked in a pneumatic random orbit sander. David begins with 3M 220-grit purple paper and progresses to 320 grit. Then he switches to 3M Microfinishing Film for the final sanding.

The inside of the bowl requires a different technique to eliminate the tiny ripples that almost always appear. With the bowl held static on the lathe, use a 5" disc mounted on a $\frac{3}{4}$ " soft pad and chucked in an electric drill. If necessary, use 120-grit and 240-grit purple paper. Repeat final sanding with Microfinishing Film as described above.

Apply a food-grade finish. David applies tung oil to all his bowls.

After completing the 16" bowl, he turned 13"- and 10"-diameter bowls from the cored pieces. The set of three had exceptional grain throughout—perhaps the best he's ever seen turned from maple burl.

David Lancaster (Lancaster@pivot.net) of Weeks Mills, Maine, will be a featured demonstrator at the AAW symposium in Overland Park. Fellow Maine woodturner Ken Keoughan (kkeoughan@yahoo.com) is a frequent contributor to *American Woodturner*.