# Turning Bowls from Green Wood

## The material is a joy to work, and checking *can* be prevented

BY HOWARD LEWIN

**SIX REASONS FOR TURNING GREEN WOOD**

***1. Fresh logs are often free***

***2. There's a wide selection of species***

***3. Large blanks are easy to come by***

***4. It cuts fast with little dust***

***5. It's easy to turn thin walls and unconventional shapes***

***6. Final shape changes during drying***

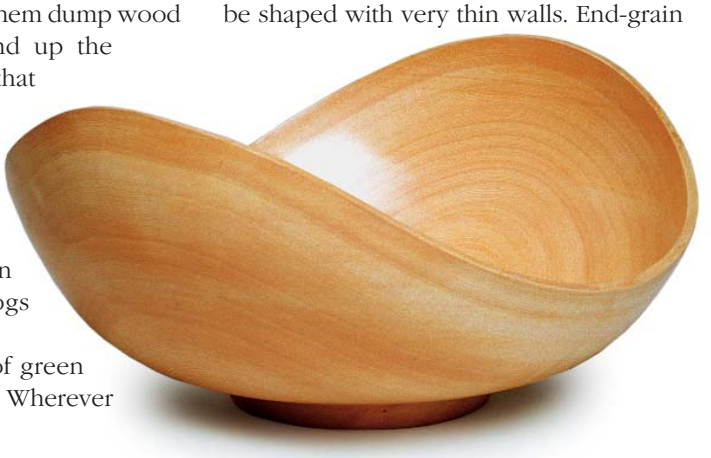
I've heard it too many times, even from expert wood turners: Don't bother with green wood. Sure, it's wonderful to turn, but the bowls always crack. Well, they're wrong. It is possible to turn and dry green bowls successfully, and you won't need any polyethylene glycol (PEG), complicated procedures or other hocus-pocus to do it. There are just a few techniques to be mastered and a couple of tricks to be learned. Soon your success rate will make green wood fun and worthwhile.

The lure of turning green wood has always been strong. I can think of at least six good reasons why you should try it. First, freshly downed logs are often free. This lets you experiment and grow as a turner without worrying about cost. I live in Los Angeles, where tree trimmers have to pay to dump their loads. I let them dump wood at my studio. They grind up the small branches and sell that as mulch. I keep the logs, freshly cut and delivered free. Even if you can't swing a deal like mine, you can probably meet your local tree trimmer on site and take some logs away. Less work for him.

Second, the selection of green wood is almost unlimited. Wherever you live, a variety of species is available to turners who keep their eyes and ears open. Third, you're not limited in size to what's in the lumberyard. Ask your local lumber salesman for a 12-in. by 12-in. by 12-in. walnut bowl blank. You'll get a blank look.

Fourth, turning green wood is more pleasant. New wood is softer, making the cutting easier and faster. Tools stay cooler, keeping them sharper longer. Green wood produces less dust and creates larger shavings, which are easier to pick up. Green bowls can be wet-sanded, which creates no dust at all. And green wood is easier to cut with chainsaws and bandsaws. Shall I go on?

A fifth reason to turn green stock is that it allows total freedom. Because the wood is soft and cuts easily, bowls and vessels can be shaped with very thin walls. End-grain



vessel shapes become not only possible but also easy. One of my favorite shapes includes the bark and the center of the log, with heartwood bull's-eyes on the sides. These forms are very difficult to achieve with dry wood. Also, when the wood dries, the pith sometimes bulges out in an interesting way. And that's the sixth benefit: The final shape of the vessel is often undetermined. Once the piece has been set aside to dry, mystical changes take place. I have had bowls almost close and others twist like a pretzel, all without cracking. And there are tricks for manipulating the final shape in strange ways.

## Getting started

Now you know why you should try green wood, but you need to understand how. It starts with a chainsaw; I recommend having two. Use a gas-powered one for felling and cutting up trees, and get an electric one for use in your shop. There's no exhaust, and it's easier on your ears (and your neighbors') on a leisurely Sunday morning.

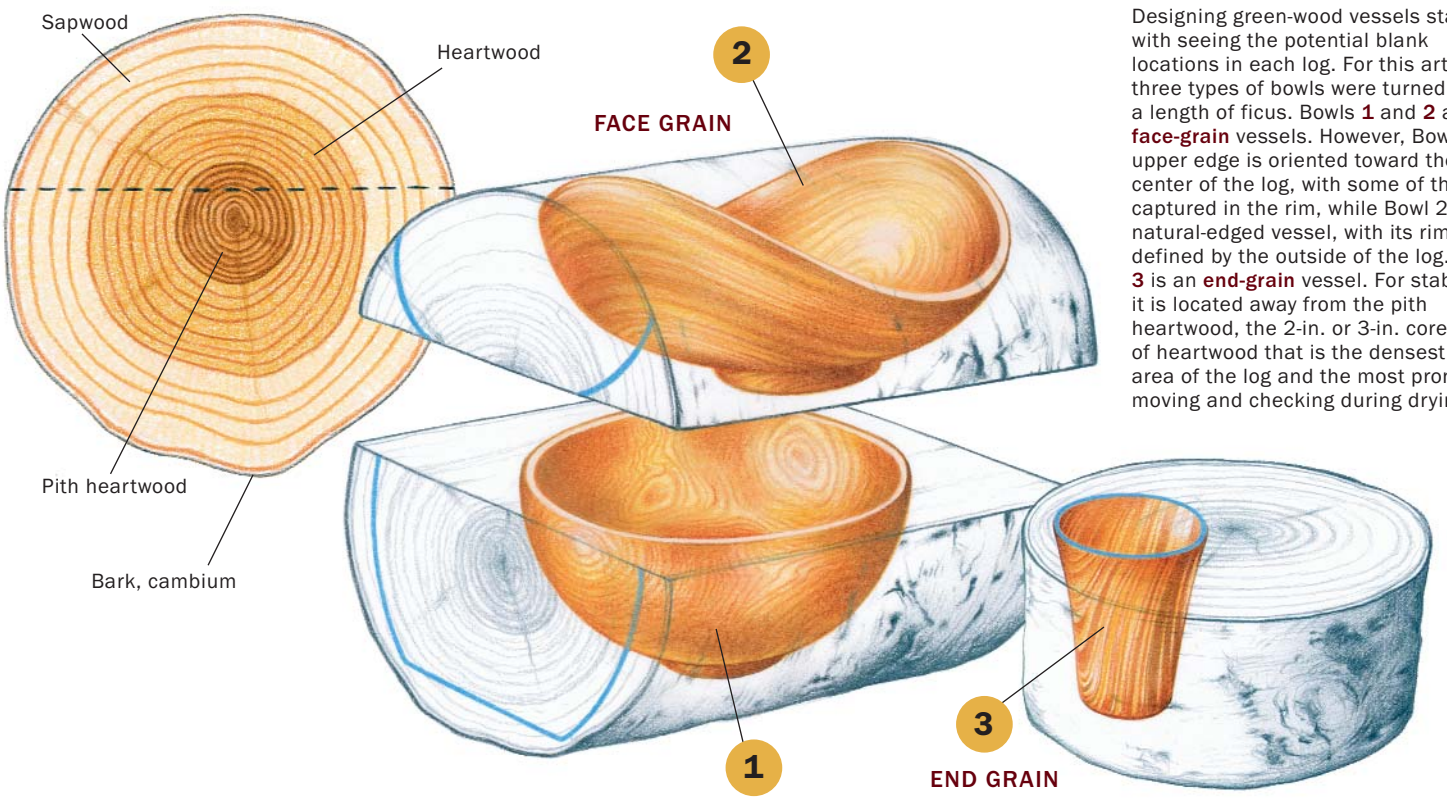
Watch out for nails in wood that was in a yard or near a road, and cut logs about 6 in. longer than you need, to allow for checking. Most beginners run into trouble cutting the log down the middle. This is an important cut in preparing green wood for turning, because many bowl forms are made from log halves or quarters. Also, it lets you get at the center of the log if you plan to remove the middle 2 in. or 3 in., which contains the pith and the densest heartwood. This pith heartwood, as I call it, is the area most likely to split, so its removal will help prevent checking if a blank must be stored for a while.

When cutting a log lengthwise, the temptation is to set it on end and cut down. This is slow going because you are cutting into end grain the entire length of the log. Lay down the log and cut parallel to its length. You'll get longer shavings and a faster cut. To prevent dangerous kickback, never tilt the chainsaw bar forward while its tip is engaged in the wood. Clear the long shavings often so they don't bind the chain. And be sure to prop the log so that it won't roll. When you're almost through the log, roll it over or set it on end to finish the cut.

Don't cut the wood into blanks until you need them. Work from one end of the log, and keep the ends of the log sealed with wax or paint. Don't expect a log to stay check-free for more than a few months, depending on local heat and humidity.

Use a bandsaw to cut log halves into blanks. Don't overload your machine. If you can afford it, you'll need a bandsaw that can cut about 12 in. high with a 20-in. throat and a 2-hp motor. Most of what you turn will fit into this dimensional range. Use a skip-tooth blade with about three or four teeth per inch. A hook-tooth blade

### LOCATING BOWL BLANKS WITHIN THE LOG

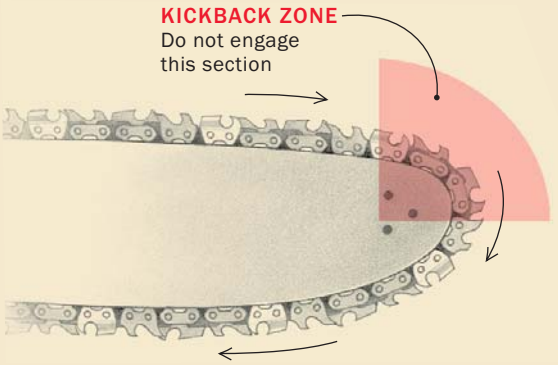



Designing green-wood vessels starts with seeing the potential blank locations in each log. For this article three types of bowls were turned from a length of ficus. Bowls **1** and **2** are **face-grain** vessels. However, Bowl 1's upper edge is oriented toward the center of the log, with some of the pith captured in the rim, while Bowl 2 is a natural-edged vessel, with its rim defined by the outside of the log. Bowl **3** is an **end-grain** vessel. For stability, it is located away from the pith heartwood, the 2-in. or 3-in. core of heartwood that is the densest area of the log and the most prone to moving and checking during drying.

Drawings: Michael Gellatly

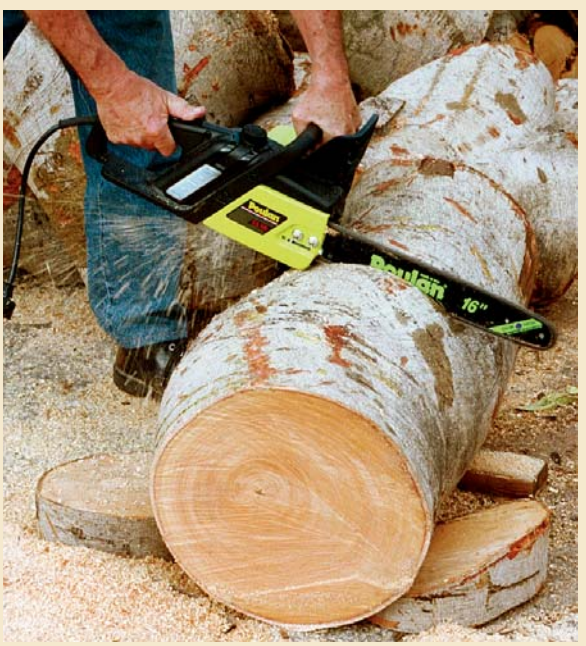
## CHAINSAW RELEASES BLANKS FROM LOGS

**The first step in turning a green bowl is chainsawing. A 16-in. bar is big enough for most work yet easy to handle. The author uses a gas-powered chainsaw outdoors and an electric one inside. As always when chainsawing, beware of kickback when the tip of the bar is buried in the wood.**




### CROSSCUTTING

***The first slice gets rid of small checks at the end of the log.*** *Any cracks must be eliminated, or they will grow later during drying.*




***The next crosscut establishes the length of the blank.*** *Be sure to raise the log off the ground slightly to protect the saw teeth, and wedge it to prevent rolling.*

***Use a marker to plan your bowl-blank locations.*** *This ficus log will yield two face-grain bowls, one with the pith heartwood near its rim, and the other with natural (bark) edges. Ficus, known commonly as a narrow tree used for interior decoration, grows quite large in warm climates.*

### CUTTING LENGTHWISE

***Lay the log on its side.*** *Placing the log on its end to make the cut (inset) means you'll be cutting into end grain the entire way. The sawdust will be fine, and the going slow. Cutting the log on its side will be much easier. Clear the long shavings often by lifting the saw out of the cut. When the saw's tip is buried in the wood, never tilt the bar forward or dangerous kickback will result.*

will not shed wet sawdust well. I use an old tablesaw blade to mark an outline on the blank. Then I cut away as much of the unnecessary wood as possible.

**Choosing blanks—**A word here on locating bowl blanks in the log. With face-grain bowls, there is going to be some distortion during the drying process no matter what you do. However, the farther away from the pith heartwood, the less a face-grain bowl will move. With end-grain bowls and vase forms, there's very little movement, especially in wood away from the center. Personally, I like to include the pith heartwood in the bowl. The subsequent movement adds mystery to the final piece. I often mount the pith-heartwood side on the faceplate and turn natural-edged bowls so that the heartwood and its color are in the bottom and wall of the bowl.

Seal the end grain of green turning blanks and keep them out of the sun. But don't put them in plastic bags. They will begin to rot, and you'll never get that odor out of the wood. If you want spalting, set one end of the log on soil and wait a few months. Leave it there too long, and you'll get complete dry rot.

**Mounting techniques—**Three- and four-jaw chucks and expansion chucks tend to crush green wood. A screw chuck (simply a heavy wood screw protruding from a flat plate) is a viable alternative, but the bottom of the blank must be very flat to snug up against the plate. Also, green wood provides weaker threads than dry wood for this type of chuck. However, a bit of cyanoacrylate glue in the screw hole will add some holding power.

The best and safest mounting device is the faceplate. For most bowls, a 3-in. plate is sufficient. There should be at least six screw holes, large enough for #10 screws. I use 1-in. or 1¼-in. drywall screws with coarse threads for most bowls; they work great. Generally, use longer screws for end grain, because the threads don't grab as well there. And it's a good idea to flatten the blank's mounting surface.

A few general tips on turning bowls: A variable-speed lathe is great because it lets you gradually adjust the speed right up to the point before the lathe begins to vibrate. Adjust the speed and the tool rest often, keeping the leverage point as close to the work as possible. An excellent safety pre-



Photos: Asa Christiana

## BANDSAWING THE BLANKS

**After chainsawing the log, the bandsaw is your next stop. Remove as much waste as possible while keeping the blank somewhat balanced. A large bandsaw and a massive lathe are nice to have, but smaller equipment just means smaller vessels.**



***Bowl 1 comes from the larger face-grain blank.*** *First, a flat is cut for mounting the faceplate. Then the author uses a sawblade to trace the outline of the bowl onto the blank, and the waste is cut away.*

***The sawblade also serves as a template for Bowl 2, a natural-edged, face-grain vessel.*** *Again a marker transfers the bowl shape to the bark, and the waste is cut away.*

***The blank for Bowl 3, an end-grain vessel, is cut from another chunk of ficus.*** *Trim away as much waste as possible.*

caution is to keep the lathe's drive belts loose enough that they will slip when the gouge gets caught in the work. This has prevented many disasters in my shop.

**Turning the outside—**Slide the tailstock and live center up against the blank for added holding power while roughing and shaping the outside of the bowl. Use long, hefty bowl gouges as opposed to scrapers, which will cause tearout. Examine the wood carefully for any checks or cracking. All checks must be completely turned out, or they will grow later.

When cutting on the inside or outside, choose the direction of your cut carefully. Avoid cutting against the grain, which will cause tearout and grab the tool.

### Thin, even wall is the key

Once the outside of the bowl has been shaped, slide the tailstock away and begin the hollowing process. Turn the bowl to a uniform wall thickness of ¼ in. to ½ in.—thinnest for harder woods, which move more. To gauge wall thickness as you work, check the light passing through the wall of the bowl and listen to the tool resonate on the wood. The uniform thickness of the wall and bottom is one of the keys to success with green wood. As the bowl dries, it will do so evenly. Another key element is the thin wall. With most of the mass gone, the wood can relieve stress by moving freely rather than cracking. Whatever the thickness, however, it must be consistent throughout the vessel.

Once you begin hollowing, speed is of the essence. The bowl will start changing shape as it gets thinner and begins to shed water. There is no time for a coffee break at this stage. With practice you will be able to turn a 12-in. bowl in 30 minutes. Start by plunging about 1 in. to 1½ in. into the center of the bowl and moving outward to the wall until ¼ in. is left. Repeat this process, leaving ¼ in. at the wall each time.

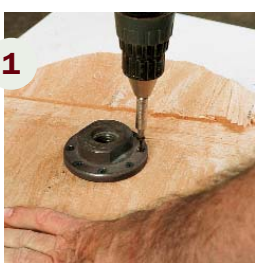
This method leaves strength and rigidity at the base of the thin wall you are cutting. Do not hollow out the bowl and then try to retrace your steps and thin out the wall. It will be too soft and flexible for cutting.

There is an important difference in technique for hollowing end-grain and face-

# TURNING THE BOWLS: FACE GRAIN VS. END GRAIN

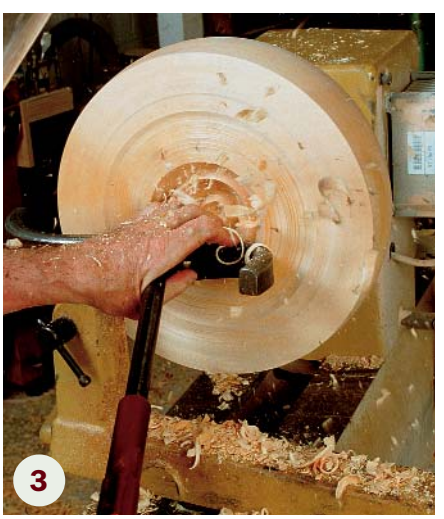
**Today's long, heavy, deep-fluted bowl gouges slice easily through green wood, with thick shavings streaming off the blank. The shearing action leaves bark edges intact and works well on interrupted cuts, such as when the blank is being roughed. A note of caution for green wood: Work your way out to the thin wall and then leave that edge alone as you move deeper into the bowl. Returning to a thin edge turned previously is dangerous because it already will have started to dry and move.**

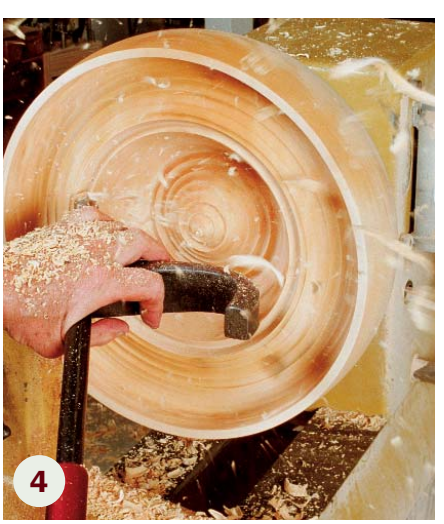
***Rough the outside with the tailstock and revolving center jammed into the workpiece for added support.*** *1. Use a faceplate to mount green wood on the lathe. Other*



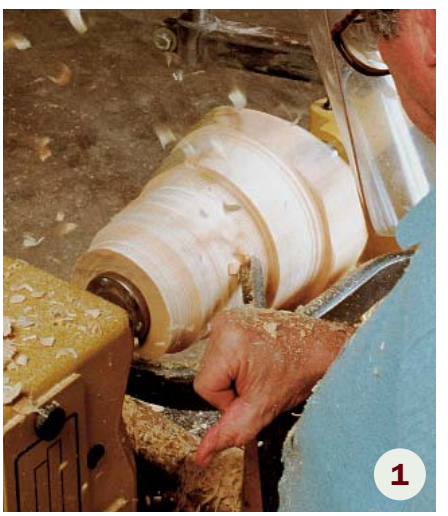

*mounting devices won't grab the soft, wet fibers as well. When turning, be careful to direct the cut with the grain, not against it; otherwise, the fibers will tear out and may catch the tool. 2. For the outside of face-grain bowls, as is the case here, the cuts are pushed from the center and bottom toward the outside and top of the bowl (here left to right). 3. For hollowing, the tailstock is pulled out of the way. After a small plunging cut is made at the center, each successive cut begins at the outside edge of the last cut and moves in toward the center. 4. Leave ¼ in. of wood at the wall, then begin the next series of cuts at the center again and work out to the wall, and so on.*

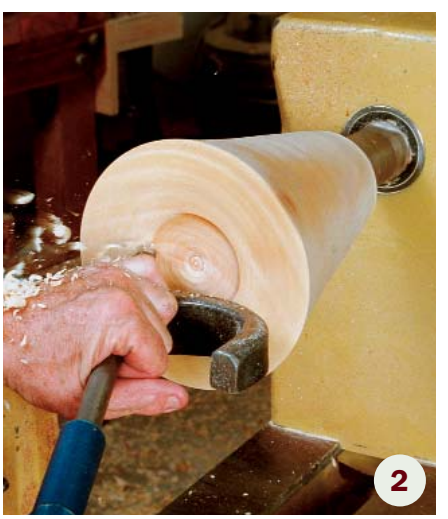
## FACE GRAIN

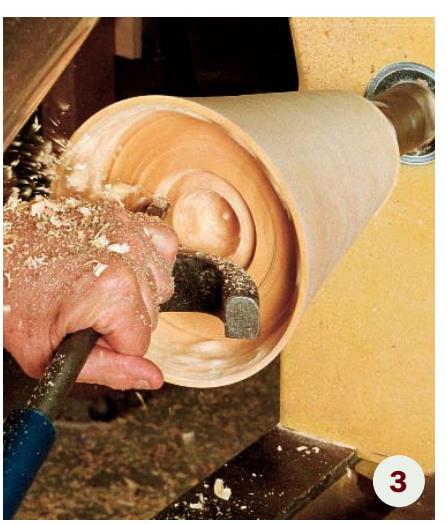



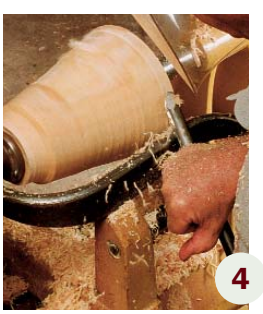

## END GRAIN




***Cuts are made in the opposite direction for end-grain vessels.*** *1. Outside roughing cuts move from the rim of the vessel toward the bottom, here from right to left. 2. Then the tailstock is pulled away, the tool rest is reoriented, and hollowing cuts are plunged in at the center and pulled back toward the wall. 3. When ¼ in. of wood is left at the wall, the next cut begins at the center again, and so on. 4. With today's*




*sharper, longer gouges, scrapers are not needed for the final cut on any surfaces. A planing cut, made with the tool's bevel riding along the surface just cut and acting as a lever point, leaves an even surface for sanding.*

grain bowls. For an end-grain bowl, after plunging into the center, pull the cut toward you and away from the center. This way, the fibers you are cutting are supported by the fibers behind them, and you are not cutting directly into the grain. For a face-grain bowl, do the opposite. After plunging into the center, start at the outside of the plunged hole and cut away from yourself, toward the center of the bowl.

When nearing the bottom of the bowl, leave only the overall bowl thickness (usually ¼ in.) between the inside surface and the tips of the screws used to mount the bowl. Later, when hollowing the bottom of the bowl, go just far enough to turn out the screw holes, and the bottom thickness will be right.

After turning the bowl, allow the surface to air-dry before sanding. Leaving the bowl on the faceplate for a day is usually sufficient, depending on conditions, but a few hours might do in hot, dry weather. If you power-sand, as I do, put the lathe on a slow speed and don't apply too much pressure in one area. Any heat buildup will cause the bowl to crack. Wet-sanding is also fine, especially if you don't have time to air-dry the bowl's surface.

I like to leave a foot on the bottom of my vessels. To finish this type of bowl, jam- or reverse-turn the screw holes out of the bottom and hollow out the foot, continuing the uniform wall thickness into the foot as shown at right. For a round bottom, you just turn off the bowl with a parting tool. Don't power-sand the bottom; it is prone to cracking and should be left until the bowl is completely dry.

### The trick to drying

Place the wet bowl into three brown supermarket bags, one inside the other, and wrap each tightly. If your area of the country is drier or more humid, three bags may be too many or too few. I've found Los Angeles to be a three-bag town (there's a joke there somewhere). Do not use plastic bags. Check the bags periodically. When the bags are bone-dry, the bowl is dry. That's it. The bags slow the drying process, allowing moisture to leave the bowl slowly. This process can take anywhere from one or two days to three weeks, depending on location, season and wall thickness. If you have chosen your bowl blanks for movement, as I often do, mysterious events take place inside these brown bags.

## FINISHING UP

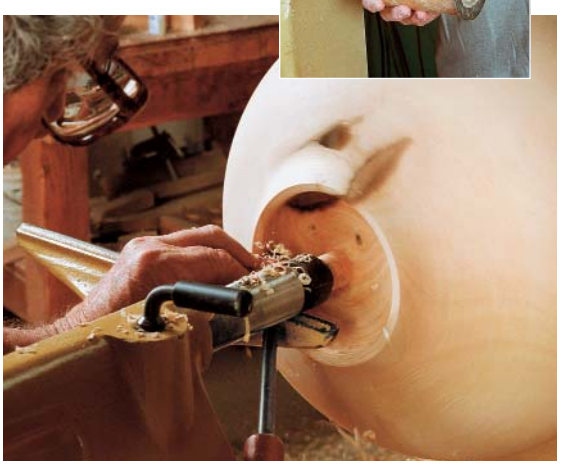
**The bowl is sanded while still on the faceplate, then the faceplate is removed, and the bowl is reversed and mounted on a jam chuck for turning the foot. Controlled drying comes next—then a final light sanding before finishing.**

**SANDING**

*Give the bowl about a day to air-dry before sanding it. If you choose power-sanding, don't linger too long in one area or the bowl will heat up and crack in that spot.*

**REVERSE-TURNING**

*A jam chuck is screwed on for reversing the mounting position and turning the foot of the bowl. A hardwood block with a rubber foot attached makes an effective jam chuck. Turn the foot until the screw holes disappear. At that point, the bottom of the bowl and the sides of the foot should be the same thickness as the wall. This uniform thickness will allow the bowl to relieve stresses as it dries, preventing cracks.*



Another drying technique is to nuke the bowl in a microwave oven. However, a microwave can't vent moisture well, so you will have to make many trips to the oven, giving the bowl one-minute bursts on the high setting, and taking it out each time to let off steam. I can accomplish the same thing with paper bags without any of the effort. The upside to microwave heating, though, is that you can bend the hot, thin walls toward each other, for example, like a pitcher. You will have fun explaining how you turned the bowl this way.

### Here's the bottom line

Cut your blank out of a green log, the wetter the better. Turn the whole bowl in one session, keeping the wall thin and uniform. Sand lightly. Allow the bowl to dry in paper bags, sand lightly again, if necessary, and apply a finish. That's it. The true test is to go out to your shop and try it. The wood is free, and the design possibilities are endless. □

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