



Bead-and-Cove Sticks—Effective Practice Makes Perfect



By Mike Peace

Like any motor skill—walking, riding a bike, playing an instrument—turning requires practice to develop skills and muscle memory. Repetition develops tool control. Practice leads to experience and lets us recognize when we need to sharpen a tool for a better cut. It takes practice to recognize the difference between a scraping cut and a slicing cut.

I see so many new turners who want to start turning bowls immediately. But many foundational skills are best learned through spindle turning. Tool control, riding (or perhaps more appropriately floating) the bevel, the importance of sharp tools, and the understanding of cutting with the grain will make all future turning projects, including bowl turning, easier and safer. Learning these skills on small, easily acquired wood blanks for spindles is more cost-effective than working with bowl blanks.

After you have mastered the three basic cuts in woodturning, bead (convex cut), cove (concave cut) and the flat or filet (straight cut), you will easily transfer these skills to turning a bowl!

Spindle blanks

Start with spindle blanks about 1-1/2" (4cm-) square and 10" (25cm) long (1). You can use most any wood available to you, green or dry, preferably with relatively straight grain and free of knots and figure. I prefer a relatively soft wood like pine or poplar. Construction-grade pine works well and may be available to you as the common 2" x 4" in your local home center, depending on your region of the country. Eight quarter poplar from a lumber yard may be another relatively inexpensive alternative. Rip your lumber to size with a table saw, hand saw, or bandsaw.



1. Prepare a stack of 1-1/2" x 10" practice blanks from pine or poplar.



TECHNIQUE: Bead-and-cove stick



2. Use a four-prong drive center (left) in the headstock and live center (right) in the tailstock.



3. Center finding jigs are inexpensive and quickly locate mounting points.



4. An awl or center punch creates a registration mark to ensure the lathe centers seat in the correct location.

Turn between centers

Mount a blank on the lathe between centers using a drive center and a live center. Mounting between centers provides a secure hold and is less complicated than mounting a bowl blank. New lathes typically come with a four-prong drive center and a live center (2). Use a pencil to mark the center on each end of the blank using a center finder or by drawing lines from corner-to-corner (3). Mark the center with an awl or a spring-loaded center punch (4).

Stand the blank on its end on a solid surface and use a mallet to seat the drive center, registering the prongs in the endgrain (5). Do not use a metal hammer or you will damage your Morse taper and possibly your lathe spindle. Hammering the blank onto the drive while the spindle is mounted in the headstock risks damaging the spindle bearings, especially on mini and midi lathes.

With the drive center's location established, mount the practice blank between centers,



5. Seat the drive center prongs with a wood, plastic, or hard rubber mallet. The prongs need only dent the endgrain—in soft wood, this requires little effort.



6. Mount the stock on the lathe, capturing the blank with snug pressure from the tailstock quill. Resist the temptation to over-tightening the quill.

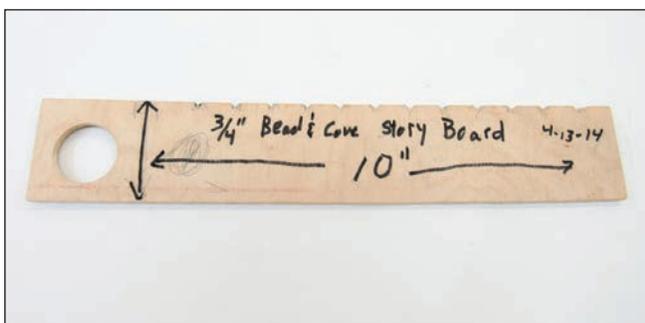
bringing the tailstock up and snugging the live center against the end of the blank with the quill (6).

Adjust your toolrest so the gap will be no more than about 1/4" (6mm) and at a height that will put the cutting edge of your gouge at or slightly above center. The end of the toolrest should extend at least 3/4" (19mm) beyond the end

TECHNIQUE: Bead-and-cove stick



7, 8. Use a spindle roughing gouge to knock off the corners of the blank and bring it to round. Stop the lathe and move the toolrest as necessary. When the back of the gouge can ride on the revolving blank without bouncing, the blank will be trued and round.



9, 10. A storyboard introduces speed and consistency to the repetitive task of marking features. Rigid cardboard will do, but thin plywood will better resist wear.

of the blank to prevent your cutting tool from sliding off the end of the rest during a cut.

Rough the blank

A lathe speed in the range of 1,500 – 1,800 rpm is about right for roughing a cylinder out of a blank of this size. If your lathe vibrates excessively, reduce the speed until the lathe runs smoothly. Use a spindle roughing gouge (SRG) to round the blank (**7**). You can round small cylinders with a skew, a bowl gouge, or a spindle gouge, but an SRG is the most efficient tool for this task. You can test for roundness by touching the back of the tool against the spinning wood. The tool will bounce if there are still flat surfaces on the blank, and will ride smoothly when the blank is round (**8**).

Use a storyboard

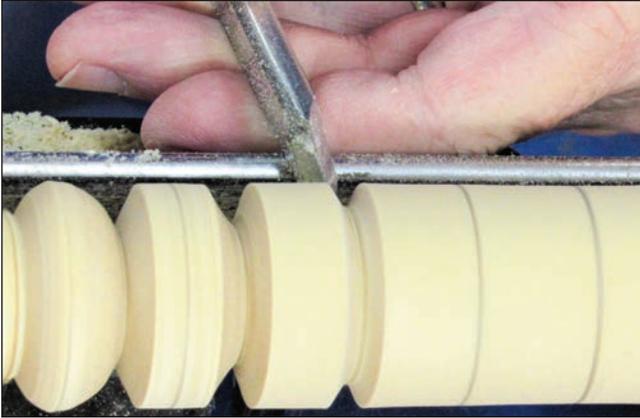
You are going to turn a lot of these bead-and-

cove sticks, so I recommend a storyboard (**9**). The storyboard should have notches at 3/4" intervals. This will make consistently marking your blanks for 3/4"-wide beads fast and easy (**10**). Once you have the blank turned round, use a pencil and the storyboard to mark off a series of 3/4" beads.

Using a skew, make a vee cut at each pencil mark to locate the side of each bead. Use the long point, starting the cut with the skew in a vertical position. Then take small alternating cuts to enlarge the vee on each side (**11**). Start the cut and move the handle away from the cut ever-so-slightly so the bevel will follow the vee. Do not try and cut more than 1/16" (2mm) at a time or you risk stalling your cut. Make the finished vees about 3/8"- (10mm-) deep. Now take your pencil and mark the center between the vees; this will be the bead tops and the lines will help you maintain the symmetry of the bead.



TECHNIQUE: Bead-and-cove stick



11. Cut a vee groove on each line to about 1/4" – 3/8" deep using a skew. Alternatively, you could mark with a parting tool.

Turning beads

A 3/8" spindle gouge works best for turning these beads, but a 1/2" gouge will work. A fingernail profile will make help you reach into the narrow space between beads. Avoid the flatter profile spindle gouges—typically called Continental gouges—that come with some woodturning sets; those gouges make this exercise difficult.

You are learning cuts without the pressure of completing a project, so enjoy the activity! With the blank round, and the lathe off, adjust the toolrest to reduce the gap with the wood to about 1/4". With the blank trued and spinning smoothly, increasing the lathe speed to about 2,400 rpm will produce a cleaner cut, but keep the speed lower if your comfort level lies below that threshold.

A bead of this size should not be attempted in a single cut. Instead, cut a series of increasingly wider convex curves until your last cut starts at the center peak and ends in the valley. Start cutting at the edge of the bead—adjacent to one of the vees you made in the earlier step—starting each cut progressively closer to the center with each successive cut.

Hold your spindle gouge with the tool horizontal, flute up, so that the tip of the gouge just contacts the top of the bead (**12**). As you push forward with the cut, you will gradually



12. Start shaping your bead by cutting near the bead edge with the bevel rubbing the wood.



13. The bead cut ends with the gouge on its side in the bottom of the vee and the handle at about a 45 degree angle to your body. This keeps the bevel in contact with the side of the bead all the way to its base.

lift, twist, and swing the handle. With deeper cuts, you will be swinging your handle through the arc toward the vee cut at an increasing rate, as the tip of the gouge gets closer to the bottom of the vee, ending with the flute facing away from the bead (**13**). If you are cutting the left side of a bead, the tool handle will start at 90 degrees to the lathe bed but finish at almost a 45 degree angle across your body.

Failure to keep the bevel on the curve by swinging the handle will result in flat sided beads. This is why a relatively short handle on a spindle gouge is desirable, as it will move across the front of your body. The cutting edge is not far off the toolrest, so you do not need much leverage. My spindle gouge handles vary in length from 7" to 10" (18cm – 25cm).

TECHNIQUE: Bead-and-cove stick

Coves

Use the SRG to flatten every other bead in preparation for turning coves. Presenting the SRG on its side offers a cutting edge that will easily create a flat surface (**14**). Use a pencil to mark a line about 1/8" in from each end of the flat to designate sides of the cove (**15**).

Switch to the spindle gouge and make starting cuts just inside the lines, widening the cove with successive cuts on each side. Think of a cove as an inverted bead. The tool presentation you used to end the cut on a bead is the same you will use to start your cut on a cove. Your tool will be parallel to the floor with the flute rolled over on its side pointing to the cove. The tool will be at about 45 degrees to the work at the start (**16**). Push into the cut and rotate the tool as it approaches the bottom of the cove. Take the cut with a scooping motion as you twist. Riding the bevel, lower the handle and push through the cut, ending in the center. The flute will always be facing the center of the bead (**17**). Repeat the cut from the other side.

Conclusion

Turn about twenty bead-and-cove sticks out of that 2" x 4" and you will develop the tool control and skills to confidently cut these features. Put a date on each spindle and toss it in a box. After a week, note your progress! For experienced turners who teach, try turning a bead-and-cove stick using your non-dominant hand. It will help you teach the nuances that you know but overlook! It can make you a better turning instructor, as well as a better turner.

Mike Peace is active in three woodturning chapters in the Atlanta area. He is a frequent demonstrator and regularly uploads woodturning educational videos to his YouTube channel, [Mike Peace Woodturning](#). Before retirement, Mike worked as a software project manager. After serving on active duty in the U.S. Army, he continued service in the reserves, retiring with the rank of Lieutenant Colonel. For more, visit [mikepeacewoodturning.com](#).



14. Presented on its side, the SRG quickly flattens beads in preparation for cutting coves.



15. Mark the edge of the coves about 1/8" in from the beads.



16. The cove cut starts with the gouge on its side, flute pointed towards the cove interior.



17. At the cove bottom, the flute points up.

□