

Basic Bowl Design

by Peter M. Smith

Recently, woodturning has been much concerned with the wondrous world of carved, pierced, and colored turnings, but with this article, I am recommending a return to the basics of bowl design. Bowls remain the most ubiquitous of turned objects. They are so useful for holding things, such as salads, fruits, peanuts, keys, and change, and when they are done well, they are lovely. But that's the trick—to make them well. They present many design challenges, and a refresher look at the elements of good bowl design is always timely.

Our touchstone is Richard Raffan's masterly *The Art of Turned Bowls*, a revision of his earlier and excellent *Turned-Bowl Design*. I have absorbed—inhaled—both these books and taken their lessons to heart. My intent here is to distill what I have learned about design (rather than technique) during the production of hundreds of bowls over the years, always with reference to Raffan.

MAIN PRINCIPLES

Look for two things in a good bowl: **lift** and **heft**. By lift, I mean the shape of the bowl and how well it stands out from its supporting surface. By heft, I mean the feel of the bowl when you pick it up.

- Lift is a combination of several visual elements: the general shape, flow of the profile, the footing, the rim and its thickness, the size of the opening, and the width in relation to height.

- Heft comes from the weight of the bowl and the distribution of that weight between walls and foot, the thickness and uniformity of the bowl walls, and the finish.

You will notice that an emphasis on grain or color is not a factor here, or rather, it is a minor factor. Raffan discounts the importance of the wood for a bowl (correctly, I believe), his argument being that wood color and grain fade over time, but lift and heft do not. I know spalted and burl bowls sell well and can be quite magnificent, but we need to see beyond the flash of the wood to the basic design. Over time—a long time perhaps (we want our bowls to last)—all woods look the same. Though marvelous wood may be visually impressive, it cannot tell heft; and this other half of the story can only be known by handling the bowl. Gallery art does not guarantee a satisfactory bowl.

SCORES

As a rule of thumb, I usually say that out of ten bowls that I make, one will be a keeper—that is, have the magic combination of elements that make it a showpiece. What this magic is remains elusive. One will be a dud that is fit for throwing away or cutting in half, and the remaining eight will be more or less acceptable. So let us use the scale from 1 to 10 as a measure of my assessment of a bowl's design. And remember, perfection is unattainable; it is the elusive and always beyond-reality ideal. This is what makes bowl turning so fascinating. You can attempt several repetitions of the same shape, say a simple cone, and they will be subtly different, with only one coming close to a ten if you are lucky, and none will be "perfect" (see the sidebar on Smith's Law of the Uniqueness of Things.)

I like to say that I have not had to buy a wedding or housewarming present for twenty years, although I am careful to give high-scoring bowls—the sevens and eights—away as representatives of the art (the threes and fours pile up in boxes in the basement for a fate yet to be determined).

SHAPES

As for shape, the emphasis (for me) on bowl design should



Fig. 1

Purported to be hundreds of years old, this 5" diameter antique Chinese celadon bowl is delicate and lovely to hold; the side has a subtle ogee curve.



Smith's Law of the Uniqueness of Things

This law states, at its most general, that everything in the universe is unique—unique in appearance, composition, and position in space-time. There are profound philosophical implications of this law, but as woodworkers, we celebrate this law and the “one-offness” of bowls and turnings, and of course, the beauty and fascination of wood is its very uniqueness and variability.

There are several corollaries to this law, and one practical version is that “in any collection of similar objects, at least one will behave differently in use.” Turn ten spindles and one will be different—in grain, flexibility, or finish. Buy a box of screws, and at least one will strip when being used. Buy a carton of eggs, and one will have a thinner shell even when the eggs in the carton will have already been preselected for uniformity. We talk about peas in a pod as an example of the similarity of things, but even then I would wager that one of those peas will be sweeter, smaller, or somehow different from the others. We hand-select apples in the market from a pile of apparently identical apples.

Manufacturers of things fight this law all the time. The science of statistical quality control is geared to eliminating variances, but the ideal of zero defects remains an ideal. I remember watching a production line for labeling plastic bottles. Each bottle was slapped with the label and then automatically inspected by an image-processing unit. Remarkably, one in every few thousand bottles had to be rejected because the label was crooked or even occasionally upside down (how this could happen baffled the engineers). There was a puff of air and the reject was kicked off the conveyor belt. So even with sophisticated machinery and strict controls, there are still unique events.

One famous woodturning example that demonstrates the law by exception is the mahogany salad set that James Prestini made in 1939. It is one of the foundational inspirations of modern woodturning. The main large bowl has seven identical smaller ones surrounding it, touching the main bowl and each other. The amazing part is that the seven smaller bowls are precisely identical. This is the inverse of one-offness. I don't want to know how many rejects were made along the way.

Here is another practical result of the Law of the Uniqueness of Things: always buy more than you need (about 10% is a good number). That's why we buy screws in boxes and eggs in cartons. If you need ten spindles, one will not behave, so make an extra one to be safe.

This law explains why perfection is so elusive.

be on the simple, classical forms. I use the word “classical” because these shapes go back thousands of years. It is a useful exercise to consider the art of the potter or glassblower in history, as shown by examples that survive. They survive because they are treasured. The design principles in these arts parallel the art of the turner; ceramic or glass bowls and wooden bowls share the same aesthetics. I have an ancient small celadon bowl from China that is of exquisite design and elegance, and I have yet to make a turned bowl to match it (see Fig. 1). It would take a book to review these classical shapes and their variations...but we have the book.

Whether conical, closed, or ogee-shaped, the flow of the wall should be a curve. There is a simple test for this—the *Ruler Test*. Hold a flat edge against the profile, and it should touch the curve at one point only, and a small point at that—vanishingly small to be exact (see Fig. 2). Flats and bumps in the profile reduce the score a few points. Curves should flow, but even then, some curves are more pleasing than others: a dash of asymmetry adds spice to design.

DECORATIONS

Beads and grooves can rescue a bowl from mediocrity and notch it up a few levels. The general rule is that if the bowl is simple and plain, decoration can enhance the design; for example, one or three grooves can be placed near the top to enhance the rim. (*Design point:* odd numbers of elements are more appealing than even—three

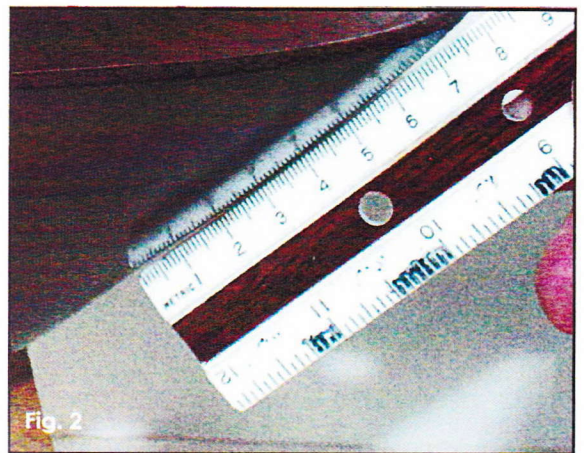


Fig. 2

This bowl fails the ruler test because it is flat between about the 2 to 4 cm marks. This is a common problem with ring bowls because of the method of laying up the rings and then blending the curves when the wall is thin in areas.



Fig. 3

This bowl has nice weight and pleasing curves, and is a pleasure to hold.

grooves instead of two, for example.) On the other hand, if the bowl is busy and the grain is wild, beads and grooves only make the design busier.

Beads provide better handling. Inlays are effective in filling voids and bark inclusions; I use a lot of turquoise dust with cyanoacrylate glue (CA or superglue). Inside a bowl, especially one that is being used for food, all cracks and pits should be filled with sanding dust and CA to provide a uniform surface.

FEET

Turning a foot on a bowl is acceptable and can add to or detract from the overall design, depending on how it is executed. A foot generally adds lift to be sure. One consideration, however, makes me less inclined to add a foot: it exactly defines the base of the bowl, whereas without a foot the lift from the surface is more mysterious and subtle.

There is much debate about the size of a foot or contact point *sans pied*. Too large a foot and the bowl is clunky and sits there without lift. Too small (I have seen some lovely cones resting on a point the size of a dime) and the utility of the piece is compromised. There is no definitive answer. The magic tells when it is right. But a foot about one-quarter the diameter is a good start.

RIM

I like to make the rim bevel straight and perpendicular to the walls at the rim. If the rim is horizontal, then the outer edge will be thin, fragile, and sharp. Rounded rims often work, but lack precision. Flared or beaded rims work when made well. Undercut inner rims add an element of mystery. Rims that subtly warp with time and natural-edge bowls with their intrinsic wave are (usually) attractive.

I would add a note here. Since I favor simple beveled rims, classic shapes, and footless bowls, these elements

make up and define my *personal style*. Over time, my bowls will share these distinctive touches and aesthetics. When I write a letter (or more likely an e-mail, since handwriting is a lost art), I have my own style, good or bad. When I turn bowls, I also have a style. It is worth cultivating such a style, but it takes time and a great number of bowls.

WEIGHT

The moment of truth in bowl turning is when the bowl is finally parted from the lathe, and the turner gets to gauge its weight and heft. Getting to the final thickness and shape before parting is important because once that parting cut is made, you are largely stuck with the results. Finishing the bottom of the bowl (whether footed or not) to remove chuck marks is an opportunity to thin out the bottom where the weight usually sits (does this sound familiar?), since we cannot readily gauge thickness there; but this may lead to asymmetric bottoms or, even worse, bottoms that are too thin. Jam chucking a bowl to add rim decoration or even reduce wall thickness is even more risky because of the dangers of a catch or unevenness.

Visually, the wall thickness at the rim is a good indicator of its heft. We should aim for about 1/4" as a guideline. The tactile sensitivity of fingertips feeling the wall between them is another judge of quality. Evenness of thickness is desirable, but not an absolute factor—the bottom can be thicker, especially on taller vessels to provide stability. The inner profile does not have to match the outer one exactly—it should complement it. Thinness or thickness beyond about 1/4" is a dangerous area—the bowl may then be too thin or too heavy. Though thin walls are technically impressive, their utility is problematic. Walls that are too thick may give utilitarian robustness, but do not give the sense of refinement we unconsciously expect. There is an expectation that small bowls are light and large bowls are heavier, and the unexpected is remarkable, but may not



Fig. 4

This elm bowl is clunky and thick—what was I thinking?



Fig. 5

This vase would mainly be a display piece with good lift and heft.

work well.

Raffan recommends that we cut a few bowls in half to observe the wall thickness and our technique. We learn more this way than by holding onto a poor sample. He is right, although this is a hard thing to do after spending time and effort on a piece. I usually wait for bowls with scores of two or three to do this! On the other hand, we have to guard against the fault of preciousness—making bowls that are so special, fine, and valuable that we approach them in awe. Cutting bowls in half kills preciousness.

And a bowl should be used—I have no hesitation about presenting a salad in a fine, beaded oak bowl that could be shown in an exhibition; it is a quiet delight. I have no hesitation in kneading bread dough in a large utilitarian ash bowl of the plainest color. It is equally a delight.

A smooth finish with no turning or sanding marks is necessary for higher scores. I usually buff my bowls when dry to a subtle waxed sheen, although a light wood bowl finished to remain pale can be left matte. I am often surprised that a buffed and polished bowl feels lighter than the unpolished one—the tactile smoothness adds some subtle grace. Over time and with good use, a bowl will develop its own deep patina.



Fig. 6



Three curved rims are shown (from left): box elder, ash, and flame maple.

CRITIQUES

It is a good practice to critique your own bowls, and I am going to do a few of my own here. I realize that critiques are always subjective and that the reader may or may not agree with my assessment...

Critique #1: This 10-1/2" diameter x 4" walnut bowl (see Fig. 3) has nice weight, pleasing curves, and a good lustrous finish, making it a pleasure to handle. Note the beveled rim, which has also developed a subtle wave over time. The walnut is attractive (although we are ignoring the look of the wood here). It's almost a 10, but it's not quite "stupendous," so I will give it a 9. I would be happy to use this in the kitchen or for display.

Critique #2: What was I doing? I think this 9" diameter x 4" elm utilitarian bowl is clunky and thick—nearing 1/2" on the lower walls (see Fig. 4). There are only two grooves instead of the recommended three on the side. This is a 4; my excuse is that it is one of the first bowls I made after a hiatus of a few months and I had definitely lost the touch. It should be cut in half for a demonstration of how not to leave the walls, but it is utilitarian and robust, and someone might use it for vegetables.

Critique #3: This 7" diameter x 7" spalted maple vase would not be very useful for flowers or fruit (with the lower wall hole), so it is mainly a display piece (see Fig. 5). It has good lift and heft. The extra weight on the bottom—which is not evident in this photo—is good for stability. This is a 9.

Critique #4: Here are three curved rims (from left): box elder, ash, and flame maple (see Fig. 6). The box elder rim is undercut and shows a tantalizing shadow on the inside. However, on the outside, it needs something to break the curve up to the rim—a small groove might work, but it is too late now. This is a 7. The ash bowl is sturdy, with good heft, and the rolled over edge makes for good handling. Give it a 9! The maple bowl looks as good as the ash here,



Fig. 7

The inward flowing sides and subtle lift from the table give this bowl good appeal.

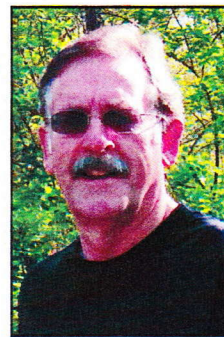
but when picking it up, the wall under the rim turns out to feel too thin and upsets the balance of the bowl. It's a shame, but it only deserves a 6.

Critique #5: Although the base is broad, the inward flowing sides and the subtle lift from the table gives this 9" diameter x 2-1/2" maple burl bowl good appeal, it also has a fine heft (see Fig. 7). Note the inward bevel of the rim; I think this bowl is a keeper and I generously give it a 10.

FINAL THOUGHTS

Simple and clunky may be easy enough, but simple and elegant is not. The passion for bowls is the search for this simple elegance that will be admired for generations. To get there means combining years of practice and technique with a critical and ruthless aesthetic eye on the many factors that go toward the whole design. One good bowl is better than several middling ones. But the artist is never satisfied, and the quest for perfection continues relentlessly in the workshop, while the piles in the basement grow larger.

Peter M. Smith



Peter Smith is a native of Aberdeen, Scotland, but currently lives in Princeton, New Jersey. He has been a woodturner for many years, and turns bowls of all shapes and sizes, using the rich variety of native hardwoods found in his area. Peter's work is in many collections (and kitchens) nationwide, and he has also written and demonstrated extensively.

In his workshop, Peter uses three lathes and a variety of tools to turn found logs into one-of-a-kind pieces. His bowls range from nonutilitarian hollow spheres to functional salad bowls. Peter's aim is to simplify the bowl's form following the classical shapes of bowls and vessels that have evolved over time in various cultures, and to bring out the beauty of the wood whatever its final utility.

In between bowls and the demands of job and family, Peter finds time to turn small objects, such as pens, tops, boxes, and letter openers, and to make Shaker furniture.