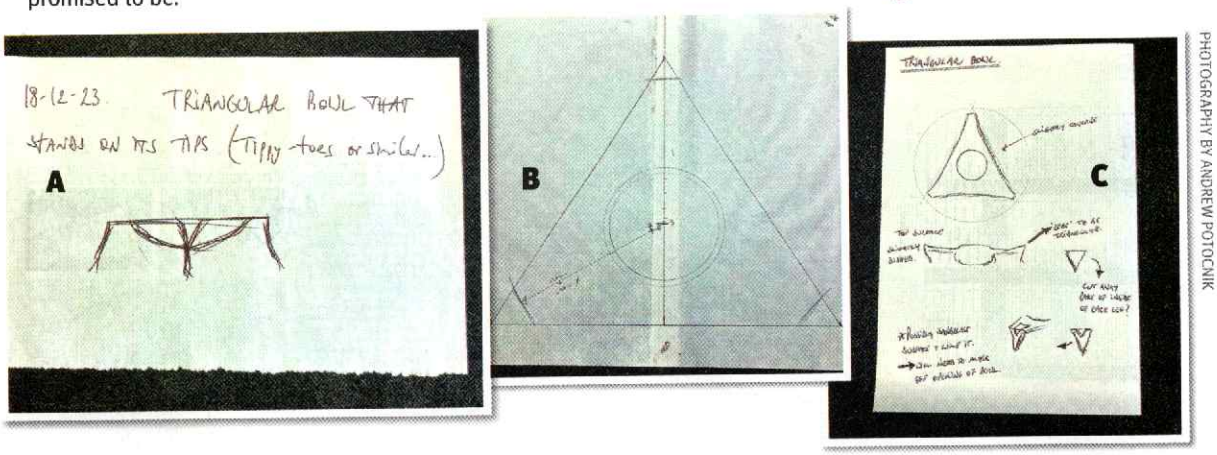
Osage orange bowl

Andrew Potocnik designs and turns a triangular bowl with tapered feet

For me there are few times when a project comes to mind, and I then work through a series of sketches to arrive at an overall idea that I'm happy to get started on. Then I search through my stash of wood to find something that will fit the project. Most of my projects begin with an idea that evolves as I make it, tweaking it along the process.

Here is an example of an idea that came out of I don't know where, and then evolved through a series of sketches to become something far more than the original idea promised to be.



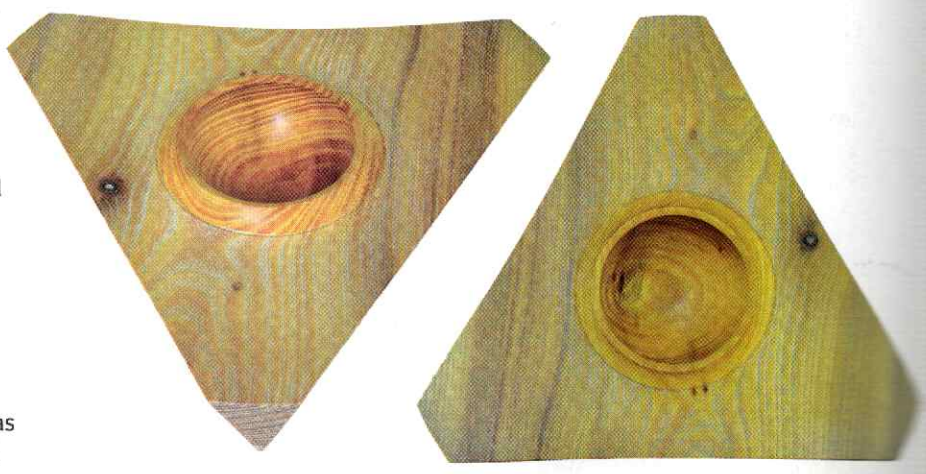
PHOTOGRAPHY BY ANDREW POTOCNIK

It began as something that caught my eye and I drew a simple outline of a bowl standing on tapered feet (photo A). The idea festered for a few days and elements of it developed over coming days with a few more rough sketches on the back of photocopier paper that I have ample supplies of from my teaching days.

Gradually the idea evolved over the next days to become an almost fully resolved design, ready to be drawn to scale so I could work out just how big a piece of timber I needed. I'm a visual thinker, so by drawing the form in plan view, I could develop a balance between the bowl's opening and outer edges (photo B), and therefore dimensions.

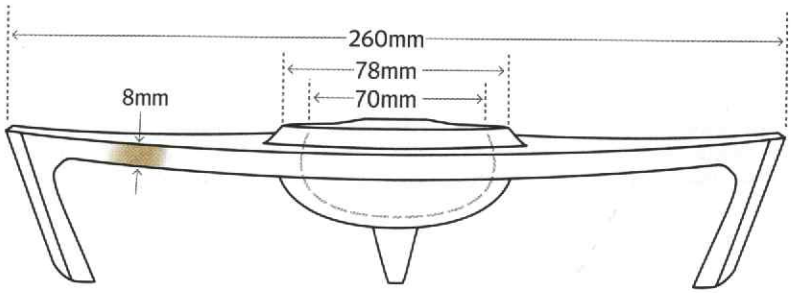
Along the way there were a number of evolutionary steps that took place on paper as my mind worked through possibilities (photo C) which, fortunately, all led to one final design, not just opening a can of worms of possible options.

Once I was happy with dimensions and proportions, I needed to find suitable material that was wide and thick enough for the idea to work, so the search was on... leading to a natural-edged board of osage orange which had been milled and given to me a long time ago. The date I had written on it was 1998, so it was well and truly dried.



Armed with drawings and suitable timber I was ready to begin this project, but there was still room for alterations as the piece evolved.

Plans & equipment

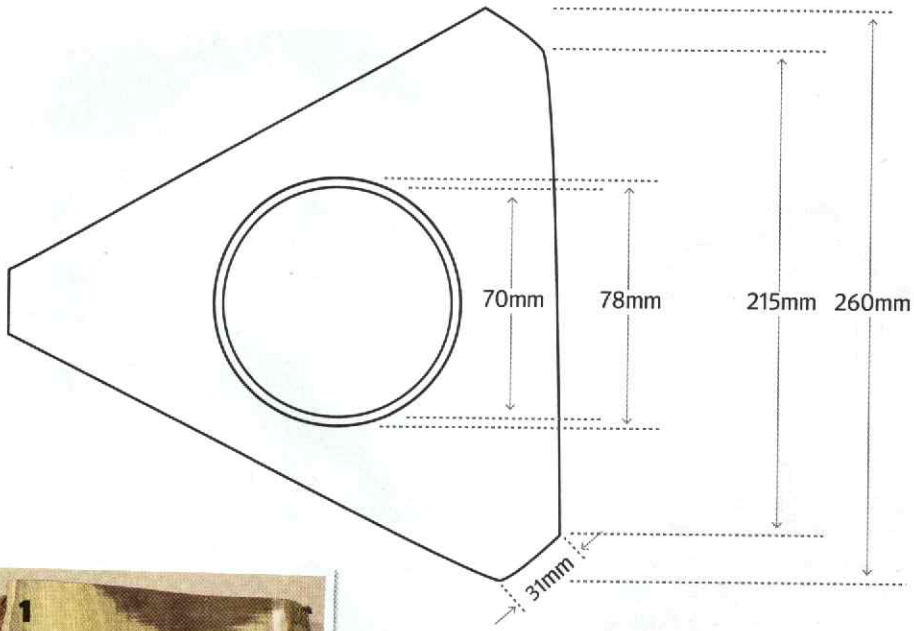


Tools & equipment

- PPE & RPE as appropriate
- 12mm bowl gouge
- Flat curved scraper
- 19mm round-nosed scraper
- Round-tipped carbide scraper
- Square-tipped carbide scraper
- Round skew
- Vernier callipers
- Figure-eight callipers

Materials

- Wood that will yield a triangle of 260mm on each of its three sides and 50mm thick
- Sacrificial material of about 85mm wide, 50mm thick and 300mm long



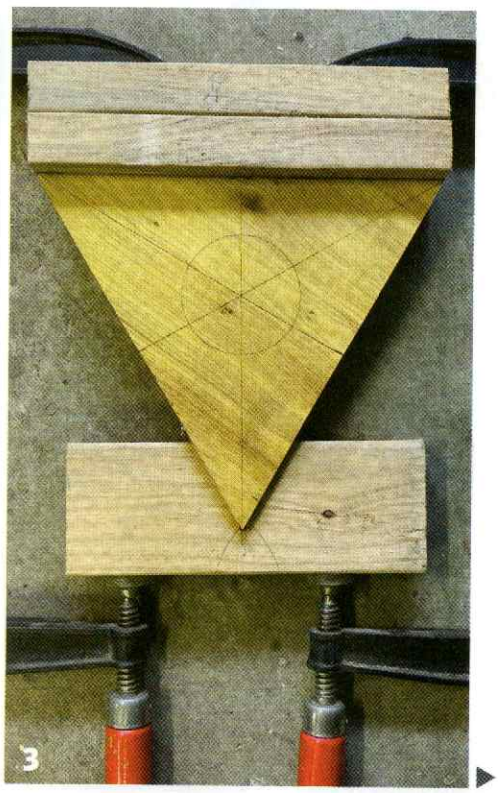
The making

1 Osage orange is a timber that falls into a rare category due to its colour when freshly cut. I can only think of a couple of other commonly available timbers that show this level of yellow colour – mulberry and a timber I encountered in Nepal named haldu.

In most cases, timber darkens as it is exposed to oxygen and this was the case with my timber, which had already darkened before I put it aside about 30 years ago. In this photo you can see the difference between the aged surface and freshly machined areas.

2 The short section was cut from a longer plank on my drop saw, giving me a straight edge that I could butt up against the fence of the saw and cut 60° angled cuts to create an equilateral triangle (a triangle with three equal length sides, fingers crossed). Be sure to hold the wood securely and keep fingers well away from the cutting blade. In my case, I took several light cuts, working my way through the final thickness of the wood.

3 Once cut, I needed to add scrap material to build the triangle up into a circular blank that would be safe to spin on the lathe. Using construction grade pine, I cut a few pieces and glued them together before gluing them to my osage blank, but as you can see, clamping a triangle is tricky. Another piece of pine with a V-notch cut out solved the issue.



4 After adding sacrificial timber to each of the three sides and allowing ample time for glue to bond, I was able to cut a disc from my built-up blank. Using my bandsaw, I cut away unwanted timber. If you don't have a bandsaw, you could use a jigsaw, but make sure your timber is held securely so the saw can cut safely and accurately. Alternatively, you could use a coping saw, which will be easier on the ears and produce less air-borne dust, but will take longer.

5 To prepare the blank for mounting on the lathe, I drilled a hole of about 25mm diameter on my drill press. If you're doing this with a hand-held drill, make sure you drill deeper than the reach of jaws used to hold the wood in place on the lathe, and be sure to hold the blank securely.

6 With a hole drilled, the blank was pressed on to the stepped jaws of my chuck, making sure the face of the blank was pressed flat on the shoulders of the chuck so it would run true.

7 Even though the chuck will provide ample grip in your blank, it's always good to add the security of your tailstock just to be sure, especially if you get a catch. I used a 12mm bowl gouge to true the blank up, trim outer edges and begin removing unwanted material.

8 Waste material was removed so a tenon could be cut using a 10mm wide beading tool. You could use a square-tipped carbide cutter, but I tend to chop and change between tools I use. Don't ask me why, it's just the way I work. This tenon would be used to reverse the blank and allow shaping of the bowl's upper surface.

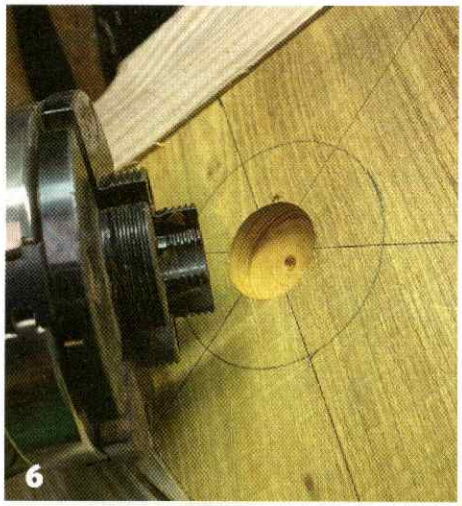
9 Reversed and held firmly in compression mode in a scroll chuck, I again used my tailstock to add support to the blank as I used a 12mm bowl gouge to rough down the surface, followed by a flat curved and round-nosed scraper to create a curved surface that would be the upper portion of the bowl. In my mind, I had already decided on the perimeter of the inner portion of the bowl, so I could now move to the outer profile of the form.

10 Although my initial sketch had legs that flared out from the outer perimeter of the bowl form, I realised that this was wrong once I began to shape my piece. The legs needed to curve back underneath the form. Sometimes it seems so logical when you see the form evolving before your eyes, hence the need to sway from what you envisaged in initial ideas and drawings.

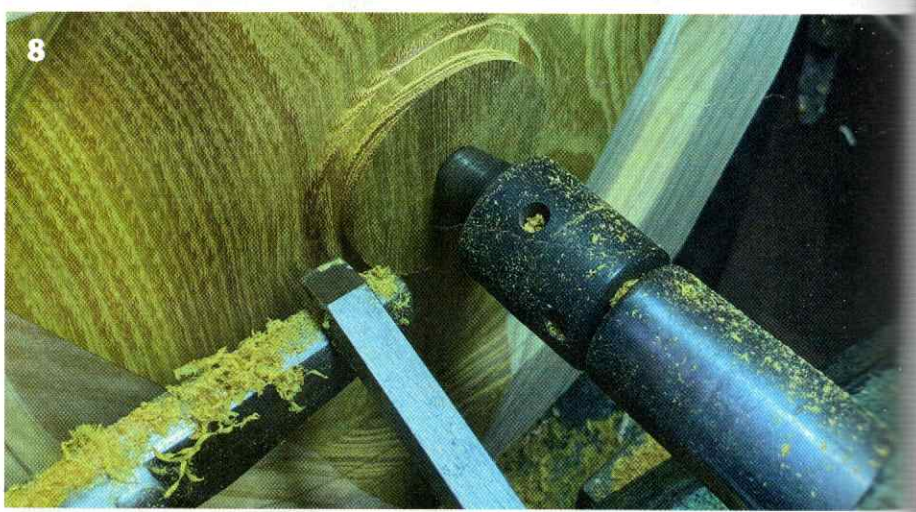
Another aspect of this change was due to the overall idea of having tapered triangular legs, which were drawn with a few pencil lines to assure me that the project was heading in the right direction.

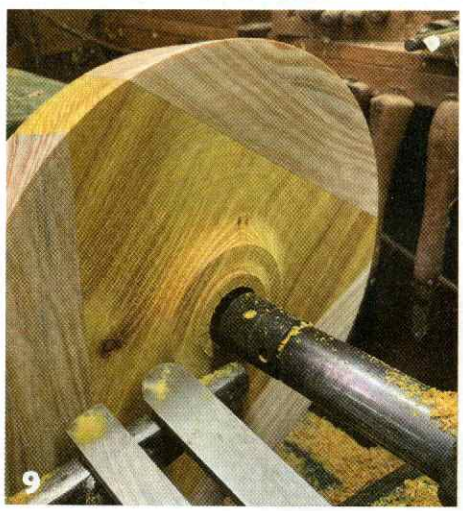

4


5


6


7


8


9


10

11 Satisfied I had the right balance and proportion of form, I sanded the face and outer edges of the piece through to 320 grit then added a chamfer of about 2mm width with sandpaper to create a crisp break between one surface and another.

12 To hollow the main bowl section, I used a 12mm bowl gouge, removing the bulk of the waste material, followed by a 19mm fingernail ground scraper to neaten up the interior of the bowl. You'll notice that I removed the tailstock and centre to allow tools to sweep through an arc as they performed their purpose. Keep your toolrest as close to the work surface as possible to reduce the risk of getting a catch.

13 Once the form was turned, I sanded it through to 320 grit. There are two key points to be taken into consideration. The first is to always use appropriate dust extraction with the opening held as close as safely possible to your work. You should also wear a suitable dust mask.

The other point to note is that you should sand up to the edge of the opening to ensure a crisp intersection between the bowl's interior and the flat edge it meets. If you sand in from the bowl's opening, you run the risk of rolling the edge over and losing definition in the final form.

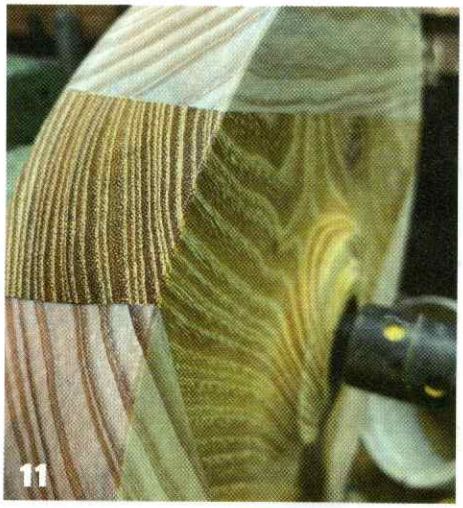
14 Planning ahead, I applied masking tape to the outer portion of the bowl. The key here is the sequence of application considering a groove would be cut through it, which required a neatly cut surface.

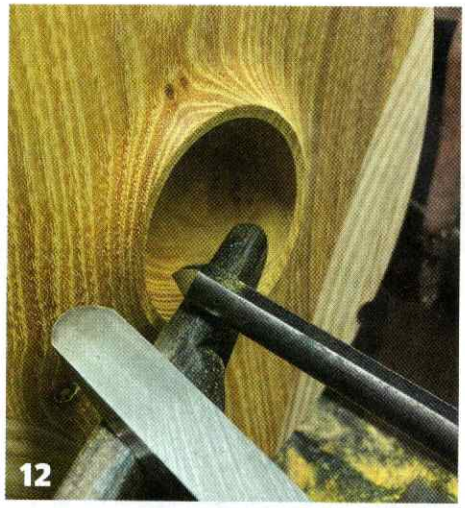
15 Using a curved, pointed carbide-tipped scraper, I cut a groove of about 2mm depth into the face of the bowl. This masking was in preparation for a technique that had been suggested to me some years ago, although I hadn't found a piece appropriate to using it on, but I'll come back to it later in the making.

16 The form needed to be reversed on to a stepped chuck so the underside could be worked. To give myself a bit more security, I added some thick rubber electrical tape to each jaw so as to not mark the inner edge of the completed osage form.

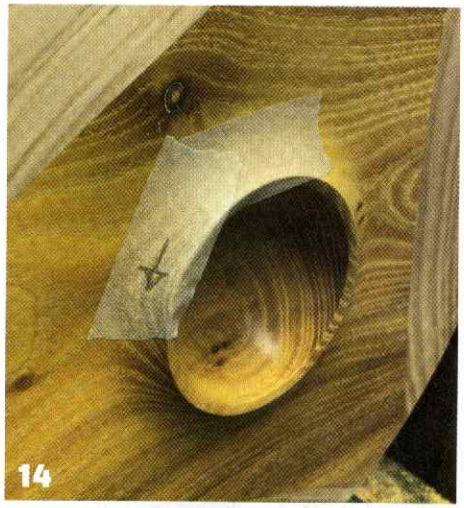
17 Using the tailstock and live centre to give the wood as much support as possible, I could now begin to hollow the underside of the form. I kept the wall somewhat thick at about 12mm so the wood stayed stable as I began to refine inner portions of the piece.

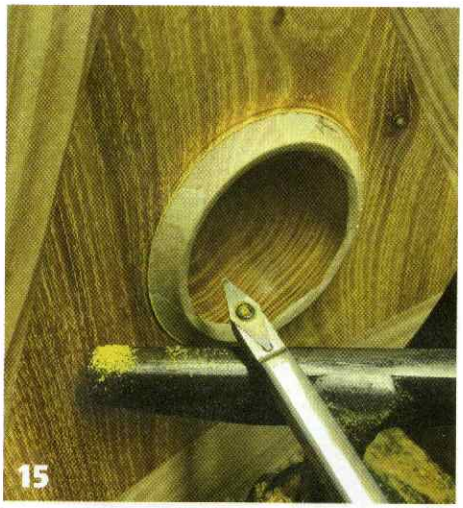
18 Keeping in mind the depth I had hollowed the bowl to, I could trim its underside to as close as I dared go, at the same time running the curve of its exterior with a square-tipped carbide cutter.

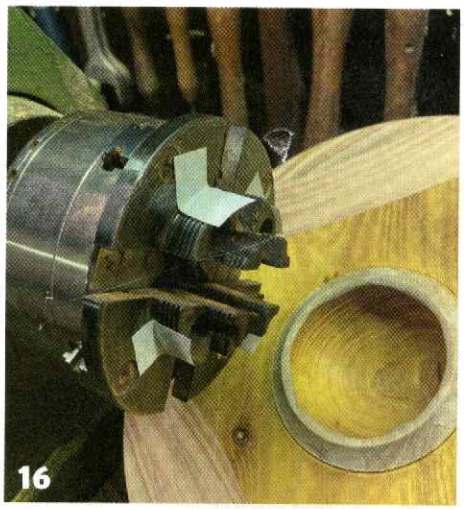

11

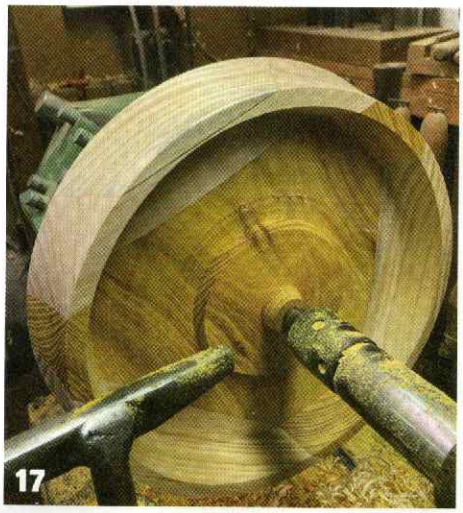

12

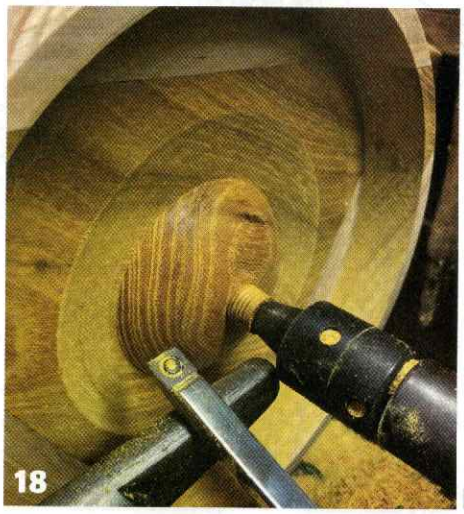

13


14


15


16


17

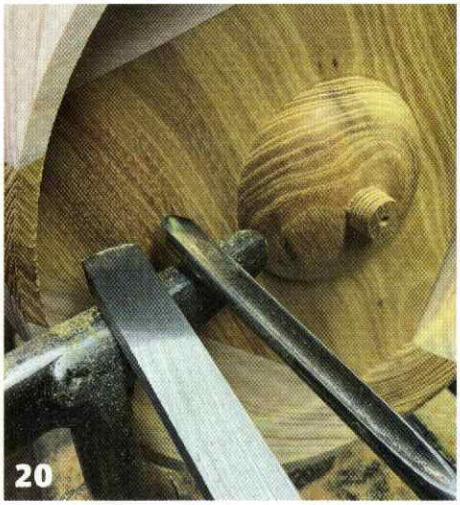

18

19 One of the benefits of having an opening between the jaws of the chuck is that you can insert figure eight callipers to measure the wall thickness to make sure planned thicknesses align with actual measurements. Sometimes this is due to careful calculation, other times there is an element of luck, but do your best to work on the safe side and be careful.


19

20 The outer edge of the form (which would become the legs of the finished piece) were cut down with a 9mm fingernail-shaped bowl gouge and in combination with a flat curved scraper, the underside of the bowl was refined.

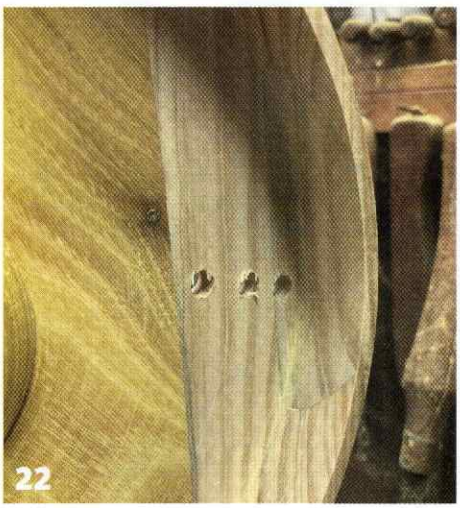
21 Before sanding the turned surface, I cut a V-line where the rounded surface of the bowl's exterior meets the flatly curved underside of the triangular area. In this case, I used a round skew to create a neat intersection, which allows sanding one plane into the other without losing definition. This also makes non-turner viewers question whether the piece is made of one or more pieces of wood.

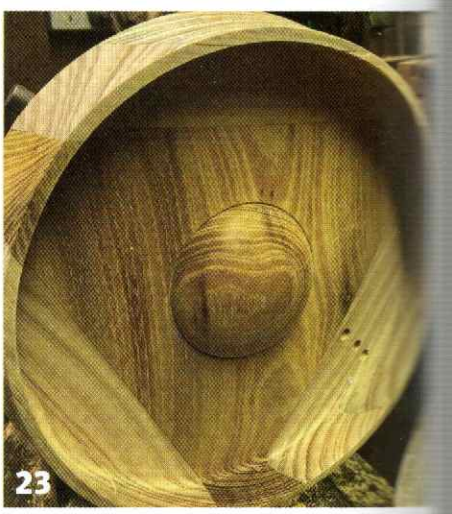

20


21

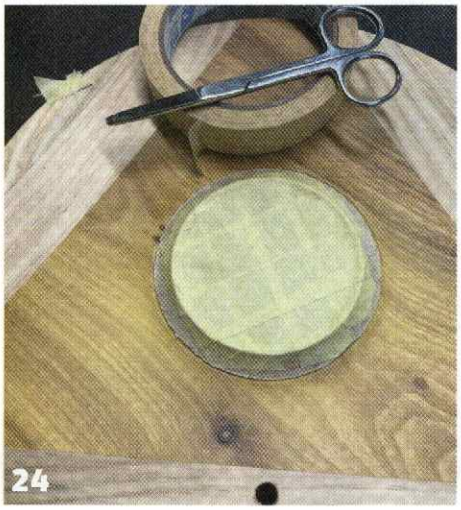
22 To check the thickness of the top section of the form I opted to be sure and drilled holes through the sacrificial timber so I could test the thickness with Vernier callipers, and found that original estimations were way off, requiring more trimming...

23 ...before sanding all surfaces through to 320 grit. It's funny how your average workshop tends to be coated in a layer of brownish dust, which we take for granted, even though we use all sorts of dust extraction, thinking we do well in expelling fine dust from our workshops. It isn't until you use a yellow timber that you really see how much dust you don't capture that settles on surfaces of your work space. I thought I did a good job until now.

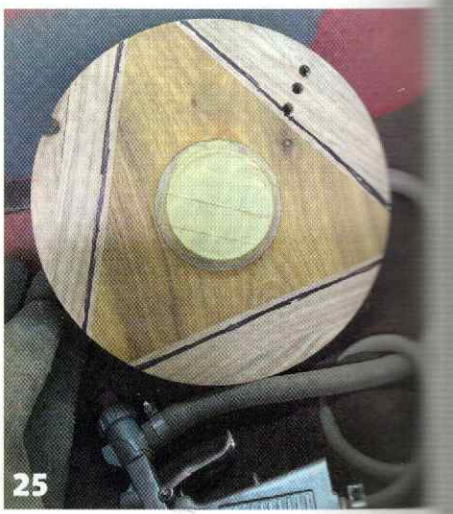

22


23

24 For the next step I needed to take a leap of faith and venture into something I'd not tried before. Many years ago Betty Scarpino suggested I should try sandblasting osage and then liming the textured surface to highlight the grain of this wood. I scribbled this suggestion on a note that I've moved from one position to another in my workspace, always keen to try it. The paper is now darkened with time and the ink faded, but the note to self is still there and the idea embedded in my mind. I sealed off areas I wanted to stay smooth with masking tape, working up to edges created way back in photo 15.


24

25 Placed inside my sand-blasting cabinet, I realised that due to reduced vision through the acrylic window some black marker lines would help indicate the surface I needed to work on. The purpose of sandblasting the wood was to wear away softer portions and expose harder areas of the grain. Working inside an enclosed cabinet, it is necessary to stop regularly to check which areas have been blasted sufficiently, and which need more attention.


25

26 Side light shows just how effective this technique is, which will contrast nicely with the areas which were masked off and kept smooth.

27 Liming solution was rubbed into all sandblasted surfaces before excess was wiped from high spots with a cloth moistened with turpentine, leaving traces of white in the textured grain. Once this treatment had dried, the masking tape was removed to reveal the contrast in colour and texture.

28 To remove sacrificial pine I used a heat gun, softening glued surfaces then gently prying them apart using hand pressure. Then, to trim down the 'legs', I applied some masking tape to the sandblasted wood and drew tapering lines to guide my shaping using a disc sanding assembly that I'd made some years ago, which was fitted to my lathe. Some extra masking tape was applied to the edges of the form to provide a bit of padding where it would rub against the sanding table during the next stage of shaping.

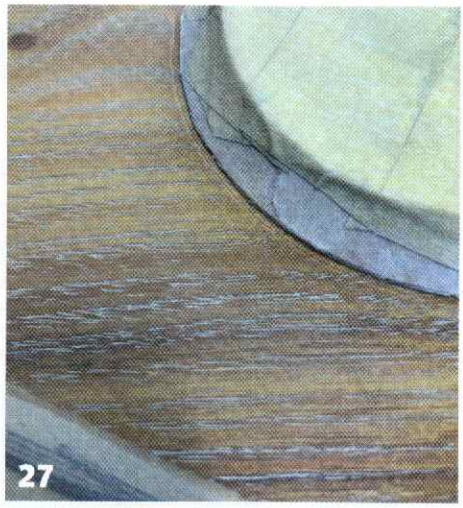
29 The shaping of the bowl's legs required regular stops to check that just enough and not too much material was removed, and at the correct angle. I was aiming for a straight surface from the tip of each leg to the tip of the next leg and the area in between, which earlier drawings had shown a slightly concave curve. The development from concept to actual object had changed just a little bit.

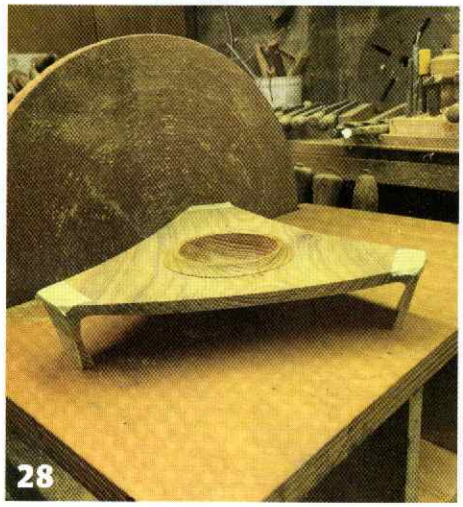
30 To sand this surface through to 320 grit, I used a couple of sanding boards fitted with different grades of sandpaper before reverting to a sanding block for final refinement – and wasn't I glad this edge was no longer concave as per initial drawings. That would have required a whole new set of processes to create.

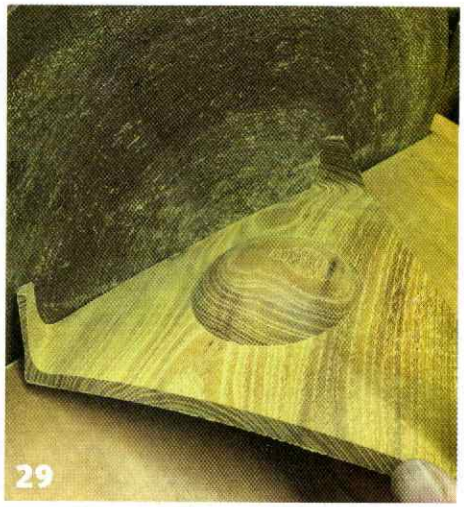
31 The tips of each leg needed some shaping to ensure they tapered down to a fine point, so a variety of tools – including a skewed carving knife, files and sandpaper held flat on a steel ruler – were used. It isn't always possible to use just one tool to achieve the result you're after, so it's often necessary to think laterally and use all tools you have at your disposal.

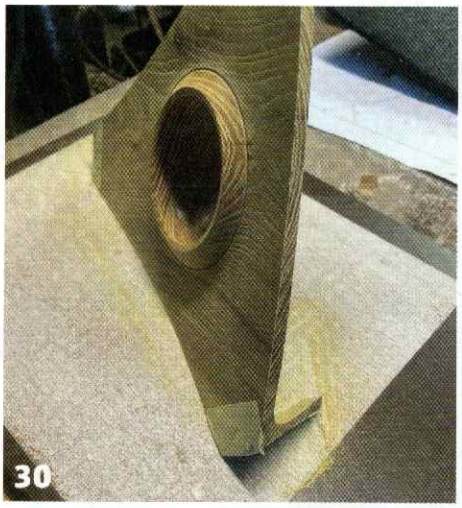
32 Once all surfaces were shaped and sanded to satisfaction, including 'easing' of all sharp edges, it was time to apply a finish, but first I added my name and that of the wood in an inconspicuous place. As is often my chosen method of finishing a piece of work, I used a cotton pad to apply satin polyurethane that was wiped on then wiped off a few minutes later. This leaves lively colour without a build-up of finish on the surface of the wood.


26


27


28


29


30


31


32

Conclusion

Beginning with an almost resolved design that seemed resolved on paper, I still found it necessary to alter the piece as it evolved due to the difference between what was conjured in my mind's eye, what looked right on paper, and what ultimately looked right in a three-dimensional object. And along the way, I opted to not cut out sections within the legs. Maybe in another project... ●