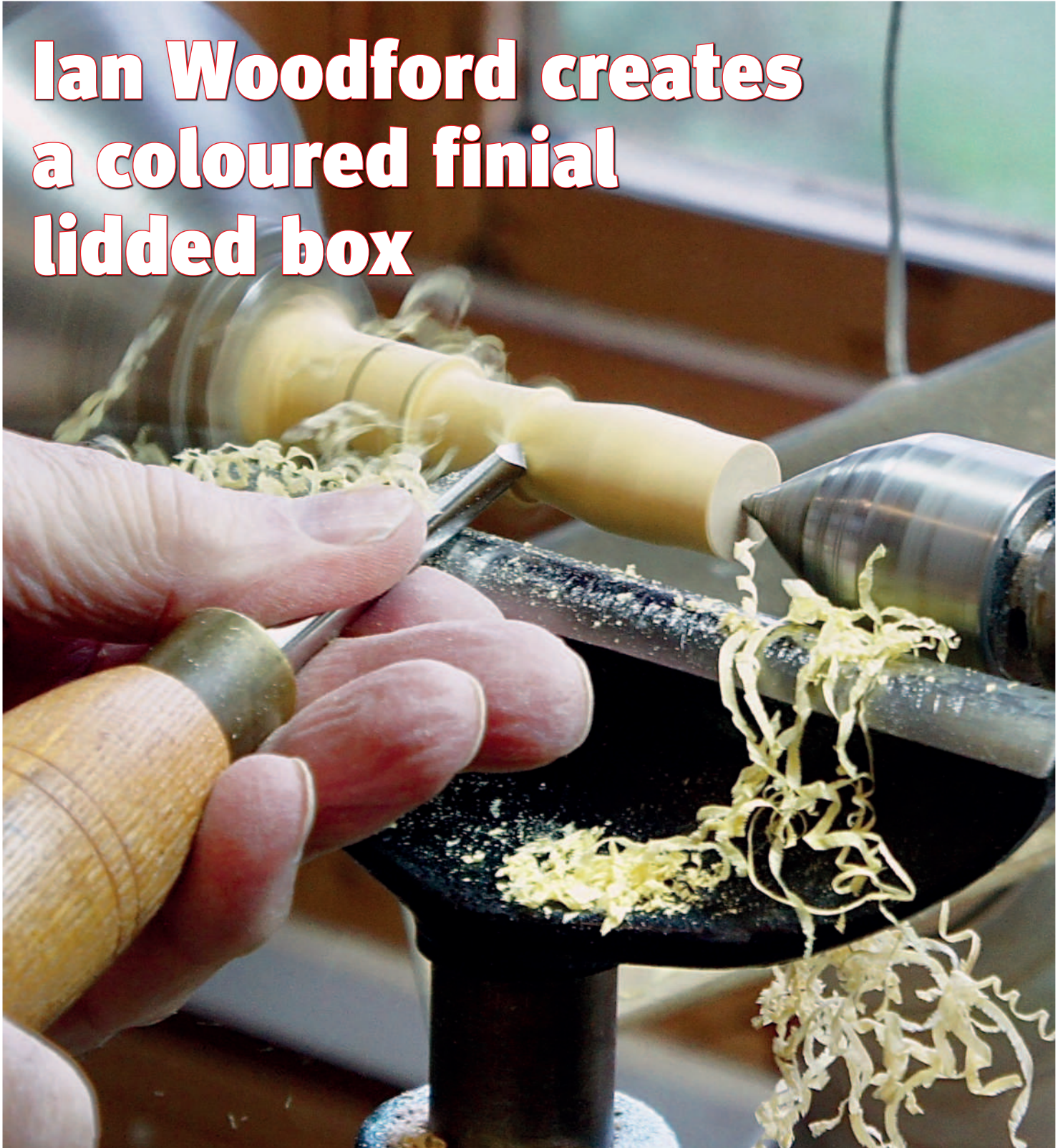


Woodturning

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Ian Woodford creates a coloured finial lidded box



PROJECTS Tealight holder • Garden tools • Croquet set
• Translucent bowl **TECHNICAL** Jigsaw patterns
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Every Lathe Tells a Story

"And we like to think that's why people choose Robust lathes. The ergonomics, the build quality and the sturdiness allow you to concentrate on your work, and not the limitations of your tools."

*Brent English, owner and designer,
Robust Tools.*

AB owner Tom A. showing his granddaughter Linnea some of the finer points of his woodturning.



Ask any woodturner about their lathe and you'll hear a story; who they got it from, when and where they picked it up, and perhaps even the reasons they chose it. We doubt you'd hear the same affectionate response about a belt sander.

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And we like to think that's why people choose Robust lathes. The ergonomics, the build quality and the sturdiness allow you to concentrate on your work, and not the limitations of your tools.

What's your lathe story?



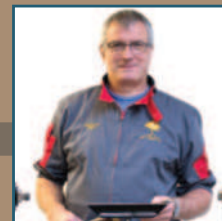
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With June nearly upon us, at *Woodturning* magazine we're poised to spring into summer. In this issue, as Sue Harker lifts our spirits with a pretty sunflower tealight holder, Stephen Long's garden set of dibber and newspaper pot maker will set you up for your late spring planting. Continuing in the garden idyll, begin making Colwin Way's croquet set, ready for fun in the sun during your post-lockdown barbecues.

Michael O'Donnell guides us on a journey from a greenwood log to a spectacular translucent cross-grain bowl, and Les Symonds continues his tribute to ancient Persia with a pyrographed replica of a ceramic vessel (above).

Richard Findley creates stunning contrast in a jigsaw platter and Ian Woodford displays his exquisite coloured finial box.

We introduce the next generation of turners with the impressive floral creations of Matt Underwood and hear from the Gloucester Association of Woodturners about their last 12 months.

On the technical side of turning, Tony Nicol discusses the appreciation and development of shape and form, Mark Palma shares his tips for better power sanding, and Andy Coates describes the impact of specific timbers on your health and happiness.

As always, we love to hear from you and see your latest work, so please contact us at WTEditorial@thegmcgroup.com or on www.instagram.com/woodturning__magazine/

Happy turning

PHOTOGRAPH BY LES SYMONDS

 We are now on Instagram. Follow us on @woodturning__magazine and share your work with us using #woodturningmagazine



COVER IMAGE: Ian Woodford (see page 13)



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In part 2 of his series, Tony Nicol discusses the appreciation and development of shape and form

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Michael O'Donnell turns a thin, translucent bowl, an exciting and challenging experience that will build your confidence for any type of turning

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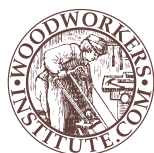
97 Turned shop mallet

Rick Rich turns a handy workshop mallet



HEALTH AND SAFETY

Woodturning is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines. All readers should observe current safety legislation when turning and wear appropriate personal protective equipment (PPE) and respiratory protective equipment (RPE).



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19

Ancient Persian hollow vessel

Les Symonds turns a replica of another prehistoric Persian decorated ceramic vessel

PHOTOGRAPHS BY LES SYMONDS

Having last month made a cone-shaped vessel typical of those of Tall-i-Bakun in ancient Persia, we return to the work of the same settlement for this project. This time the shape of the vessel is suited to those turners with moderate skills and the system of hollowing a vessel through splitting and reconnecting it is especially suited to projects such as this.

We suggest the insertion, with adhesive, of a loose ring to reinforce the joint. This is a useful technique not only for reinforcing a joint on a large vessel, but also for the joint between the body and the lid of smaller items, such as turned boxes, because it minimises the width of the waste cut away at the rebate joint between body and lid, thus helping with grain alignment where complex grain patterns occur. When used in two-part, split vessels being glued back together, the essential point of this method is that the grain of the loose ring is in a different orientation to that of the vessel.

As explained previously, the vessel upon which this project is based is likely to be in the order of 5,000 to 6,000 years old, although similar vessels were produced throughout the millennia of the Ancient Persian civilisation.

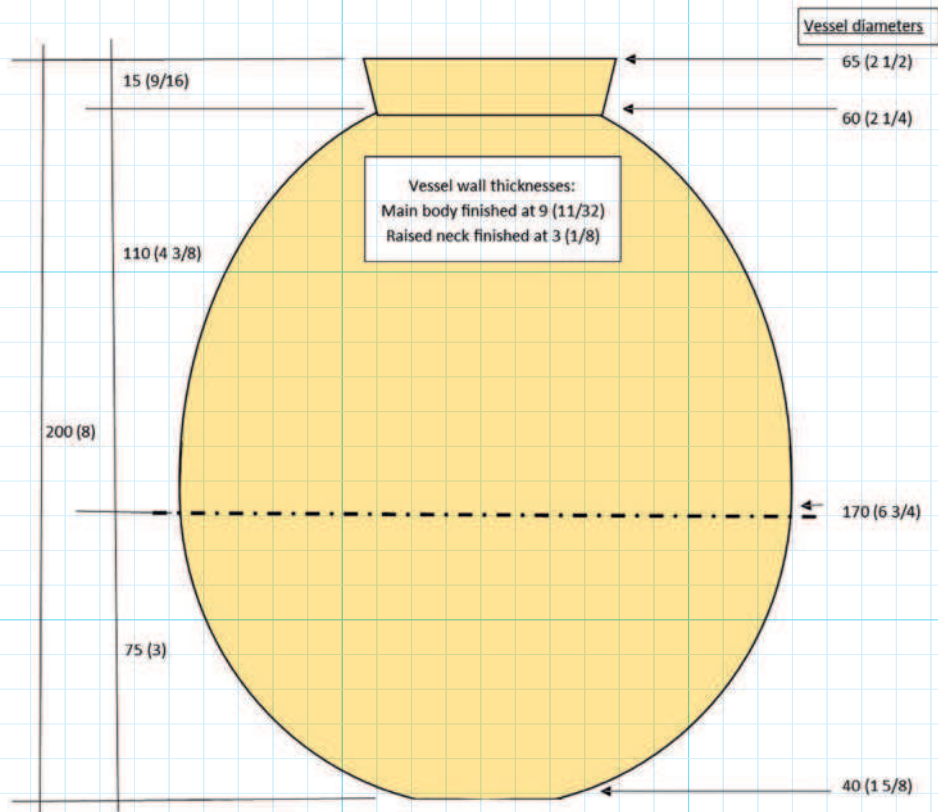
Originally, they were used to store liquids and their peculiar shapes, especially the base, are explained by the fact that these nomadic settlements were almost always in sandy areas, so vessels such as this could simply be pressed into the ground to keep them upright.



Decorative designs

As with previous projects, the zig-zag geometric design features once again. This was a common feature in the decorative work of ancient cultures, its use spreading westward across Europe and into the furthest west reaches of Cornwall and Wales, where it has also been used by Celtic cultures. The ibex design is a common feature used by semi-nomadic desert cultures, reflecting the value placed upon such animals, which were the mainstay of many desert-nomad economies.





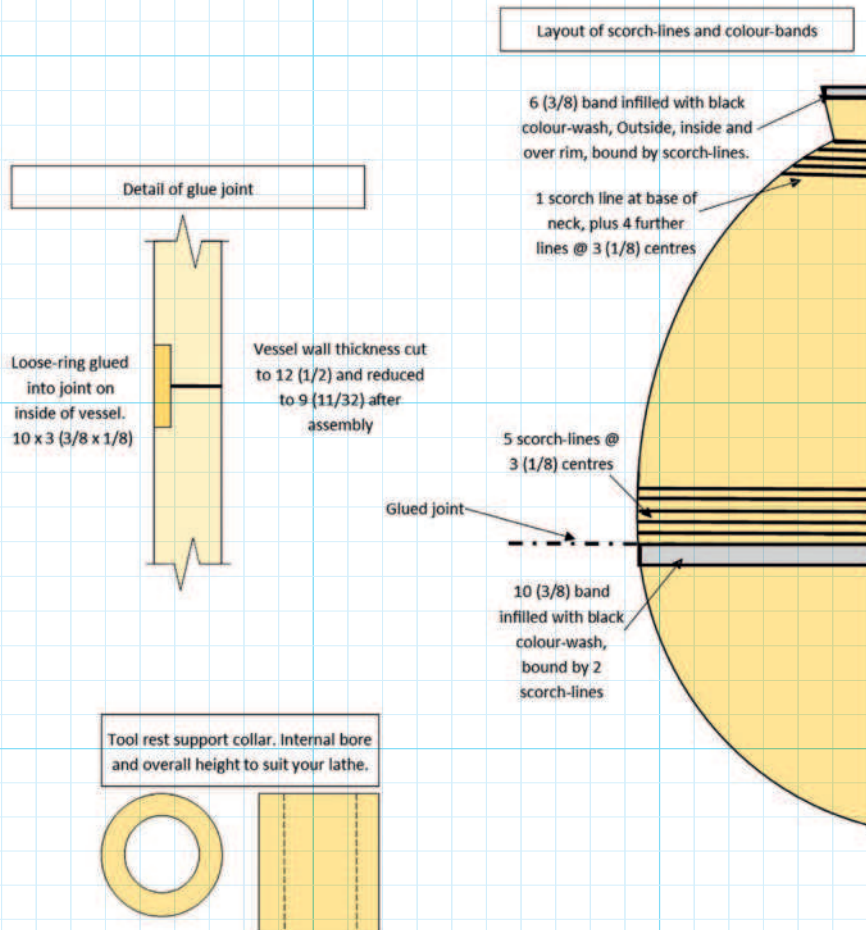
EQUIPMENT USED

Tools

- PPE and RPE
- Lathe with indexing/spindle lock facility
- 10cm faceplate
- Drive and live centres
- Chuck with 50mm and 90mm jaws (second chuck optional)
- Spindle roughing gouge
- Bowl gouge
- Spindle gouges
- Skew chisel
- Parting tool
- Jacobs chuck with 25mm Forstner bit (50mm optional)
- Hollowing tool (shear scraper)
- Thickness callipers and dividers
- Fine-toothed saw
- Steel rules
- Pyrography machine

Materials

- Vessel: leylandii 250 x 200 x 200mm
- Loose ring: oak 170 x 170 x 25mm
- Toolrest collar: see drawing (to suit your lathe)
- Scrap wood for reversing chucks
- Acrylic paint, black and white
- Clear satin lacquer
- Two-part epoxy adhesive
- Abrasives to 400 grit



Health & Safety

This is a fairly simple and quite safe project with the only area of any real concern being the finishing of the inside of the neck. While a small bowl gouge has been used here, if you feel at all uncertain about this, stick to a simpler method as mentioned in the text.

The parting-off of the central disk of oak to form the loose ring needs a careful approach. As mentioned, proceed slowly and listen to the sound that the tool makes – you'll soon know when to slow down!

Two-part epoxy is being used as an adhesive and it is important to note that this must not be used in the manner of PVA-based wood adhesive. Epoxy gives a strong joint when it has a small thickness of adhesive in the joint, so don't make your joint absolutely tight, and do ensure ample time for curing before continuing with the work.

1 In this project, a dry leylandii log has been used. As the end grain is of fairly low density, take the precaution of drilling a shallow hole for the drive centre to properly locate into, then mount the log between centres and start the lathe at slow speed, reducing it to a 175mm diameter cylinder. You can, of course, substitute other timbers if you wish.

2 Square-off the headstock end (the bottom of the vessel) and then cut a chuck tenon for your 50mm jaws. Measure the vessel's length (200mm) plus 7mm for the joint, along the cylinder, then square off the tailstock end (top of the vessel) and form a chuck tenon for your 90mm jaws.

3 Measuring from the headstock end, make pencil marks around the cylinder. The first at 75mm, then at 82mm to allow the 7mm for the joint. A third mark is also made at 192mm for the narrow point at the neck. This should leave 15mm of timber before the point at which you cut the chuck tenon in step 2.

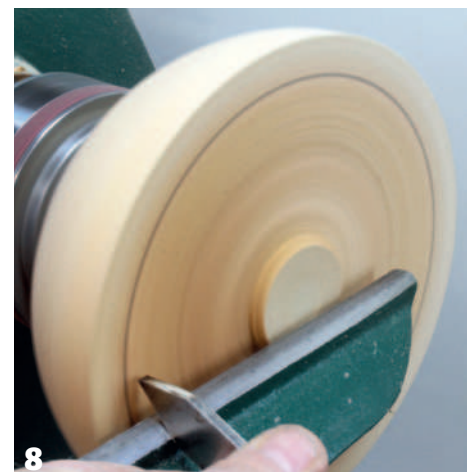
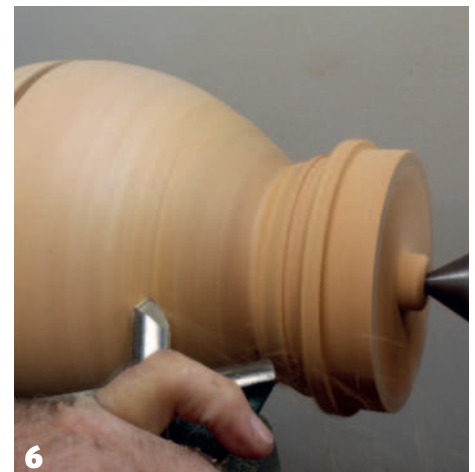
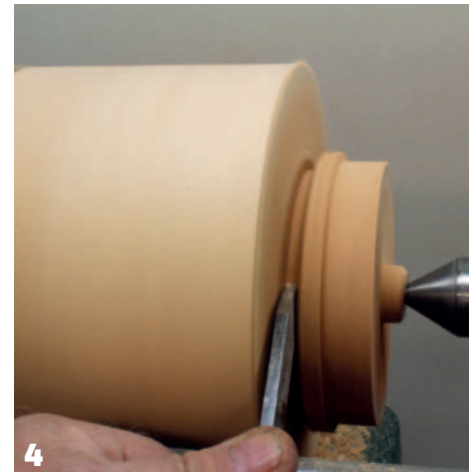
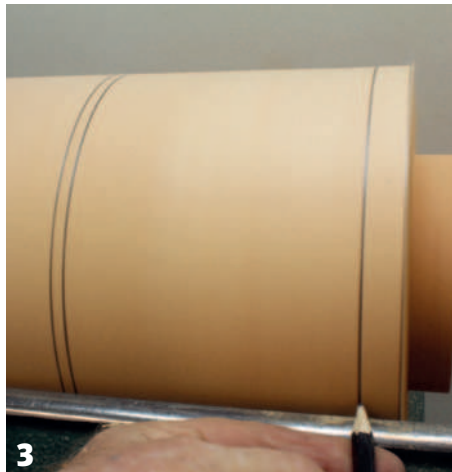
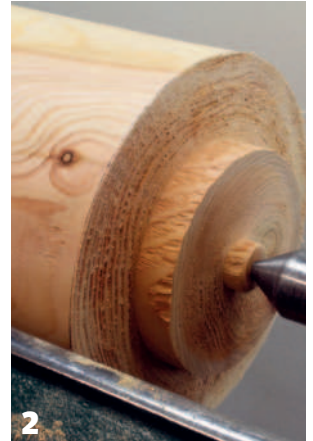
4 Make a shallow groove, about 1cm deep, central to the two lines marking the joint between the top and the bottom of the vessel, then cut immediately to the right of the neckline, to begin reducing the diameter of the neck's upstand and, for now, take it down to about 80mm, ensuring that you leave a shoulder on the chuck tenon for your chuck jaws to bed on to.

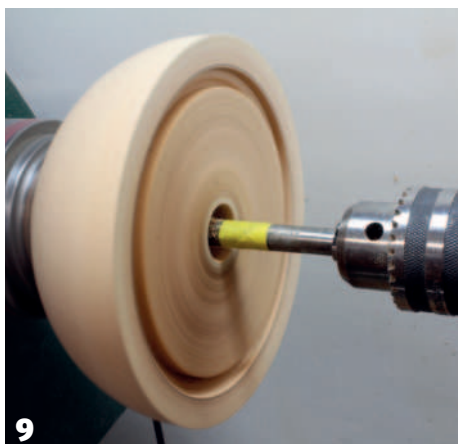
5 Use a bowl gouge or large spindle gouge to form the basic shape of the vessel. Note from the drawing that, from the joint down, the profile of the vessel forms the major part of a semi-circle, whereas from the joint upwards, it is semi-elliptical. Leave the vessel 4-5mm over diameter at all points – the finishing cuts will be done after the vessel has been cut apart, hollowed and glued back together.

6 When shaping the top of the vessel, cut right down into the neck area, but keeping to a minimum diameter of 80mm to maintain stability for the subsequent hollowing process.

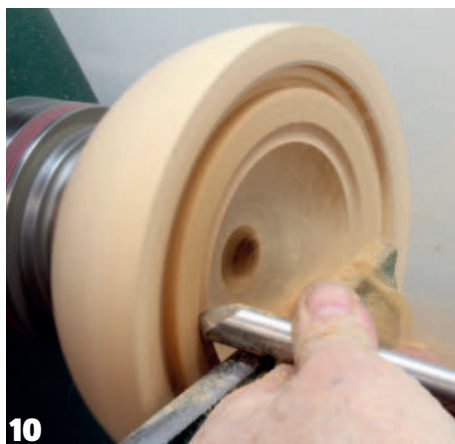
7 Returning to the shallow groove at the joint between top and bottom, cut the groove much deeper but try to avoid making it any wider at its opening. To avoid the risk of the parting tool binding in the cut, set the tip of the tool into the groove and swing the handle a few degrees to the left, cutting a centimetre or two deeper, then retract the parting tool, swing the handle a few degrees the other way and recommence cutting. Continue like this, cutting a groove which gives clearance for the tool, until you have a core of about 25mm, then remove the tailstock and saw the two pieces apart.

8 Approximately 12mm in from the outer edge, cut a shallow groove with a parting tool. The left-hand side of this groove indicates the overall internal diameter of the hollowed vessel, so when hollowing, keep all cuts to the right of this.

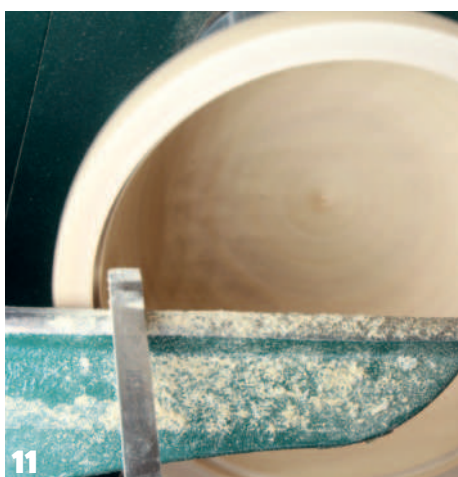




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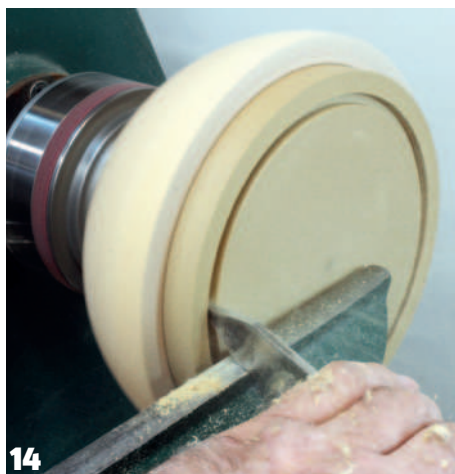
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9 Use a spindle gouge to clean off the centre stub where the vessel was sawn apart, then use a 25mm Forstner bit to bore a hole to a maximum depth of 65mm below the rim. A strip of masking tape around the shaft of the drill bit can act as a guide for this process.

10 Hollow the vessel, maintaining a fair, sweeping curve, until the centre of the pre-drilled hole is reached and cleaned away. These cuts will be against the flow of the grain, which is perfectly achievable with leylandii as long as the final cuts are made as light cuts with a freshly sharpened gouge. When complete, abrade to 400 grit.

11 On the inner face of the vessel wall, cut a shallow rebate for a loose ring to be set into. This groove should be about 3mm wide and 5mm deep and it will help the epoxy glue if the groove widens very slightly to give a loose fit at the rim, but a close, tight fit at the bottom of the groove.

12 Start turning the loose ring by mounting the oak on to a faceplate, skim off its face and reduce the edge to match the internal diameter at the bottom of the groove just cut. Mix up some quick-setting, two-part epoxy adhesive and gently smear it around the joint. Try to avoid applying so much adhesive such that it exudes upwards on to the rim – we will rely on this part of the joint filling up with adhesive when the two halves of the vessel are finally glued together.

13 With the disk from which the loose ring will be cut still on the lathe, use the tailstock to press it into place and leave in position until the adhesive is fully set.

14 Remove the assembly from the lathe, turn it around and mount the chuck on to the headstock spindle, then unscrew the faceplate. Starting about 20mm in from the outer edge, gently cut into the oak disk with a parting tool until the inner disk cuts away and drops into the void, leaving the ring of oak glued into the vessel. Take care here. Listen to the workpiece and proceed slowly – the sound will tell you when you are about to cut through.

15 Use a spindle gouge to clean up the rim of the oak ring so that it protrudes 5 or 6mm from the joint, then clean off the inner face until it is flush with the inner wall of the vessel. You can use the toe of a skew chisel held flat on the toolrest for this, or a spindle gouge or small bowl gouge. This process will also clean away any excess adhesive inside the vessel. Abrade to 400 grit.

16 Remove from the lathe and if you have two chucks, keep the workpiece in its chuck, using your second chuck, with the 90mm jaws, to mount the top of the vessel into it. If you have only one chuck you will need to remove the first workpiece and swap the jaws. Proceed as in step 8, cutting the shallow groove to establish the maximum internal diameter, then bore a central hole, as in step 9, to a maximum depth of 120mm, which places the bottom of the hole just inside the neck of the vessel.

17 Hollow the vessel, as in step 10, to a maximum depth of 100mm, and then abrade to 400-grit. At this point you can clean up the rim with a spindle gouge, leaving it angled inwards by just a degree or two, so that the best fit is around the outer edge of the joint and allowing a small cavity for a thickness of epoxy adhesive.

18 With hollowing and abrading finished, form a rebate on the rim for the oak ring to sit comfortably into. Don't make this a tight fit as epoxy adhesive needs sufficient room for a little thickness of glue. If you make a tight joint, most of the adhesive will be squeezed away, leaving a weak joint.

19 Apply adhesive to the joint, avoiding excessive amounts on the rim of the oak ring, as this would exude into the inside of the vessel and be impossible to clean away. Use plenty of adhesive elsewhere, especially on the rim of the vessel. Use the tailstock to press the two halves of the vessel together and leave it in position until the adhesive is cured. To ensure sufficient curing of the adhesive, this should be allowed to stand overnight.

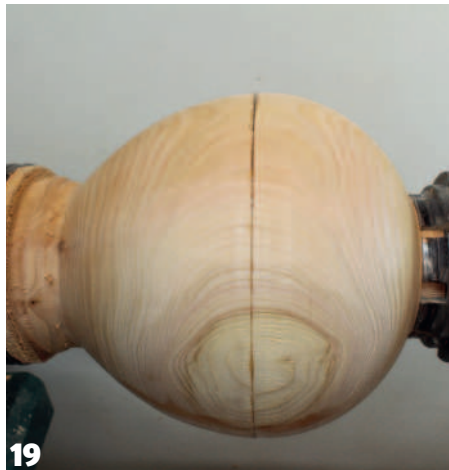
20 Remount the vessel on the lathe, with the bottom of it in the chuck, taking care that it is properly centred. Use a bowl gouge or large spindle gouge to refine the external shape from the joint upwards, removing just 2-3mm overall, except at the neck where it can now be cut to the dimensions and shape shown in the drawings.

21 Leaving a 15mm upstand on the neck, start parting off between centres, then retract the tailstock to complete the removal of the chuck tenon. If this causes concern due to vibration, saw the remaining stub of the tenon away from the vessel, then clean up the top of the neck, using light cuts with a spindle gouge.

22 Drill down through the neck, into the void, using a 50mm Forstner bit, or the largest that you have available. Proceed slowly to avoid excessive vibration (the bit must be sharp) and especially over the last few millimetres of depth, to avoid break-out.

23 Refine the inner shape of the neck down to a thickness of about 3mm. Use whatever tool you feel comfortable with. A small gouge, the toe of a skew chisel or a hollowing tool will work well and you might have to support the neck gently to absorb vibration.

24 Inside the neck you are likely to have a harsh line between the hollowing of the neck and the inside of the vessel, so blend these together with a teardrop cutter used in scraping mode. Again, slow, gentle cuts will be necessary and supporting the neck will also help.





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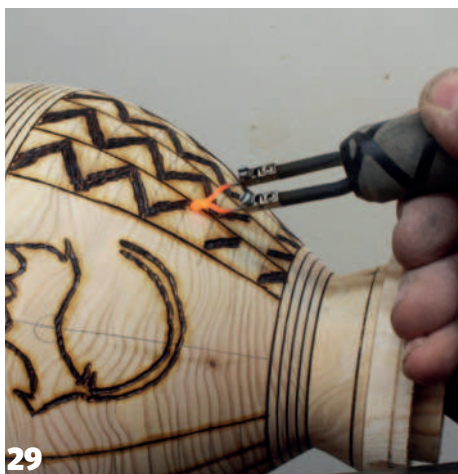
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25 With the top half of the vessel finished, clean up the lower half, again removing no more than a few millimetres and getting as close to the chuck as you feel is safe. Abrade all surfaces to 400 grit, including just into the safely accessible parts of the inside of the neck.

26 Using a scrap of wood, make a bung which fits over your live centre and snugly into the neck of the vessel. Ensure the bung has a shoulder which makes good contact with the rim of the neck; this will avoid the bung's taper bursting the neck when it is used to support the vessel for the decorating stage.

27 Mark out and scorch the lines as shown in the drawing. Near the neck it will be necessary to use something like strips of plastic laminate rather than a scorching wire, but use two thicknesses of laminate to get heavy scorch lines. Also, make a heavy scorch line inside the neck, about 5mm down from the rim – you will need to swing the toolrest right around for this procedure.

28 Make a simple collar which fits on the shaft of your toolrest so that the toolrest sits at centre-height and remains there, allowing the toolrest to swing around the curve of the vessel when drawing pencil lines. Use the lathe's spindle lock/index facility to mark six pencil lines at equal distances, from the central band of scorch lines up to the lines near the neck. Three of these panels will have the ibex design, while the others will have the zigzag design burnt into them.

29 Mark out the designs, using as much free-expression as you wish. The vessels were decorated heavily, and quite crudely, so use a high heat setting and strong lines. Avoid perfectly clear, precise lines as this just does not suit the subject.

30 Mix up some white acrylic paint with water in a 1:4 ratio to form a white colour wash. Try a few brush strokes on a piece of scrap wood and adjust the mixture if you feel the need. Wash the colour over the whole of the upper part of the vessel, with the exception of the narrow bands, one just below the central glue line and the other at the top of the neck. These can be washed with black mixed in the same way as the white. Set aside to dry.

31 After an hour or so the colour wash will have dried and most of it will have been absorbed into the wood, leaving a white/black blush on the surface. Take the bung that you made for then neck and place it in a chuck, then reverse-turn the bottom of the vessel, ensuring it is properly centred, cleaning up the lower vessel wall and establishing a 40mm diameter bottom face. Abrade from the black band down and then apply the white colour wash. Remove the final stub/cone at the centre by hand and abrade.

32 Apply several light coats of satin acrylic lacquer. Do not abrade the first couple of coats, but abrade lightly after full surface coverage has been achieved, to avoid abrading any of the colour wash. ●

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BE INSPIRED, BE CREATIVE

Coloured box

Ian Woodford creates a finial lidded box



PHOTOGRAPHS BY IAN WOODFORD

Most turners, at some stage during their time at the lathe, have made a box or two and a few have become very proficient and developed their own signature styles. The number of shapes/styles is infinite and the ways to fit the lid are many, but we all have our own preference. The part many turners find difficult and frustrating is getting a good-fitting lid as accuracy is

essential and I'll explain my method later. It is important to use well-seasoned wood to reduce the amount of movement to an absolute minimum.

This box has an inset lid and I wanted to colour it and also achieve a 'distressed' look. The wood used is maple with a boxwood finial.

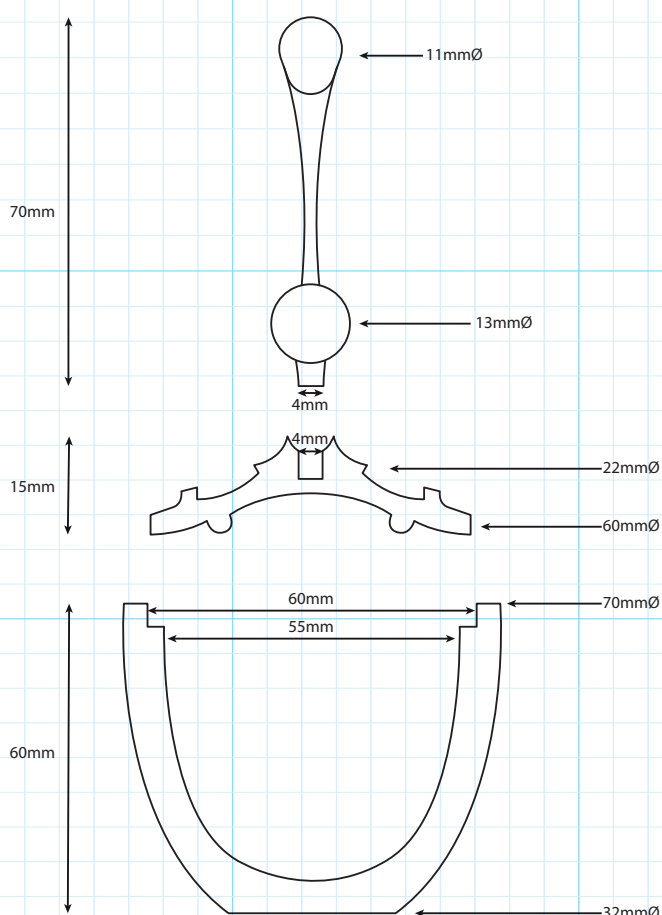
EQUIPMENT USED

Tools

- Spindle roughing gouge 1in
- Spindle gouge 3/8in
- Bowl gouge 1/4in
- Narrow beading tool
- Negative rake scraper
- Dust mask
- 4-jaw chuck
- The Decorating Elf texturing tool
- Various grits from 120 to 600
- Airbrush and colours

Materials

- Maple 6in x 3in straight grain
- Boxwood 4in x 1/2in straight grain



1 The maple blank is mounted between centres and turned to round using a spindle roughing gouge. Note that I'm wearing good head protection against dust and any pieces of timber that may fly off.

2 A spigot has been turned at each end and then the blank is mounted in a chuck. A 1 1/2in long section is now parted off. Make the cut as deep as you feel safe to and then, with the lathe switched off, complete the cut with a handsaw. This portion will form the lid. The remaining section will form the main box.

3 The basic outside shape has been formed using a spindle gouge and the photo shows the inside being turned using a bowl gouge. The inside base can be finished if necessary using a negative rake scraper.

4 Sand the inside and finish with 400 grit. When sanding the inside I invariably hold my right wrist with my left hand as this helps in making me feel more in control and safer.





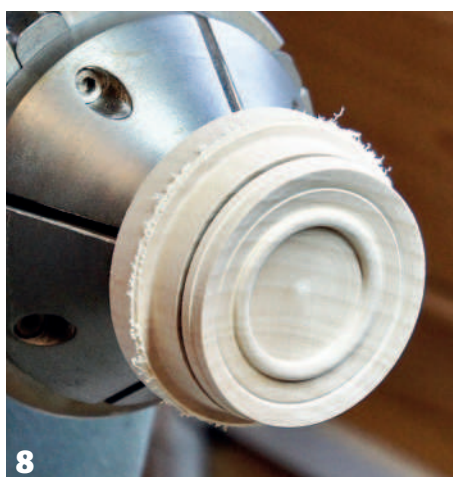
5 The outside shape has been finalised and sanded while an inside recess has been turned using a skew chisel on its side. This recess will hold the lid.



6 The box section has been parted off leaving wood at the bottom so it can be re-chucked if necessary. A spigot has been formed on the remaining wood in the chuck so that the box section can be jam chucked. With tailstock support, start forming beads on the box using the narrow beading tool. Do this carefully as too much pressure can spoil the beads.



7 All the beads have been formed and a very gentle sanding with 600 grit has removed any small splinters between the beads that may have been made during the process. Remove the box and jam chuck from the lathe.



8 Mount the end section that was originally removed from the blank (Step 2) into the chuck and start to form the underside of the lid. I form a small bead that will act as a recessed chucking point and also cut a groove with a skew purely for decoration. Carefully form the edge of the disc so that it is slightly larger than the recess in the main box section. Now part the lid off but leave enough thickness to form the top of the lid. The final lid diameter will be determined after any wood movement.



9 Re-chuck the lid and start to form the top. I leave a small raised section in the centre that will have some decorative grooving applied.



10 Fix a 4mm drill bit in a Jacobs chuck and mount this in the tailstock. Drill a hole in the centre of the lid but be careful not to go all the way through.



11 Using the Decorating Elf tool I apply some texture to both raised areas as seen in the photo. This is not necessary but I think this enhances the final 'distressed' look when colouring is applied.



12 Mount the boxwood blank into your chuck and, with tailstock support, rough to round with your spindle roughing gouge. Using a spindle gouge turn the blank to the shape in the diagram. I have taken the final shape devised by Keith Burns (who sadly died recently) but have turned the main stem with a slight curve. Sand to 400 grit and part off. The diameter of the stem at the headstock side is turned to 4mm to act as the mounting tenon for the finial into the box top.

13 The end of the finial now needs to be shaped and I do this by mounting a homemade sanding disc (180 grit) in my chuck.

14 The photo shows a gentle curve being applied to the finial top.

15 Remount the box and, using a fine brush, apply colour of your choice to the top before parting off at the base.

16 Using waste wood from the original blank turn a spigot so the box can be jam chucked.

17 With initial tailstock support, finish the base of the box and sand to 400 grit.

18 This shows an airbrush being used to apply gentle colouring to the rest of the outside.

19 Gently apply black colouring to the bottom half. This is best done by starting at the base and working up the side, gradually taking the airbrush further away from the box. This enables the colours to merge nicely.

20 When the colours are dry I use some 400 wire wool to soften the colour merge and help to give the desired distressed look.

Leave the lid for a couple of days before turning/sanding the final diameter to a nice fit in the box recess. I do this because wood will move slightly when turned and make a difficult fit.

All turning and colouring is now complete and all pieces can be sprayed with satin lacquer before gluing the finial in place.

21 The completed box. ●



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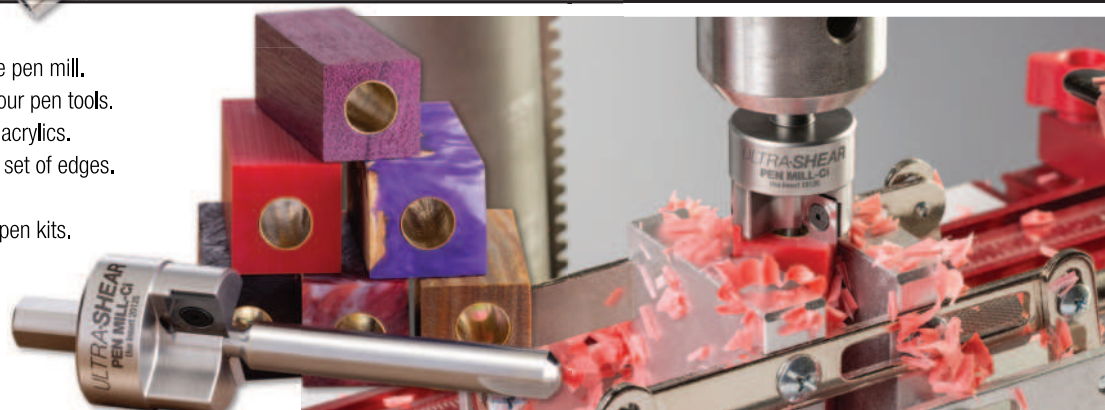


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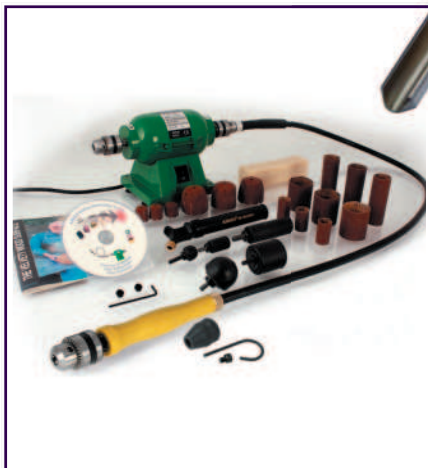
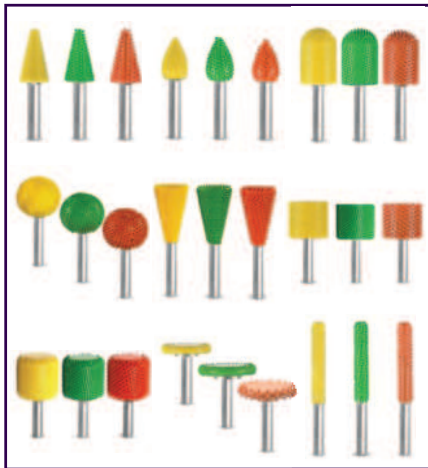
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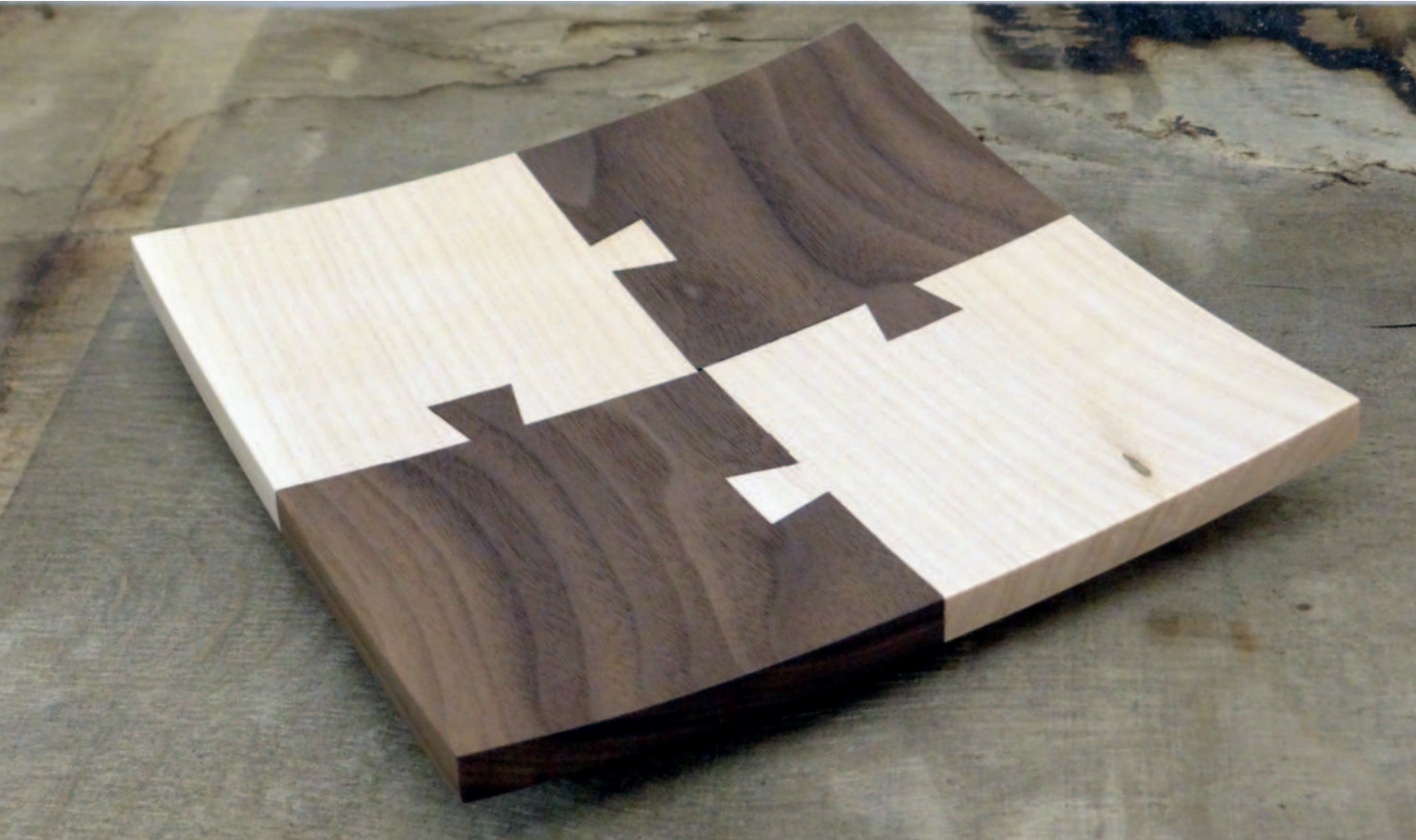
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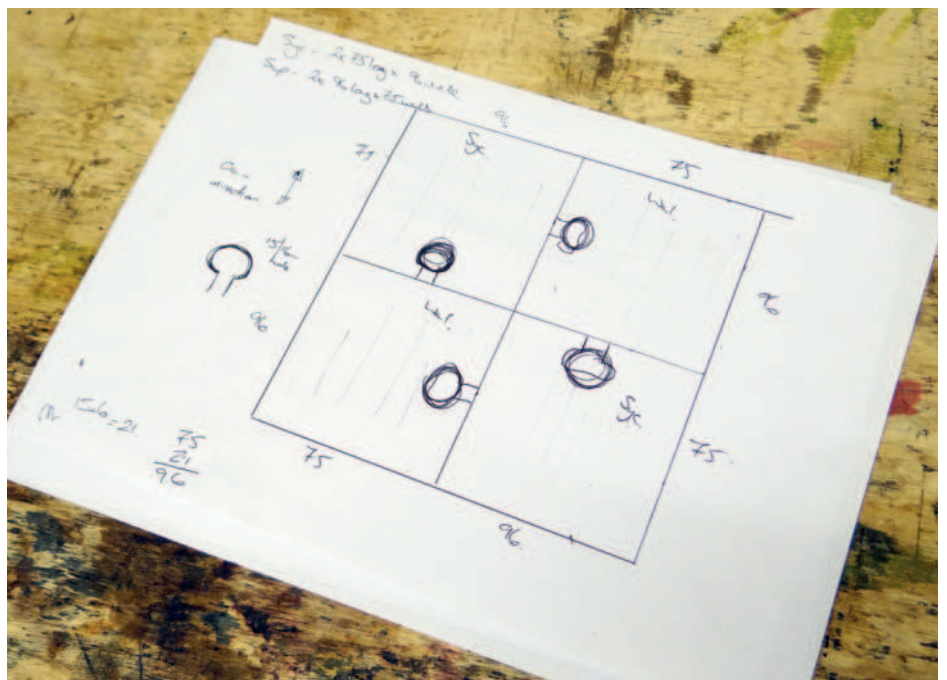
Jigsaw bowl

This month, Richard Findley's Editor's Challenge is to use a jigsaw pattern in a project



During our monthly chat, the Editor mentioned having been playing a lot of board games and puzzles over the lockdown period, and it brought up the idea of using a jigsaw in turning in some way. So, my challenge this month is to make something using a jigsaw pattern.

I feel like I've seen segmented work that has included a jigsaw pattern, and even left a piece out as part of the design, although I couldn't put a name to the turner who made it. I don't want to go down the traditional segmented route, so I'm thinking of a small, shallow bowl or platter made of four sections, each interconnected with the familiar jigsaw links. I think making it a square bowl might give it a more easily recognisable jigsaw look too. After making a few sketches I have a good idea of what I will make. I have a few concerns over the strength of the cross-grain sections, but once glued together as a solid piece, I think they should be fine. Achieving tight-fitting joints will be the biggest challenge.



Initial sketch of the jigsaw bowl

PHOTOGRAPHY BY RICHARD FINDLEY

Making a start

I plan to use 75mm squares of walnut and sycamore – a winning combination if ever there was one – to produce a roughly 150mm square bowl. After sorting through my timber pile I find suitable sections of timber and plane them to 35mm thick, which I think should be enough to produce a pleasing curve in a square bowl.

After playing around with some offcuts of walnut, I decide the easiest way to achieve the familiar jigsaw link will be to drill a hole and cut into it to form the hollow, then, using techniques similar to cutting dovetails, I can 'draw' around the hole with a knife and cut out the 'tail' (if we're using dovetailing terminology) part of the jigsaw, paring it to fit.

I make up a sample, which isn't perfect but shows great promise for my idea.



Walnut sample to test the



Marking the shape with a knife



Marked out and ready to cut



Cutting out on the bandsaw

The squares each need to be 75mm x 96mm, which allows for the protruding part of the jigsaw. I number the parts and mark out centres and positions of the pins and tails using a mortise gauge. I use a 15mm lip and spur drill in the pillar drill, which cuts lovely

clean holes, I then cut an 8mm-wide space into the hole to form the jigsaw shape. Sitting squares of wood on top of each other and using a knife, I mark the tail on the next piece and take it to the bandsaw to rough it out.

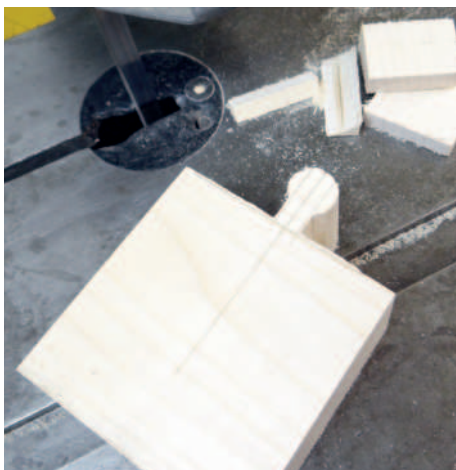
Paring

With the shapes roughed out, I use an old technique, which some may see as a cheat for dovetail making. I clamp a square piece of wood in place, directly over the scored line of the shoulder, and pare down, using the wood as a guide to achieve a dead square and clean cut. I do this on the

shoulders and on the stem of the jigsaw tail. For the rounded part of the tail, I use a carving gouge with a similar shape to the diameter of the drill and pare down until I am happy with the look of it all. I offer the two halves of the jigsaw together and, although I don't fit it fully – there is great

potential for it jamming and me not being able to get it apart – but partially, I'm happy with this.

I repeat the process on all four of the jigsaw details and spend a very enjoyable morning cutting and paring the joints until it's time for assembly.



Jigsaw part rough-cut on the bandsaw



Paring with a carving gouge



The parts look promising partly fitted together

Disaster!

Satisfied that everything seems to be lining up well and the jigsaw parts are all beginning to fit together, I am ready to add some glue and assemble my bowl blank. I place a piece of brown paper on my bench to avoid spreading glue everywhere and set up with my glue and brush.

I spread glue on the first joint and tap it together with my mallet. I am very pleased with how it goes, if they all go this well, it'll be a good day. As I tap the second together the cross-grain tail snaps clean off. You can imagine some of the choice words that come from my mouth at this point. After a look at it, I decide that, as long as the others go together well, this should glue back together as it is a break along the grain. Unfortunately, as I tap the next joint together, the entire section of sycamore splits along the grain. In some sort of desperate attempt to get something from my morning's labours, I try the last joint, which snaps off along the grain, just as the second had. What a disaster!

At this point, I have some decisions to make. Do I spend another half day repeating the process, making the joints much looser and hope it works the second time? With several deadlines looming, I don't have time to deal with another failure, so I wonder if there's another way? Ringing the Editor, cap in hand and saying 'sorry, I failed at the challenge' isn't an option... yet. So I need a Plan B.

Plan B

I run through alternatives that use the same principle but stand a better chance of success. I have been using dovetailing techniques so far, maybe if I use a dovetail router cutter, which will produce regular and pretty reliable shapes, I can make the same bowl, but use dovetails as the joining feature rather than the jigsaw links. I like the idea, but don't have a dovetail cutter. I call round to the joiner four doors down in the block of workshops in which I am based and ask if he has one (socially distanced, of course). If he does, then I have my plan B, if not, it's back to the drawing board. He rummages around in a toolbox and brings out a couple of sets of router cutters, each having at least one of the cutters I need. He kindly lends them to me and I am ready to begin Plan B.

Dovetails

I cut more squares of sycamore and walnut, opting for a slightly thinner 28mm this time. The dovetails only protrude by 12mm (limited by the cutter design), so my new blanks are 75mm x 87mm.

I've never actually cut dovetails on a router, but I know the principle, so this will be another first.

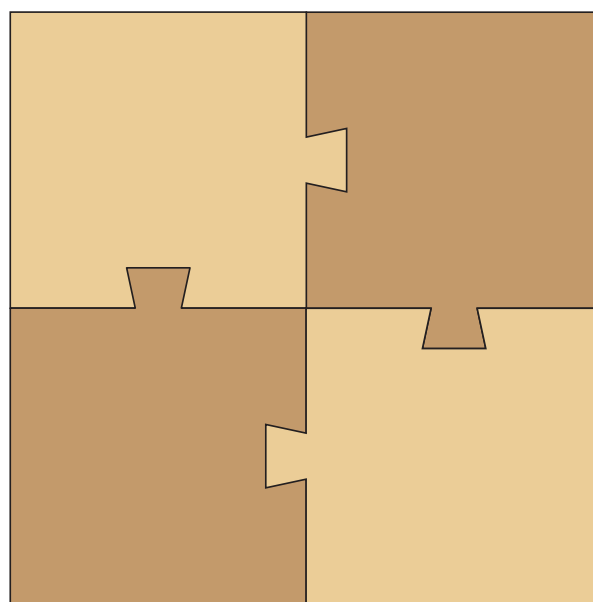
The main thing to know about routing dovetails is that you shouldn't just cut straight through with the cutter, as it is a heavy cut to make in one pass. Unlike straight or even chamfer cutters, you can't take several passes as the dovetail shape doesn't allow it, so it has to be done in one hit. To make it easier on the router and the cutter, a channel is cut with a straight cutter first, so it has less material to remove and there is less stress on both the cutter and the wood. I do this in the centre of the space in between the pins and each side of the tails, before swapping to the dovetail cutter.

My router table set-up is fairly rudimentary, the fence is planed softwood, clamped to the table and I use a square of plywood as a pusher – it has lots of contact with both the fence and the work so is very stable and offers full support to the work throughout the cut. I feel comfortable doing this, but you might have a different set-up you could use.

The borrowed tool is not a premium cutter, coming from a mixed set of commonly used router bits. As I work it produces quite a bit of smoke, even after I hone the carbide tips with a diamond file, but the surfaces it produces are clean and smooth, if a little charred.



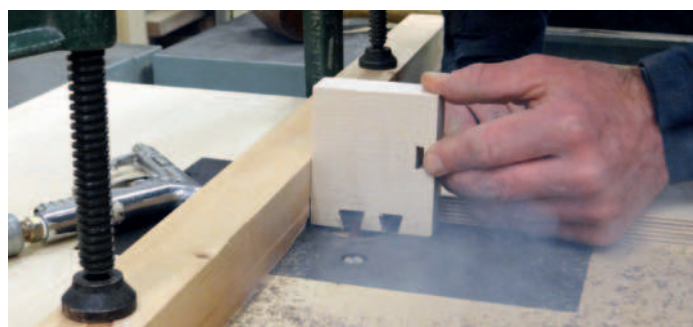
What a disaster!



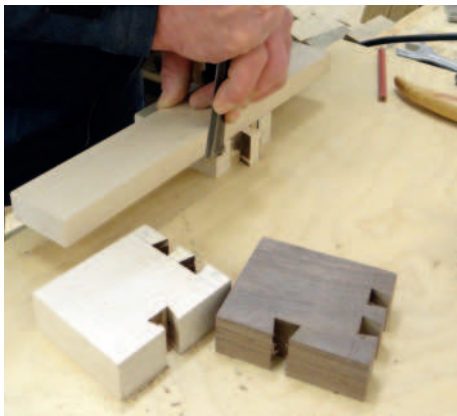
Not to scale: Grain runs top to bottom on all pieces. Walnut sections are 87mm long and 75mm wide, Sycamore sections are 75mm long and 87mm wide to allow for dovetails



New blanks with a fresh drawing, ready for



Routing the dovetails produces a good shape and a lot of



Paring the waste away



Ready for glue-up



One of the sycamore tails has a chip, but it shouldn't be a problem

I cut the pin holes first so I can adjust the fit of the tails and get them perfect. I use my marking knife to mark the exact positions of the tails and make my initial cut slightly wide of the mark, allowing me to adjust my fence and creep up to the perfect fit. Once I am satisfied with the first, I cut the rest of the tails.

I remove the waste wood on either side of the tails on the

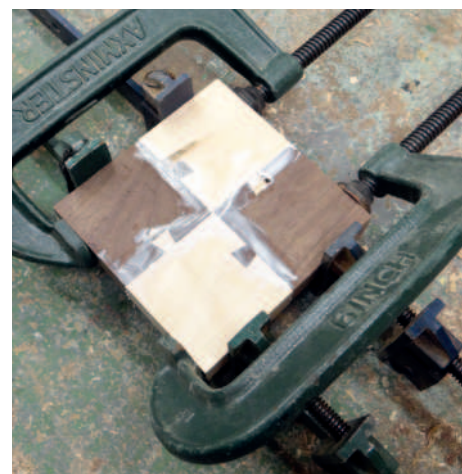
bandsaw and pare it flat and square using the guide block technique I had used earlier. As I was routing the tails, one of the sycamore blocks chipped out – there must have been a curl in the grain causing a weakness or short grain – but I don't think this should cause a problem as I can align this to the inside of the bowl and it should turn away.

Glue-up

Glue-ups are always a little stressful, especially after my earlier failure. This time though, the joints slip together much easier and I need no more than a light tap with my mallet to close up the last one. The tightrope I'm walking here is between joints that are very tight and need persuading to go together with a mallet – but also risk splitting the wood, as I'd found earlier – and being too loose and gappy. These dovetails fall slightly on the looser side of this imaginary line, so I decide, having liberally glued every surface, that I will add some cramps while the glue cures. The cramps do squeeze out a little glue, proving it is the right decision.



Gluing up the joints



In cramps to dry

Turning

Having been left to dry overnight, the dovetailed blank is now ready to turn. I use a faceplate ring for my initial mounting, ensuring there is a screw into each of the four quadrants that make up the blank. I am confident that the blank will hold together perfectly well, but a little extra insurance never hurt anyone. The screws are 4mm x 20mm (3/4, No.8 in old money) so only penetrate around 10mm into the bowl. Too long and I will struggle to remove the marks from the surface of my bowl.

I have turned a few square bowls/platters before, but not many. Having turned the chucking tenon first, which I am pleased to see includes a good portion of each quarter of the bowl, reassuring me that it will help to support the joints, I make a few exploratory cuts to see which produces the cleanest surface. A bevel



Fixing the faceplate ring for initial mounting

rubbing push cut, from the centre out to the rim, works better than a pull cut, but a shearing cut, using the wing of the tool, the flute closed and the handle low,



Using a shearing cut with my bowl gouge to produce the outer shape

produces a very fine finish and is more controllable than the push cut, especially over the corners, where bevel support is literally hit and miss.

Once I am happy with the curve I have turned, I need to sand. I have found sanding square bowls to be hazardous at best, but with this being so small, it is likely to be especially difficult to sand with the lathe running. I power

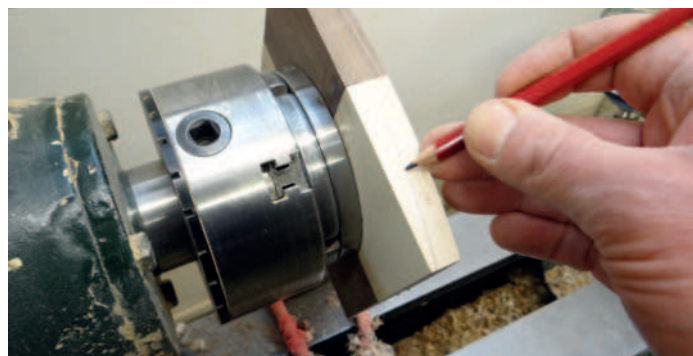
sand using a 75mm arbour in my cranked drill, which is easy to use one-handed. The lathe is off and I use my left hand to hold the chuck and gently turn the lathe by hand as I work over the surface with 240 and 320 grits,

finishing by hand with 400 grit wrapped around a cork block.

Before mounting the bowl by its tenon, I finger-rule a line around 10mm from the surface I have just turned. This will guide me as I turn the inside.



Sanding the bowl



Finger-ruling the shape of the

Turning the inside

With the bowl mounted in the chuck, I can turn the inside of the bowl. This has to be done with a push cut, starting in fresh air and smoothly working into solid wood. My aim is to produce a bowl with an even edge thickness, so I need good tool control. The line I had drawn is visible amid the blur of the edge and gives me a guide to work to.

I take my time as I cut into the bowl, often stopping the lathe to check my progress. I am pleased to see that there is no break-out on the edges and I am getting close to my line. I leave the

bulk of wood in the centre while I get the rim right as it offers stability to the blank, which is much needed with these early cuts. Only once I am satisfied that the curve of the edge is even and smooth do I move further into the bowl. Once the wings are turned, it is much more like turning a standard round bowl, but the transition between the corners and the solid wood needs to be smooth otherwise there is a visible line or ridge where the bowl gouge suddenly finds full bevel support, so a smooth cutting action is vital.



First cuts into the bowl



Regular checks on progress are

Cutting the centre is no less important though, as the curve needs to continue right to the centre, keeping the even wall thickness throughout and avoiding any ridges or waves in the surface. Square plates and bowls are quite minimalist, so there is nowhere to hide poor turning, so I take my time as I work to the centre.

As before, I power sand with the lathe stationary, working evenly over the surface. I do one pass under power, just over the solid part of the bowl with a 320 grit before, once again turning off the lathe and hand sanding with 400 grit wrapped around a cork block.

With the inside of the bowl finished, I turn my attention to the edge. There is no break-out, but the surface still shows saw cuts from when I originally prepared the blocks of wood, so I work through the grits from 180 to 400, again wrapped around my trusty cork block and taking great care to keep the edges crisp and not to round them over.



Turning the centre of the bowl



Sanding the inside



Sanding the edges to keep them

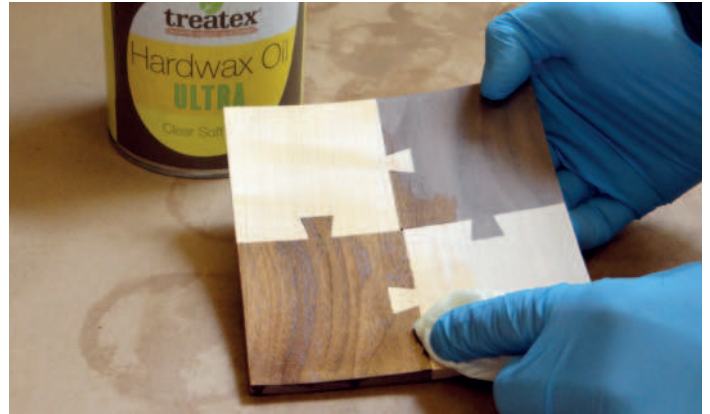
Bottoms up!

The final stage in the turning is to remove the chucking tenon and turn it into a small foot. I mount a block of wood in the chuck and pad it out with several layers of paper towel, bring up the tailstock and sandwich the bowl between the pad and the live centre. I use my 10mm spindle gouge to reduce the diameter of the foot and blend it

into the curve of the bowl. I hand sand to the same 400 grit standard as the rest of the bowl and remove the bowl from the lathe. There is a tiny pip that needs sanding away from the bottom of the foot and it is ready for oil. I apply four coats of my favourite hardwax oil and give it a gentle buff with my dome brush and it is finished.



Turning the chucking tenon into a small foot



The first coat of oil goes on to the

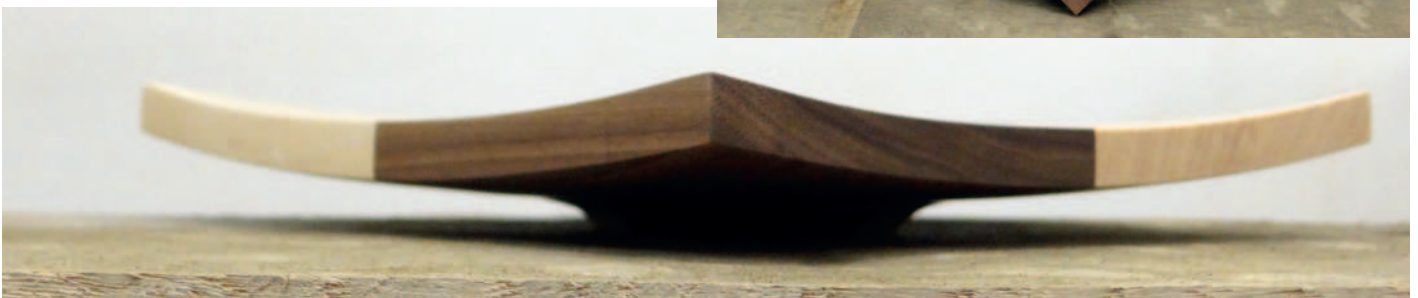
Conclusion

This has been a rollercoaster of a project and a second consecutive challenge that has had some sort of failure – I hope I'm not making a habit of it. Although the original design didn't work, I think it still could, given more time and patience. Upon reflection, some of the short-grain issues could be bypassed by using long-grain jigsaw inserts, a little like butterflies or bow-ties are used to stabilise cracks in wood, but more like a cartoon dog's bone, to form the jigsaw links. These could be in a third contrasting or complementary timber. If you have a go with more success than me, do send in pictures.

Did I meet the brief and turn something jigsaw inspired? Probably not. Is the end result pretty cool? Yes, I think it is. You can email the editor with your thoughts on the matter. ●



The finished bowl



Side profile showing the pleasing curve and small foot



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Shape up!

In part 2 of his series, Tony Nicol discusses the appreciation and development of shape and form



Examples of beaker, vase, enclosed and hollow forms

In part 1, I spent a little time defining shape and form as I intended to apply them in these articles. As a brief refresher, I am approaching these from a visual arts perspective using the term shape to refer to the outer profile of the vessel, and form to the development of the inner profile, its relationship to the shape, and to the critical effect this has on how the finished vessel will be appreciated.

This led me to a consideration of common failings of shape and form in open bowls and dishes. In this second part I am going to look at vases, beakers semi-enclosed vessels and hollow forms similar to those shown in the main illustration on this page.

I trust it will become evident that although I have considered the two classes of objects separately, the importance of making the interior and exterior profiles complementary is just as acute for both. Wall and base thickness should be arrived at after due consideration of function and

aesthetic appeal, remembering that these will have a significant impact on the weight of the vessel and for touch and feel as well as sight.

To this end, I introduced the term 'heft', and it is equally important here. (Arguably, for hollow forms where there is little or no visibility of the interior, it becomes even more important.) Take your time, stop frequently, take the work off the lathe, handle it and view it from different aspects. Does the weight suit the form and function? Does it feel heavy or fragile, and is this appropriate? Don't wait too long to start considering these issues.

Some definitions

The dictionary definitions of beakers and vases are none too enlightening, so a few words on these would seem to be appropriate. Both terms describe containers, and in the laboratory sense a beaker is usually considered to be a cylindrical vessel – although just to muddy

the waters I did find a reference noting that Chinese beaker vases are trumpet shaped with flared tops. To cap it all, the American usage also seems to apply the term beaker to goblets, so make of that what you will. Suffice to say that for the purposes of this article I will treat beakers as straight-sided cylindrical vessels. Vases, on the other hand, come in a great variety of shapes and sizes but it seems appropriate to note that as a matter of general practicality they are normally at least as tall as they are wide, and usually significantly more so.

A closed or semi-enclosed vessel is a bowl where the walls curve inwards rather than being straight sided or flaring outwards. This means that in contrast to a beaker, vase or open bowl, the opening has become smaller than the internal diameter. If the inward curve continues to the point where the opening becomes so restricted that it severely limits the ability to observe the interior, then we have arrived at a hollow form.

◀ Beakers

I find that beakers are surprisingly popular, in spite of – or perhaps because of – their relative austerity of structure. In the simplest sense, it is a flat-bottomed vessel with straight sides. Little to go wrong, one might think. To add a bit of interest I usually texture the outside, to provide a welcome bit of visual and tactile contrast – as can be seen in picture 1.

The shape is simplicity itself, but this example illustrates a couple of issues. Texturing has to be carried out before hollowing because inevitably, the walls distort slightly as mass is removed and tension is released and this would make the pattern noticeably uneven. Even with the simple texturing applied here – repeated application of a point tool, and tidied with a wire brush to provide a coarsely abraded surface – it is obvious to the eye that insufficient care was taken to straighten the blank and this has led to a pinched waist effect. The texturing has also failed to conceal a careless bit of torn grain, and this now shows up as a pale band – coincidentally at the same level as



1: Beaker in wych elm

the pinched waist. Once seen, they cannot be ignored. Simple shapes can be turned out quickly, so there is no benefit in paying less attention to detail at any stage.

In section [picture 2], the thin wall works well, possibly because of the association of beakers with glass laboratory equipment, but a slightly thicker wall would also be perfectly acceptable. The junction of wall and base creates a well-defined elbow on the inside, but for a beaker this is a perfectly sound and practicable transition. Sharp changes of angle create stress, so



2: Section through beaker

the wall and base are blended to avoid the creation of a knife sharp near 90° corner – which would, in any case, be difficult to finish well without creating sanding wells on wall or base. Unfortunately, in this case, a persistent blemish just above the floor was sanded out and this has marred the constant wall thickness, particularly noticeable because of the coincidence with the pinched waist mentioned above. But on the other hand, if the beaker had not been sectioned this would very probably not have been noticeable.

Vases

Vases are typically used for supporting and presenting items such as flowers for display, as well as being objects of artistic merit in their own right. It follows, then, that the vase must not be too wide or the walls too short, otherwise the support function will be compromised and the contents will sprawl rather than stand erect. This constrains the design to forms that are tall and narrow, rather than short and wide. Stability becomes an issue, therefore, and some compromises have to be made. After all, these are wooden vessels for dry materials and will not have the benefit of added water to ballast them.

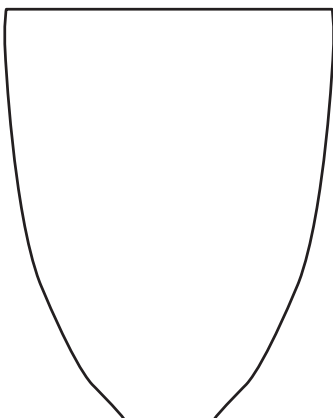
A magazine article can only cover a very limited sample of the infinite variety of possible vase shapes so I have sketched just a few examples to discuss.

In figure 2A, the vase is nicely flared from the base with a generous opening, rather in the manner of the bowl of a goblet. The initial curvature is mainly concentrated on the lower third of the shape, blending out towards the rim but never becoming flat. In figure 2B, the curvature this time is most pronounced

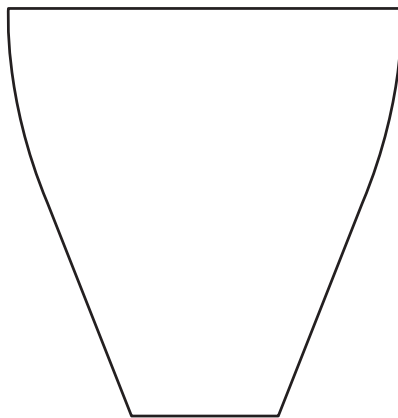
in the upper third of the shape and less noticeable towards the base. The shape is reminiscent of a water pitcher (hydria) with the top cut off. In figure 2C, the curvature is concentrated at the half-height of the vase. These are all acceptable shapes, but I hope you will agree that 2C is the least visually interesting. As discussed in the first article, keep the curves smooth and flowing and avoid flats.

Because of the narrow foot, however, all three of these examples tend toward the decorative, rather than the functional. They will overbalance easily if the weights and moments of the contents aren't equally distributed around the rim to keep them balanced. We might improve the stability by widening the base, narrowing the opening, or some combination of the two.

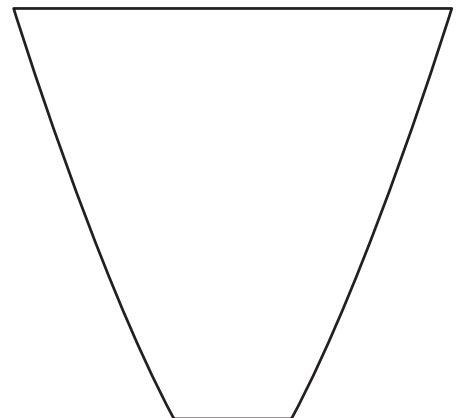
We might also consider using complex curves to improve the stability. In figure 2D, the base has been widened but the initial outward flare has been retained. It then curves back in on itself to keep the contents and the bulk of their mass over the base, before flaring out again in an inviting and generous manner.



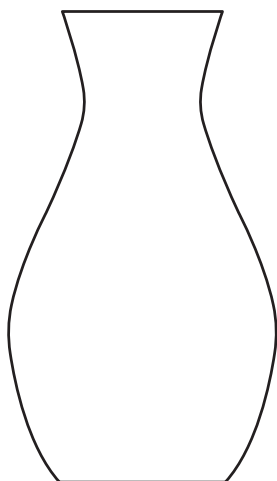
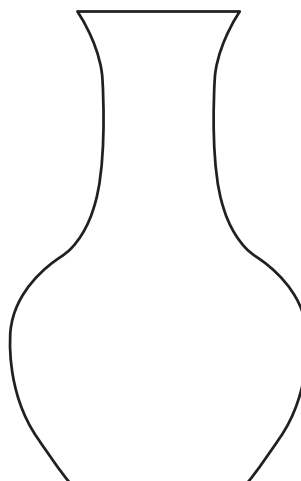
2A: Goblet-style vase



2B: Pitcher-style vase



2C: Balanced curvature vase

**2D: Carafe-style vase****2E: Claret jug-style vase**

The result is a carafe shape. Stability is excellent, and the complex curves are a modest challenge for the turner, particularly with regard to the hollowing to make sure that the inner profile is sympathetic to the outer.

As with the preceding examples, we can also experiment with the visual weight of this vase. In figure 2E, the S-shaped curve has been amended to lower the centre of gravity of the work while retaining the flared rim. The result begins to resemble a claret jug shape, but with the neck providing the handhold in lieu of a handle. Now, however, it is no longer possible to observe the whole of the inner profile from the opening, and we might consider turning the vase in two parts and jointing them together, or making the transition to blind, hollow turning.

As already mentioned, stability will be a key consideration in the design of any vase, and one thing we can do to improve this is to leave a little more weight in the base. Be careful not to overdo this, however, or the proportions of the vase will be wrong and it will begin to feel reminiscent of a roly-poly toy – always trying to stand upright because of the dead weight in the base.

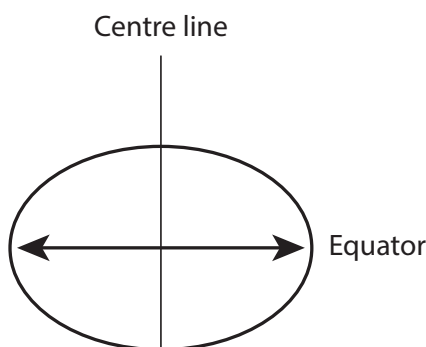
In general, thinner walls are better than thick and once again it is important that the inner profile complements the outer – for at the very least as far as the fingers can reach from the rim.

Finally, turning vases will involve having to extend the cutting tool appreciably further over the rest than you might have been used to. Please refer to the sidebar for some important guidelines.

Semi-enclosed vessels and hollow forms

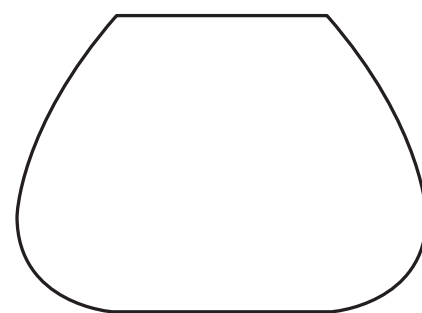
As mentioned earlier, the shape defects discussed in the first article are equally pertinent here, in relation to blending the curves and avoiding flats and stepped changes. In the enclosed form, the wall will rise outward from the base or foot (if it has one) to the widest point of the vessel, then turn inwards again to meet the rim of the opening. In the simplest form, we might end up with something like the shape shown in figure 3A. In geometric terms this is a section through an oblate spheroid, with equal curves above and below the line joining the widest points – in this case, literally, the equator.

But to make a practical vessel from this simple shape we need to have an opening, and that can radically affect the symmetry above and below the imaginary line connecting the widest points of the bowl. Another factor to consider will relate to the width of the foot in relation to the opening. Having the foot (or base, if footless) the same width as the opening lends great stability but considerably constrains our freedom of design. It also fails completely when we progress to hollow forms with very small openings. Finally, do we always want to have the widest point half the height of the bowl,

**3A: Idealised closed vessel**

or can we and should we explore other shapes and proportions? Naturally, the answers are no and yes, respectively, and I have sketched a few examples in figures 3B to 3E.

In figure 3B, the widest point is below the half-height of the bowl, and this makes the bowl appear heavy, perhaps even dumpy if the profile is carelessly executed. In figure 3C, the widest point is just above the half-height of the bowl, but only marginally so. In fact, if we compare this shape with figure 3A, what we have is the oblate spheroid with the top removed

**3B: Below centre vessel**

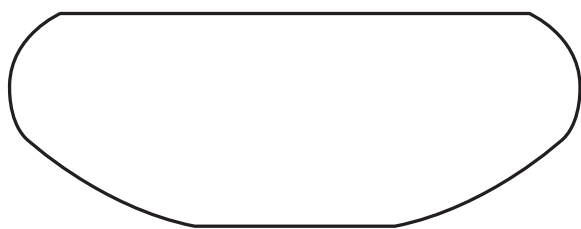
to form the opening.

In figure 3D, I have made the widest point even higher, elevating the profile further from the table, which tends to give an impression of airiness and lightness, and this is still a reasonably successful and practical shape.

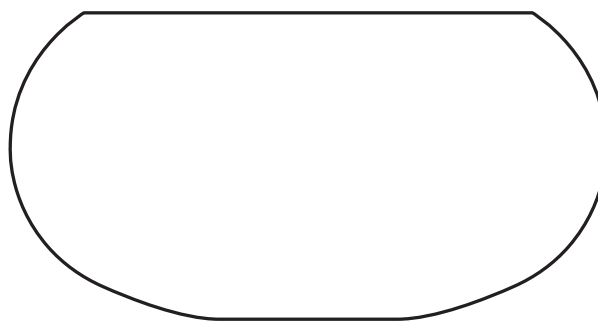
In all of these examples I have sketched the base narrower than the opening, in order to lift the profiles and give them a sense of – well, almost of buoyancy. This works less well in the case of 3B, however, because of the widest point being so low and restricting the view beneath. This

could be improved somewhat by elevating the bowl on a discrete foot, as discussed in the last issue. Making the base larger than the opening, however, really doesn't work. The shape is clumsy, heavy and lifeless, even with a foot added, as shown in figure 3E.

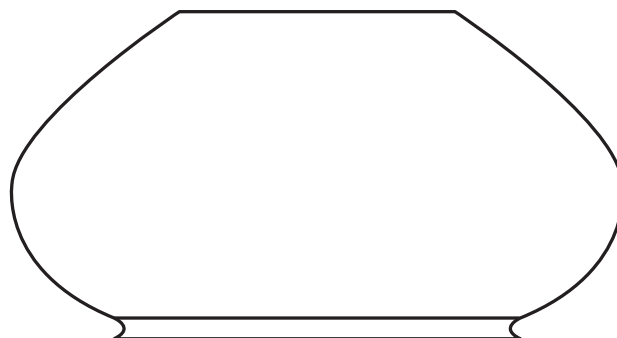
In all of these enclosed forms the same principles apply in regard to hollowing as were discussed in relation to open vessels – make the inner profile sympathetic to the outer, make sure the wall thickness suits the shape and function of the bowl, avoid making the base too thick or too thin,



3D: Above-centre vessel



3C: Balanced vessel



3E: Poorly proportioned vessel

stop the lathe, use fingers and callipers to gauge the wall thickness and congruence, take the piece off the lathe and check how it looks on a flat surface and how it feels in the hand.

At last, then, we come to the hollow forms with impressively or ridiculously small openings, depending on one's point of view. In practical terms these have little or no functionality, they are intended to be appealing and intriguing and, it has to be said, a vehicle to display the turner's skill and expertise. The diameter of the base or foot now becomes primarily an aesthetic constraint, and the designer has, depending on your point of view, either been freed from the shackles of rules and functionality concerns, or cast adrift on the chartless waters of their own trepidation.

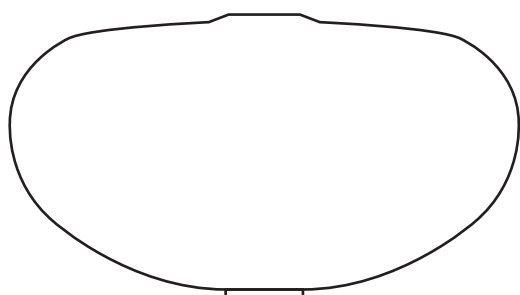
There is undoubtedly an art to good design, and it pays dividends to sketch – even if quite roughly – your thoughts on paper before committing them to wood. The cost of paper is considerably less, and availability considerably more. Beauty

is always in the eye of the beholder, but you may find it difficult to work out the correct proportions for the design you have in mind if you work straight from the imagination to the blank. And as we all know to our cost, once you have turned the wood away, you cannot put it back.

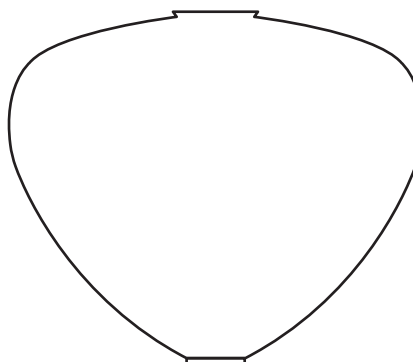
To this end, I have included a final selection of sketches. In figures 4A and 4B, I have attempted to represent two relatively common contemporary shapes. What they have in common is a distinct decision as to where to position the wider part of the form and to consciously differentiate them from a sphere. Don't get me wrong, there's nothing inherently wrong with a sphere, but it is a very unforgiving shape to attempt. You will find that the eye will effortlessly detect the most miniscule deviation from the perfect profile, and will be drawn back to it at every glance. My last example,

figure 3C, reminds us that there are plenty of classical shapes to draw from when looking for inspiration.

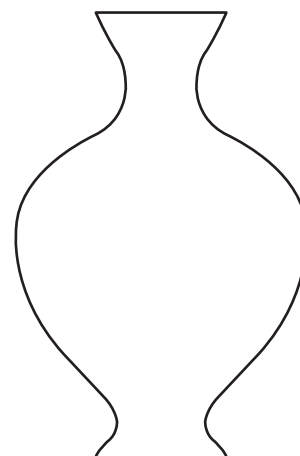
There is no space here to discuss the techniques of hollow turning beyond the tips in the sidebar, which I do recommend you to read and consider, and in any case Mark Sanger has completed a number of detailed articles on hollow form turning, which you will find in the back issues of this magazine. Arguably, where the eye cannot see and the fingers cannot reach there is less pressure to be so meticulous in matching the inner and outer wall profiles, and of course thin walls increase the risk of breaking through. But that does not mean these factors can be neglected, as they will directly affect the heft of the piece and how it sounds when tapped or



4A: Contemporary hollow form



4B: Contemporary hollow form



4C: Classical hollow form

set down. Differences in wall thickness caused by sloppy tool work will become apparent by tapping the wall. Undue thickness in the base will have an Indian club effect, and conversely making the base unduly thin will make the piece sound fragile when set down. So, do the best you can with every piece you turn, even where it won't be seen. Good design and workmanship should never be a chore or a burden, it should start as aspiration and become a habit.

Finally, here is a cautionary tale. Even when you do all the right things and think you've done a very good job, it can still go wrong. I turned what I thought was a nice hollow form in ash, 175mm high and 100mm wide at the shoulder. Having long been an admirer of John Hunnex's pieces finished with a collar of contrasting wood, I decided to give the technique a try. I turned the collar from a handy scrap of end-grain jarrah, matched the profiles, and the dry fit was snug and perfect so I went ahead and glued it in. Unfortunately, the glue grabbed before I had turned the insert to match the grain direction of the ash, and that was that. It sits unfinished on my desk as a reminder not to upset the woodturning gods.



Ash and jarrah hollow form

REFERENCES

In addition to the books I listed in the last article, the following may be of interest.

- 1 Mark Sanger – *Turning Hollow Forms, First Steps – Techniques and Projects*. An excellent introduction with sections covering safety, equipment, tools, wood selection and design with seven step-by-step examples.
- 2 David Ellsworth – *Ellsworth on Woodturning*. Ellsworth did much to develop the techniques for hollow turning and this book contains numerous examples. It also covers tools, techniques, posture and discussion surrounding David's own woodturning philosophy.
- 3 John Hunnex – *Illustrated Woodturning Techniques*. As with all of John's books, this one is a visual feast lavishly illustrating the techniques he discusses. Perhaps slightly dated now in relation to the tools he uses, but still a worthy book to have at hand.

RESEARCH

- Covid restrictions permitting, do take the opportunity to look for examples of well-designed and finished work. Not just wood, look at pottery and glass, too.
- Even if you have to do your research online, use your browser 'images' filter to search for good work.
- Look at the shapes, and ask yourself why one might be more attractive to you than another.
- Don't forget to look at the unattractive ones, too. Ask yourself why you don't like them, and what might have improved them.
- Create a folder of pieces you would like to emulate in some manner, and refer to it from time to time for inspiration.

INSIDE JOBS

TIPS FOR EXTENDED TURNING OVER THE REST

- Start small. The forces you will experience with larger work can be disconcerting, so make a few small pieces to start with to gain an appreciation of the techniques.
- The further over the rest the cutter is extended, the longer the handle has to be to retain control. I often stack handles end to end to make sure I stay that way, in the same manner as extending a snooker cue. This is why I have several more handles than I have deep turning tools.
- When using swan-necked tools, be diligent in ensuring that only the straight part of the shaft from the handle to the first bend is always in firm contact with the rest. This means that at times you will have the rest away from the work until you get deeper in, but that's what it takes. Move the rest closer as you proceed.
- Posture is important. Try to maintain a comfortable stance with the tool handle tight to your side. If you work with your arm away from your body, there's a good chance you'll strain a few muscles if a catch occurs, or worse. This means you will be moving your feet around more, so make sure the floor is clear and unobstructed.
- With vases you will probably find yourself bending quite far over to retain a view of the cutting point, and this will strain your back. If you find yourself doing this, stop and rest frequently, and keep your sessions short. It is considerably less physically stressful to use hollow form techniques where you are unsighted and can stand more erect, stopping frequently to check on progress. ●



CHESTNUT

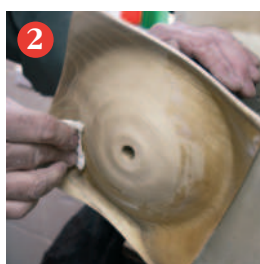
P R O D U C T S

FINISHING SCHOOL

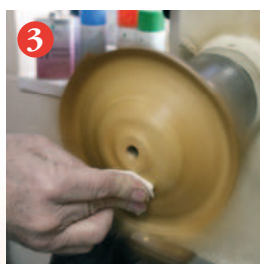
Using Cut n' Polish.



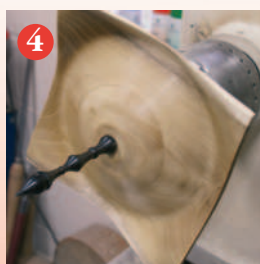
1 Cut'n'Polish is a special blend of soft waxes with an ultrafine abrasive suspended within it. Use it on bare wood sanded to 240 grit to give a dust-free, final finish whilst imparting a wax finish at the same time.



It can also be used on sealed wood to smooth the sealer, giving a bright wax finish which can be overcoated with more wax if desired.



2 Apply Cut'n'Polish with the lathe stationary, wiping it over the entire surface. You'll hear the abrasive working on the surface straight away.



3 Leave the Cut'n'Polish thirty seconds to partially dry, then turn the lathe on and polish up using Safety Cloth. The cutting action of the abrasive will smooth the surface at the same time. Use a new area of the cloth as buffing proceeds until a satisfactory shine is achieved.



4 Cut'n'Polish can be left as a finish on its own, or can be overcoated with WoodWax 22 or any of the waxes in our range for a brighter shine.

5 Cut'n'Polish enhances the finish without changing the colour of the original item.

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Is wood dangerous?

Andy Coates looks at some of the potential health problems of working with wood



Many years ago I was told about the dangers associated with yew wood. What I was told was shocking and difficult to accept given that I'd been working with it for weeks and had experienced no problems. This led me on a two-year quest to determine the facts about the dangers of yew wood, and in recent articles I have detailed some of the specific problems. One particular response I received from an American toxicologist when I asked why there isn't more detailed information on the specific issue of yew toxicity in respect of woodworkers has always stuck in my mind: 'There is no money to be made out of the research required to formulate a definitive response.' So all the information we do have is only available in an almost indirect fashion, or where industry has been required to provide data, or government health departments have commissioned research to formulate policy, and of course, the experiences of those affected.

The certainty of this original claim being true was unfortunately brought home to me by two things, one related to a good

friend and the other, more directly, after giving a demonstration at a club.

The first was the serious health situation a friend found himself in as a direct result of working with yew. He had worked with yew, almost to the exclusion of all other woods, for many years, and was renowned for producing the finest quality turnings in the wood. One day that all changed and he found himself in hospital in a quite serious condition. He had become sensitised to yew and his body reacted violently when exposed to the wood, its dust, or its sap. The potential for this to be life threatening was very real, and after his recovery extreme mitigation was required in order for him to continue turning at all. The whole workshop was cleared of yew – green, seasoned, part-turned, finished pieces, dust and shavings, everything – in order that he could safely enter.

The second event occurred as a result of a demonstration I gave at a newly formed club in the UK. The booking had been very last minute due the club losing its historical venue and having to find another very quickly. I had been booked for the inaugural meeting. It was to be a celebration of sorts.

I had been turning green yew all week and, as I had it all cut up and ready, I decided to turn something in yew. After the first half of the evening's demonstration, during coffee break, a club member came over to the lathe to chat, and while standing there put his hand on the piece of yew and, patting it, made a comment about how much he liked yew.

A day or so later I received an email and some photographs. The day after the demonstration he had noticed a tingling in his palm, which subsequently became a lesion. A trip to the doctor ended up as a trip to the hospital and a specialist. The palm had swollen significantly, horrifyingly, to a hard, raised mass of livid tissue. Thankfully treatment was provided and the swelling eventually reduced and disappeared. From that moment on he was unable to work yew, and his club had to ban yew from being brought in.

Now, this is only two cases, and there are lots of turners, but I know of so many more. Not all are related to yew – one is even related to beech, which must surely be one of the most innocuous of wood species there are?



Initial swelling

A personal experience also illustrated the potential for problems caused by wood. A sore swelling on my fingertip led to a trip to A&E. After an X-ray and a doctor poking around with a scalpel, a small foreign body, a tiny splinter, most likely greenheart, was determined to be the cause of the pain and puss. Removing it took another visit and another session of un-anaesthetised torture, but it eventually



After the doctor had poked around with a

healed after weeks of making work difficult and painful. I now wear gloves when handling stock material.

The point here is not to scare you, but to furnish you with information that is so often requested in communications to the magazine. So what are the problem species, what do the terms mean, and what might we do to mitigate potential problems? Within the constraints of this



How to make turning difficult and painful

short article I hope to address these points as best as I can. By necessity, most of what I will say has been gleaned from other sources – books, periodicals, websites, and magazines – over a period of around 15 years. I believe there is justification for a book dedicated to these issues, but I fear few would read it, and fewer still would take heed of the warnings. We're all immortal, right?

How does wood present a danger?

I doubt there is a woodturner alive who doesn't at least know that wood dust can be a potential danger, and the methods of controlling wood dust are well known, the equipment to do so is readily available, and failure to do so is usually the result of apathy, cost of equipment, or the 'it'll never happen to me' mentality. For the purposes of this article I am not going to discuss wood dust specifically – we can take it as a given that it's a problem we should address – with one exception, the dust of western red cedar.

Western red cedar is notable due to the particular danger caused by its dust. Dust from all species of wood is a respiratory danger, and workplace exposure limits are set by appropriate bodies across the world, however, the level for WRC is 50% lower than that of all other species due to the significantly higher incidence of reported problems due to exposure to it.*

What we will be looking at are the other ways in which wood can cause health issues.



Worked western red cedar



Western red cedar



The terms

The potential health issues caused by exposure to wood can be summarised as:



Irritation: this can be of the skin, respiratory tract or mucous membranes, and may present as no more than an annoying itch on the skin or sneezing. But these relatively minor symptoms ought not to be ignored as they can eventually lead to sensitisation.



Sensitisation: Sensitisation can be viewed as a preliminary stage of a potentially more serious reaction. Repeated exposure to any of the species labelled as sensitisers over a long period can lead to severe allergic reaction. Often the species are used for long periods without any signs of a reaction, but after years of working with them a reaction can occur, often a severe one, such as rhinitis, dermatitis and asthma, with significant impact on the health and wellbeing of the individual. Signs that you are becoming sensitised to wood, or a particular species, may well be those detailed for irritation above.**

Sensitisation may be particularly likely for those with a pre-existing condition such as asthma or dermatitis, and may result in accelerated or pronounced reactions.



Poisoning: Thankfully, the incidence of poisoning is rare. Poisoning is the result of the wood having a known organic toxin, such as taxine in yew and saffrole in sassafras, and the severity of reactions may be governed by the degree and period of exposure, and the method of ingestion.

One interesting, though potentially serious, example is the use of birch and willow by individuals with an allergy to aspirin. Both species, *Betula* spp. and *Salix* spp., contain significant quantities of salicylic acid, the main active ingredient of aspirin. And if you have hives, nasal polyps or asthma, your risk of aspirin allergy, and therefore a reaction to the wood, is increased by up to 30% above a baseline probability of 1% of having an allergic reaction to the wood.***



Carcinogens: Long-term exposure to wood dust from any species has been proven to be a cause of cancer of the nasopharynx. Long-term exposure can also increase the probability of other diseases. Occasional exposure is unlikely to have any long-term impact, although dust control is always to be advised.

◀ Direct toxicity

Nearly 2000 years ago, Pliny the Elder jotted down a warning about yew:

‘Not to omit any one of them, the yew is similar to these other trees in general appearance... It is an ascertained fact that travellers’ vessels, made in Gaul of this wood, for the purpose of holding wine, have caused the death of those who used them.’ – Pliny the Elder, from *Naturalis Historia*, ca. 77 AD

This was one of the first things I found when I began searching for information on the toxicity of yew, and it’s a perfect summation of the potential problem with yew – it carries an organic toxin, taxine, that can be deadly. But how many other species are directly toxic?

Directly toxic species

This is an incomplete list of wood species that contain organic toxins, but it should serve to illustrate that the species does not need to be rare, or uncommon, and if you have symptoms then medical advice should be sought immediately: laburnum,

milky mangrove, mulga, oleander, poison walnut, sassafras, tambootie, yew.

Species known to cause NPC (nasopharyngeal cancer)

Walnut – African, black and English, western hemlock, willow, elm, European beech, Australian cypress, western red cedar, Australian red cedar

Signs of potential problems ahead

So what are the signs we need to look for that might indicate potential problems?

- Sneezing and an itchy, runny or blocked nose (allergic rhinitis)
- Itchy, red, watering eyes (conjunctivitis)
- Wheezing, tightness in the chest, shortness of breath, coughing
- A raised, itchy, red rash (hives)
- Swollen lips, tongue, eyes or face
- Stomach pain, feeling sick, vomiting, diarrhoea
- Dry, red and cracked skin

Toxicity of the wood species found on one rack in my workshop

TOXICITY OF THE WOOD SPECIES FOUND ON ONE RACK IN MY WORKSHOP				
Wood	Type of reaction	Affected area	Frequency and strength of reaction	Source
Beech	sensitiser NPC	eyes, skin, respiratory tract	common ++	leaves, bark, dust
Birch	sensitiser	respiratory tract	common ++	dust, wood
Blackwood	sensitiser	eyes, skin	common ++	dust, wood
Boxwood	sensitiser	eyes, skin	common ++	dust, wood
Cocobolo	irritant, sensitiser	eyes, skin, respiratory tract	common +++	dust, wood
Ebony	irritant, sensitiser	eyes, skin	common ++	dust, wood
Elm	irritant NPC	eyes, skin	rare +	dust
Goncaloaves	sensitiser	eyes, skin	rare ++	dust, wood
Greenheart	sensitiser, splinters go septic	eyes, skin	common +++	dust, wood
Hemlock	nasopharyngeal cancer NPC	respiratory tract	unknown	dust
Iroko	irritant, sensitiser, pneumonia HP	eyes, skin, respiratory tract	common +++	dust, wood
Laburnum	constitutional effects – nausea, vomiting, headache DT	–	rare	dust, wood
Mahogany (African)	sensitiser, pneumonia NPC	skin, respiratory tract	unknown +	dust
Maple (Acer)	sensitiser, pneumonia HP in spalted stock	respiratory tract	common +++	dust
Oak (Quercus)	sensitiser, nasopharyngeal cancer NPC	eyes, skin	rare, unknown ++	leaves, bark; dust
Obeche	irritant, sensitiser	eyes, skin, respiratory tract	common +++	dust, wood

It is true that many of these symptoms may be caused by something other than the wood we are working with, so do not immediately attribute any symptom, or set of, to the wood. Removing yourself from the source of potential exposure and keeping an eye on how you feel can often give you a clue to what is causing the symptom. However, do not ignore even minor symptoms; be proactive and seek medical advice if you have concerns.

For some individuals an allergic reaction may actually be life threatening if it results in a severe allergic reaction, called anaphylaxis. This affects the whole body and usually develops within minutes of exposure. Signs of anaphylaxis include all the above with the addition of:

- Swelling of the throat and mouth
- Difficulty breathing
- Lightheadedness
- Confusion
- Blue skin or lips
- Collapsing and losing consciousness

Most of which, I am sure, would lead you, without needing to read an article in a magazine, to seek immediate medical attention. Anaphylaxis is a medical emergency and you should call for an ambulance immediately.

How much danger lurks in the wood pile?

As I was researching and compiling the information for this article I began to wonder what potential nasties I had sitting on shelves in the workshop. I have a very large, old wooden chest that I converted into storage for offcuts and small pieces of oddities. Using all the available data I compiled a chart of the properties.

KEY FOR TABLE BELOW:

NPC: Nasopharyngeal carcinoma – cancer of the throat

HP: Hypersensitivity pneumonitis – Inflammation of the alveoli in the lungs

DT: Direct toxin – toxic organic compound

(May remain toxic in the end wooden product: see Pliny The Elder)

TOXICITY OF THE WOOD SPECIES FOUND ON ONE RACK IN MY WORKSHOP				
Wood	Type of reaction	Affected area	Frequency and strength of reaction	Source
Olivewood	irritant, sensitiser	eyes, skin, respiratory tract	common +++	dust, wood
Padauk	sensitiser, nausea	eyes, skin	rare +	dust, wood
Pine	irritant, sensitiser	skin, respiratory tract	common +	dust, wood
Poplar	irritant	skin, respiratory tract	++	
Purpleheart	nausea		common ++	dust, wood
Redwood	sensitiser, nasopharyngeal cancer, pneumonia HP NPC	skin, eyes, respiratory tract	rare ++	dust
Rosewood	irritant, sensitiser	skin, eyes, respiratory tract	common ++++	dust, wood
Sapele	irritant	respiratory tract	unknown	
Spruce	sensitiser	respiratory tract	rare +	dust, wood
Teak	sensitiser, pneumonia	skin, eyes, respiratory tract	common ++	dust
Verawood	irritant	respiratory tract	unknown	dust, wood
Walnut (<i>Black</i>)	Sensitiser NPC (rare)	skin, eyes	common ++	dust
Wenge	irritant, sensitiser, splinters go septic	skin, eyes, respiratory tract	common ++	dust, wood
Willow	sensitiser, nausea NPC (rare)	respiratory tract	unknown +	dust, wood, leaves, bark
Yew	irritant, direct toxin, nausea DT	skin, eyes, cardiac	common ++++	dust, wood, leaves, aril (but not the fleshy part)
Zebrawood	sensitiser	skin, eyes	rare ++	dust, wood

◀ What can we do to reduce risk?

Although we haven't specifically dealt with dust it must necessarily be addressed here because the dust of all species is a hazard. We often think of the threat wood dust poses as entirely respiratory in nature, but in fact it can be a route to sensitisation, so controlling it becomes even more important.

Dust extraction, point-of-production collection of shavings and chips, and appropriately rated respiratory lung protection are the first lines of defence. Hood-type air-fed respirators offer the best protection and this can be greatly improved upon by also extracting/venting the dusty air directly out of the workshop. Wearing a full-sleeve workshop coat, long trousers, and a hat can also help to keep dust off your bare skin. Washing at appropriate intervals and showering directly after leaving the workshop are also helpful. Dusty workshop attire should be stored carefully or washed immediately.

While I have no basis for this, I have long been convinced that using a barrier cream can also be helpful, especially for woodturners who cannot wear gloves at the lathe, and it can't do any harm.

When using the species known to be sensitisers, especially in the green state where sap is present, take every precaution you can to remove direct contact with sap. Ingestion can occur topically as well as orally and by inhalation. If contact with sap cannot be avoided

washing immediately with soap and warm water is advised.

In essence your defence against future problems is reducing physical contact, especially with the sensitising species, and where contact is unavoidable, such as when turning, do everything you can to reduce the duration and extent of your exposure. Your aim is to not become sensitised. In the case of the species that contain a direct toxin the mitigations are simple – avoid all contact with the sap specifically, and physical contact with the wood as far as is practicable. It should not need saying, but these species are not suitable for making toys, chopping boards, drinking vessels, or tableware.

What would it take for us to take more care?

Severe reactions to wood are still relatively rare, but they do occur, and when they do they can be life changing, and may even prevent you from working with wood again. Wood is a wonderful material and we all love what we can do with it. It seems harmless, looks harmless, and that's really how we treat it, but maybe we should take more care when using it? If all the wood we bought carried the symbols seen in this article, wouldn't we do just that? Be aware, take precautions, ensure you have a means of contacting somebody if you work alone and the worst happens, and work as cleanly and safely as you can. We want to turn wood... let's try to ensure that we can all do so for a long time to come.

NB: Please note that I am a woodturner and not a toxicologist or a medical doctor. The information here is to the best of my knowledge – and ability to cross-check, which I did extensively – accurate. If you have specific concerns please contact your healthcare provider immediately and seek qualified medical attention. ●



Information sources and references:

- * www.cdc.gov/niosh/pel88/wooddust.html
- ** www.ed.ac.uk/health-safety/guidance/hazardous-substances/sensitisers
- *** ndnr.com/pain-medicine/salicylates-in-salix-populus-and-betula/

SEE ALSO:

www.wood-database.com

For a complete list of all toxic species see: www.woodchoose.com/uploads/Toxic%20woods%20table%20-%20Woodchoose.pdf



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Flower power turner

We speak to young woodturner Matt Underwood





Where and when was your introduction to turning?

I was first introduced to woodturning aged 11. My Dad purchased a lathe at auction and we started making a mess. I remember having quite a few frustrated evenings at the lathe when first starting out. A few lessons with a local woodturner helped get me on my way, along with lots of wood gifted from my grandfather, who also did some woodturning/working. I can't remember who told me about the Association of Woodturners Great Britain (AWGB) but it offers many excellent youth training days/weekends, which are all free. These were fundamental to my learning and confidence to turn and often included world-renowned professionals. I attended many of these over the years and would highly recommend them.

Quite soon I was needing my own workshop so my parents kindly converted half of a garden shed on the farm for me – a couple of years ago I laid claim to the whole shed so I could fit some more machinery in. It's been invaluable having my own dedicated space and I'll often be out there working late into the evening.

What's your favourite thing about woodturning?

I'm not sure what my favourite thing about woodturning is but it's a very satisfying activity and it's always great being able to make things yourself. I think many people would agree that working with wood is therapeutic in a way, being such a tactile and beautiful material. I've always been upgrading my machinery (usually to older/heavier machines) and they are a pleasure to use. Getting the chainsaw out on a big lump of timber before turning is also one of my favourite activities!

The woodturning community is also a very friendly group and it's one of the few trades where everyone is willing to help each other.

I've always enjoyed producing quirky items and moving away from more traditional turnery. Over the last few years, I've predominantly been making magic wands and wooden apples, which are now my bread-and-butter work. I've done a few Christmas markets, however I've found selling online on Etsy much more successful. I've learnt a lot about production turning and running a small business. I'm always striving for efficiency and can now say I'm earning a good 'workshop hourly rate', which covers all the downtime and costs involved, and

electricity should my parents follow through with their threat of charging me.

I'm currently in my final year studying Product Design and Technology at Loughborough University so my time has been limited this year, but I always try to restock every few months.



PHOTOGRAPHY BY SARA SINCLAIR

Tell us about the WCT Wizardry in Wood competitions? What prompted you to enter? What pieces did you enter and which won?

Every two years the Worshipful Company of Turners (WCT) holds competitions in collaboration with the AWGB. There's a specific competition for juniors (U21) and everyone who attends the youth training days is encouraged to enter. All entries are shown on display in London and there's some incredible talent, which really opens up the possibilities of turning. I've entered a few of the competitions over the years and in 2018 I won the junior turning category with a 'red rose' I made. This is my proudest piece I've made and part of me wishes I didn't sell it. Somehow, I made it over a weekend with relatively few mishaps – I know I wouldn't have made it if it wasn't for the competitions motivating me. Hopefully I can top it for the competitions in October this year.

I have been experimenting with green timber since attending an AWGB seminar and seeing Mark Hancock steam bend a loop in the stem of a small flower/podlet. I've played around with making a few different types of flowers over the years. They're different to a lot of traditional turning but also quite fun to turn, which are the main reasons I make them.

I also entered a blue calla lily into the 2018 competitions and I was commissioned to make another 85 similar lilies. I underestimated the work involved but with a few late nights I managed to complete it and it was a worthwhile experience.

In 2019 I was awarded a bursary from the WCT for funding primarily for tuition to help improve my turned flowers. I purchased some photography backdrops/lighting which have been vital to all my work and have had an excellent day with Mark Hancock. I plan to also have more lessons with Les Thorne for production work and an airbrush artist to help improve my colouring. I'm very grateful for the award.

What are your aspirations for the future?

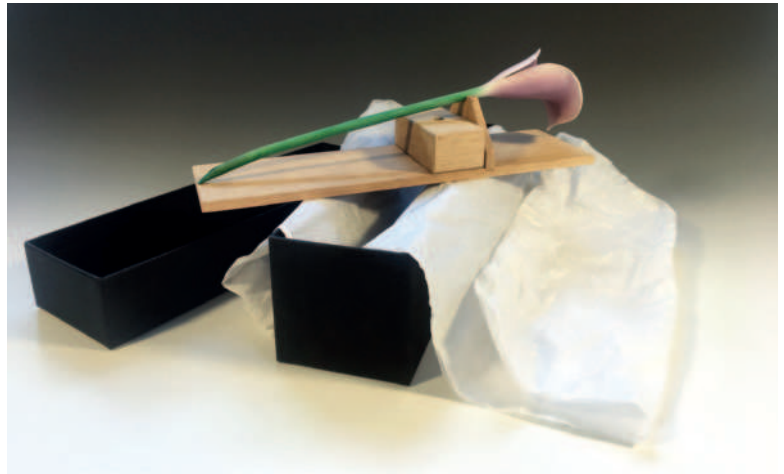
I've always wanted to work for myself to some extent and run my own business(es). I used my university placement, Year in Enterprise, to focus on one main idea but also my woodturning. I never intended to turn full time but have it more as a side hustle. Running my workshop like a business and not a hobby has meant it can now pay for itself, for which I am very grateful for after years of hard work! After graduating I'm planning to turn full time from October through to December this year before hopefully travelling in Australia in 2022, Covid pending.

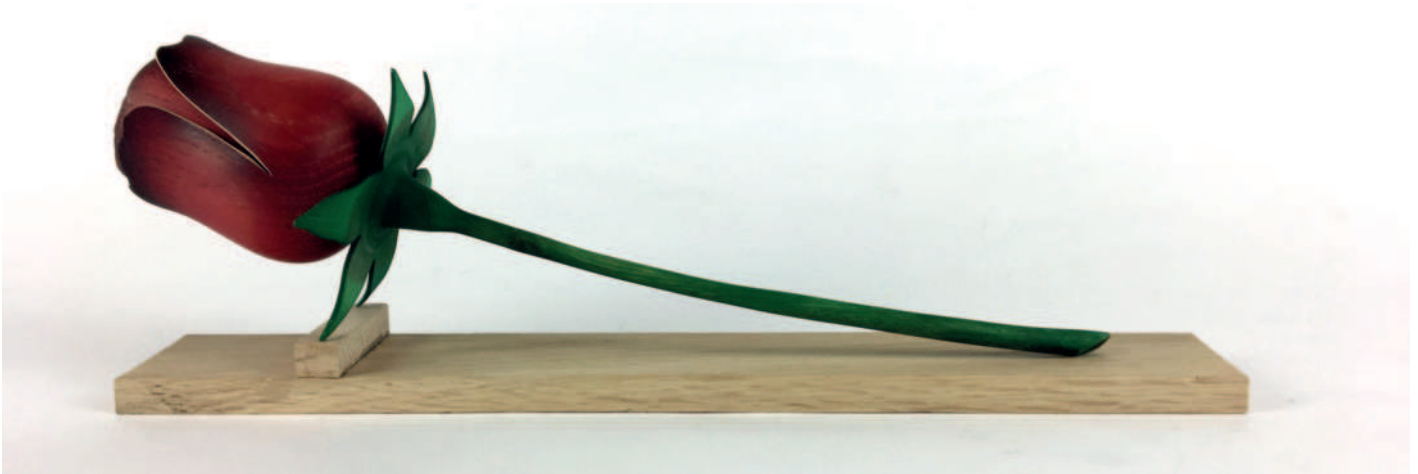
What do you do when you're not woodturning?

Outside of turning I enjoy playing rugby and the guitar, however most of my time is taken up with my old Land Rover 110 – I've always said my sheds will be bigger than my house, and if not I've done something wrong.

And anything else you'd like to add about yourself.

I started a YouTube channel at the end of 2019, initially to try to get more sales, however, after a couple of my videos amassed 2M and 500k views on a Facebook page, I'm hoping my channel will take off. Just like the flowers, the videos require a lot of time and patience but I'm confident my investment will eventually pay off.





Online

- [Etsy: Underwoodturn](#)
- [youtube.com/channel/UCzX6SU2dXF9F-GA34Hs79cA](https://www.youtube.com/channel/UCzX6SU2dXF9F-GA34Hs79cA)
- [YouTube: Underwood Turning](#)
- [instagram.com/underwoodturning](https://www.instagram.com/underwoodturning)
- [Instagram: Underwood Turning](#)
- [Instagram: Underwoodwands](#)
- [facebook.com/Underwoodturning](https://www.facebook.com/Underwoodturning)
- underwood-turning.square.site/

The Youth Training Programme is supported by both the AWGB and the Worshipful Company of Turners. More information is available on www.awgb.co.uk/training/youth-training/ or by email from youthtraining@awgb.co.uk

OUR CONTRIBUTORS



ANDY COATES

Andy is a professional woodturner and has a workshop and gallery in Suffolk. He makes one-off pieces, small-batch runs, antique restorations and other strange commissions. He also demonstrates and teaches.

cobwebcrafts@btinternet.com
cobwebcrafts.co.uk



COLWIN WAY

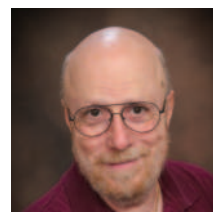
Colwin started turning aged 13 and has since gone on to teach the craft. He wishes to continue to give people the confidence to try the wonderful hobby for themselves.

colwinway@btinternet.com
www.colwinwaywoodturner.com



IAN WOODFORD

Since retiring from the pharmaceutical industry, Ian has enjoyed concentrating on his love of woodturning. As well as belonging to two Hampshire clubs, he has written articles for both *Woodturning* and an American magazine.



KURT HERTZOG

A professional woodturner, demonstrator and teacher, Kurt writes for various woodturning and woodworking publications in the US.

kurt@kurthertzog.com
kurthertzog.com



LES SYMONDS

After a career in teaching, Les developed his hobby of woodturning into a career. He is on the Register of Professional Turners and has a small shop and gallery in Bala in the Snowdonia National Park, where he displays and sells his work.

www.facebook.com/pren.bala



MARK PALMA

Mark believes turners are the most thoughtful and sharing people he has ever met. Over his 15 years of turning, teaching and writing he has found many friends and acquaintances on his journey with the lathe.

marksworkshop@gmail.com



PETE MONCRIEFF-JURY

Pete learned turning in school and, when made redundant 12 years ago, became a full-time woodturner. He focuses on making for high-end shows. He also demonstrates and teaches.

bodrighywood@bodrighy.co.uk



RICHARD FINDLEY

Richard is a full-time production turner specialising in small-batch work, one-off commissions and turning for furniture and restoration. He also offers demonstrations and a range of woodturning supplies through his website.

richardfindley.uk



RICK RICH

Rick is a part-time woodturner from Washington State. He is a member of the AAW, the Cascade Woodturners in Portland, Oregon, and a founding member of the Southwest Washington Woodturners in Vancouver, Washington.



STEPHEN LONG has been woodturning for 30 years and is the chairman of the Woodbury Woodturners Club in East Devon. Stephen retired from engineering two years ago and often instructs new members and anyone who wishes to add to their skills.

woodturner@hotmail.co.uk



SUE HARKER has been turning for more than 20 years and is a Registered Professional Turner.

She takes woodturning courses, produces and demonstrates at clubs and shows. Moving with the times, she offers remote demonstrations.

www.sueharker.com
sue@sueharker.com



TONY NICOL

Tony took up woodturning to keep himself sane while working as a chartered electrical and information engineer. Now retired, he still turns for relaxation and completes the occasional commission.

tony.nicol@fromthewood.co.uk



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Sunflower tealight bowl

Sue Harker shows you how to make this decorated sunflower-shaped candle holder



How frustrating is it when you have bowl blanks with cracks that do not look like they can be made into a feature in your turning? I recently had some 'rejects' from a commission I was fulfilling, I managed to cut out the cracked areas by forming a small flower shape with six rounded petals and turned it into a tealight bowl. I was pleased with the result but, wanting to be more

adventurous, I decided to try other shapes and that is how the design for this sunflower tealight bowl was created.

If you are unable to draw your own sunflower outline, templates can be found using Google search. Search for free flower outlines, ensuring you only use free images so you do not infringe on copyright. With a suitable outline found, copy it to a Word document

where it can be resized to suit the piece of timber being used. Once printed, cut out and place on the timber to draw around. The shape can then be cut out using a bandsaw. The beauty of Word documents is that the size of the outline can be made as large as necessary by spreading it across two pages, printing both pages then sticking them together to form the template.

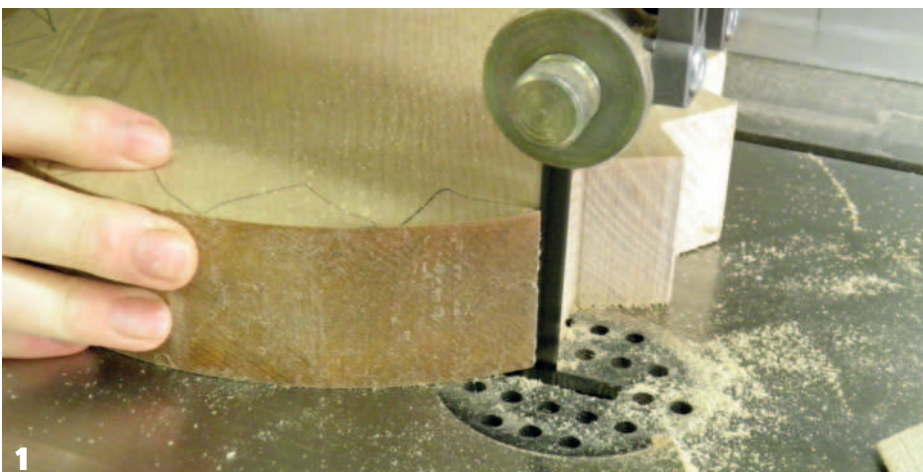
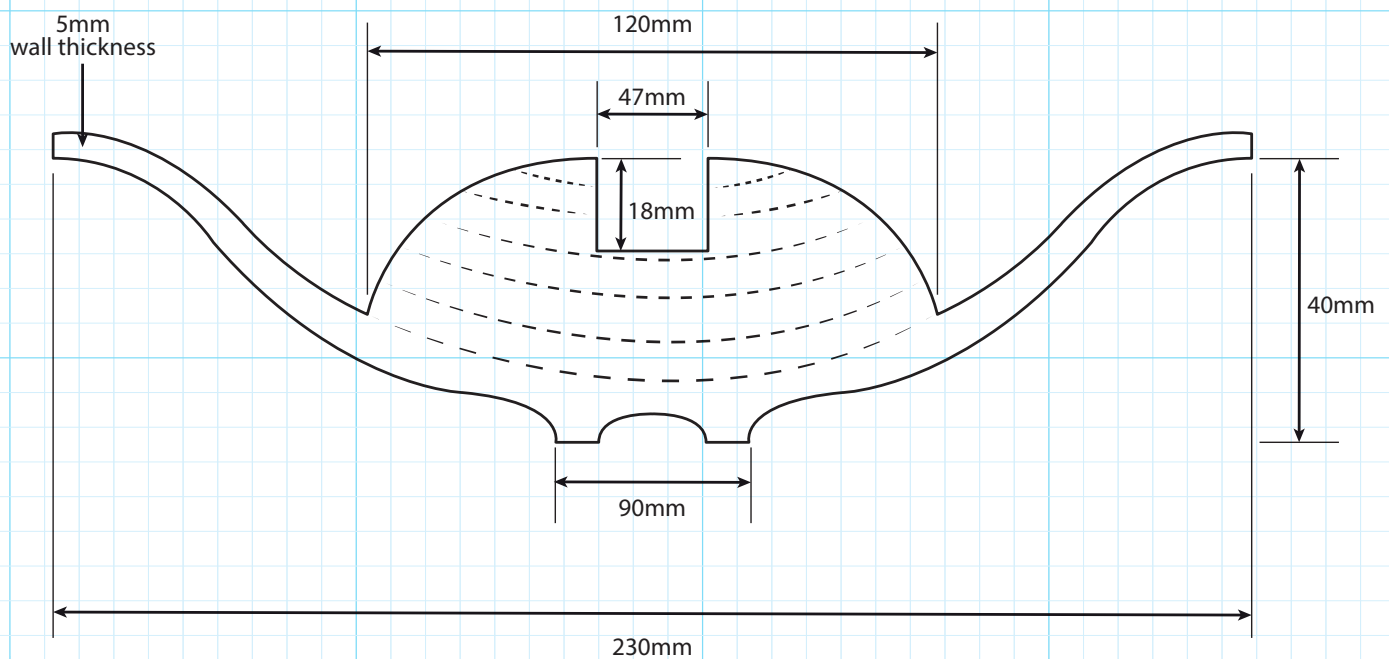
EQUIPMENT USED**Tools**

- PPE and RPE
- $\frac{3}{8}$ in standard grind bowl gouge
- $\frac{3}{8}$ in fingernail profile bowl gouge
- $\frac{1}{8}$ in parting tool
- Flat shaft skew chisel
- $1\frac{7}{8}$ in Forstner bit
- Drill press
- Bandsaw
- Proxxon carver fitted with V-groove cutter
- Pyrography machine with scalpel tip

- Homemade sanding jig
- Rotary sander

Materials

- Sycamore bowl blank $9\frac{1}{2}$ in x $1\frac{3}{4}$ in
- Acrylic sealer
- Chestnut acrylic yellow iridescent paint
- Chestnut hard wax oil
- Sanding abrasives 120, 180, 240, 320 and 400 grit
- Fire-retardant tealight candle insert



1 Select or draw a suitable sunflower shape. Outline the correct size for a piece of timber approx. 9in x $1\frac{3}{4}$ in. Place the shape over the timber and carefully draw round. Using a bandsaw, cut away the surplus timber to reveal the desired sunflower shape.

2 For mounting on the lathe, either drill a hole in the centre to fit the screw chuck that was supplied with your chuck, or, if you have a chuck with jaws that safely expand to 17/8in, you can drill a hole using a 17/8in Forstner bit fitted into a drill press. The candle insert being used – available from your woodturning supplier – also has a diameter of 17/8in, so it fits very nicely into this hole. Make sure the hole is drilled deep enough to allow for a truing-up cut to be taken across the front face.

3 Mount the bowl blank on the lathe using the method you have chosen and true up the underside. Measure and cut a recess the correct size for your chuck. Here I am using a skew chisel to create a dovetail in the recess for fitting the jaws on my chuck.

4 At a diameter of approximately 33/8in, draw a pencil mark, which will be the size of foot for the bowl. From the pencil mark, using a 3/8in standard-grind bowl gouge, create an ogee shape on the underneath of the bowl.

5 With the desired shape achieved, sand using a rotary sander, starting with 120 grit and working through 180, 240, 320 and 400 grit.

6 Remount the bowl using the recess cut on the underside. Use a 3/8in standard-grind bowl gouge to take a cut across the front face to true up. Next, measure approximately 120mm diameter and draw a reference line. This will be the centre raised seed pod section. If you used a screw chuck to mount the bowl blank instead of a 17/8in recess, now is a good time to create a hole large enough to receive a candle cup insert. This can be done by mounting a 17/8in Forstner bit into a Jacobs chuck and drill on the lathe. Reduce the lathe speed to approximately 500rpm.

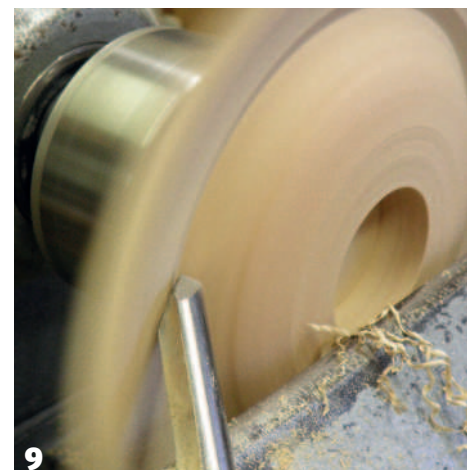
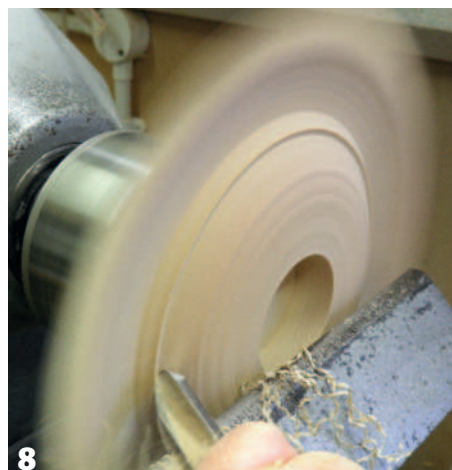
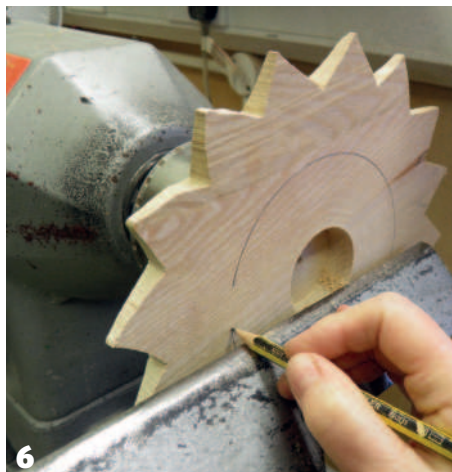
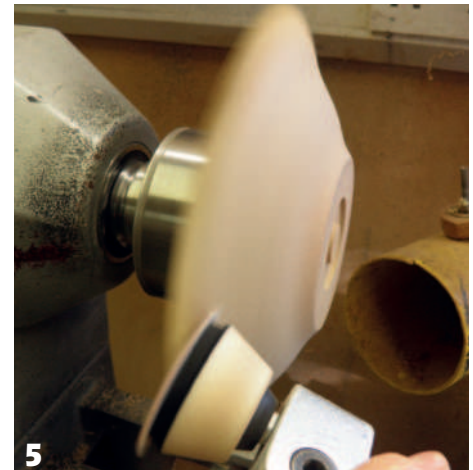
7 Using a 3/8in standard grind bowl gouge, begin to create the wall thickness, starting from the outside edge of the bowl blank and taking care not to apply too much pressure to the timber. Leave step cuts so you do not catch the wings of the tool. Turn to approximately 5mm wall thickness so the petal edges have some strength to them.

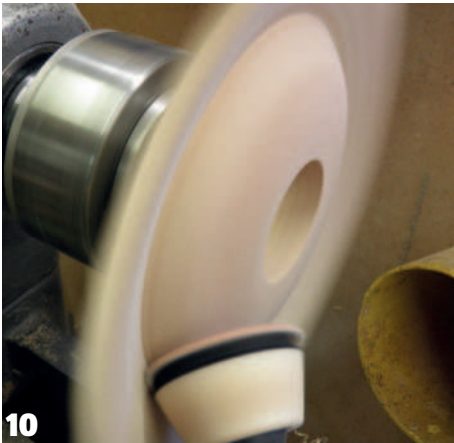
8 Change to a 3/8in fingernail profile bowl gouge to refine the shape. This tool gives better access for refining the transition between the raised seed pod and petals. Here I am cutting down towards the bottom of the bowl using a bevel-supported cut.

9 When the bevel-supported cut meets the bottom of the bowl, gently close the flute towards the timber and lower the tool handle to take a shearing cut across the bottom of the bowl, blending into the previously thickened section.

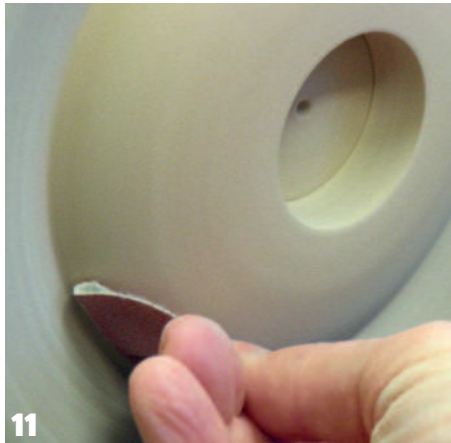
Handy hint

When sanding the petals of the bowl with a rotary tool, make sure you approach them with the bottom edge of the sandpaper. This will stop the paper from being pulled from the sanding arbor. Do not sand by hand with the lathe rotating as this may cause injury.

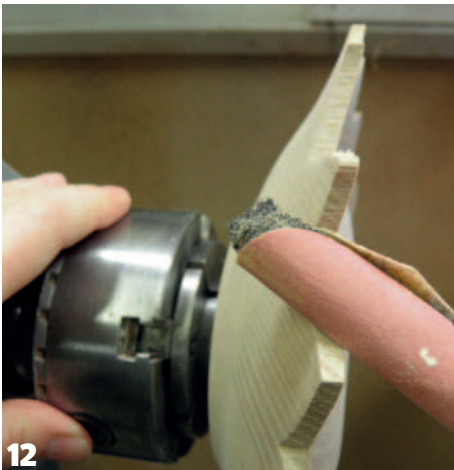




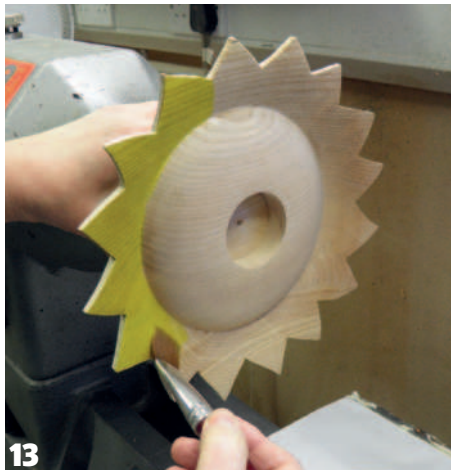
10



11



12



13



14



15



16

10 With the shape formed and refined, sand using a rotary sander and the same selection of grits used on the underneath.

11 The area where the petals meet the seed pod section will need to be sanded by hand as the rotary sander will not reach into it. Sand carefully, making sure your hand does not slip into the sharp edges of the rotating petals.

12 Next, the cut edges of the petals need to be sanded to remove blade marks left by the bandsaw. Here I am using a purpose-made sanding jig with a flat face. The flat face on the jig helps to keep these edges flat. The jig has the hook part of hook & loop tape stuck to it to enable the cloth-backed sandpaper being used to grip to it.

13 If you choose to colour the petals it will need to be sealed with acrylic-based sanding sealer first. When the sealer is dry your choice of colouring can be applied. Here I am using Chestnut acrylic iridescent paint and a paint brush. This gives colour without hiding the grain pattern.

14 When the paint has dried, lightly sketch the petal outlines and, using a carving chisel with a V-groove cutter attached, carve along these lines. This reveals clean, colour-free timber, making the petals stand out.

15 Mount the finished bowl on your lathe using the recess cut for the candle insert. Remove all chucking evidence using a standard-grind bowl gouge and sand to a finish using the same grits as before. I usually cut a V-groove into the underside where the chucking evidence has been removed.

16 For decorating the seed pod section, a pyrography machine with a scalpel tip fitted into the pen can be used. With the scalpel part of the tip slightly bent, burn round uniform marks over the entire seed pod section. Using a high setting on your pyrography machine enables this to be achieved with only a gentle touch being needed to burn each seed. With the piece burned, coloured, and carved it is now ready to have a finish applied. I have chosen to apply several coats of hard wax oil, allowing each coat to dry before applying another. This has produced a lovely shine with some heat and moisture protection. A candle insert is used as a heat/fire barrier between the wood and candle. Glue this in place so a candle cannot be used without it. If selling your work, it is advisable to attach a warning label to never leave a lit candle unattended.

HEALTH AND SAFETY

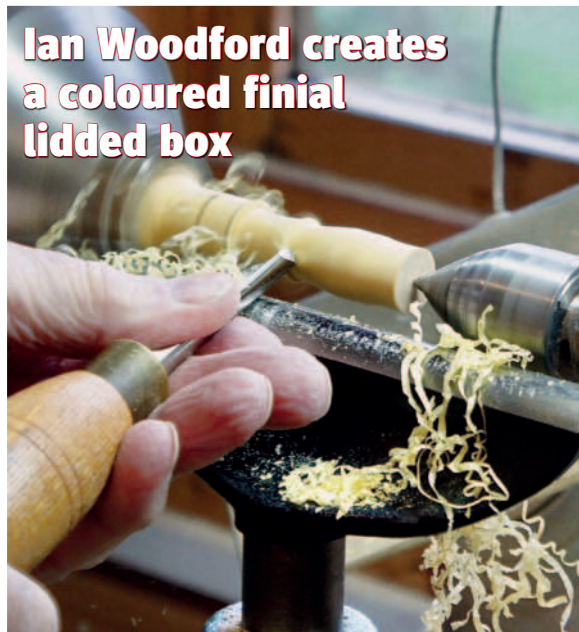
Only use a pyrography machine in a dust-free environment and use some form of extraction for the fumes. I use a carbon filter extractor-type fan and open a window for the extracted fumes to escape. ●

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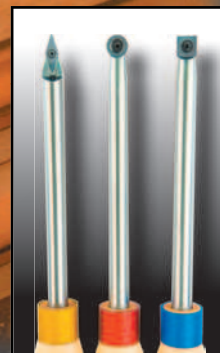
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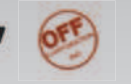
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Kurt's clinic

Kurt Hertzog answers some readers' questions

Large-quantity orders

Question: I've been turning and selling pens for a while and just landed an order for 250. I am very excited but worry I don't have the capacity to accomplish it in the timeframe the customer has specified. Any suggestions what I can do to help with large-quantity orders?

Answer: I'm wondering why you would accept an order for a quantity and delivery that you knowingly believe you can't successfully meet. It has the makings of a potential late delivery, lesser than usual quality, transition from enjoyment in the shop to dread, poor private and public reviews of you (and your company), and more.

A couple of immediate suggestions... If you believe this is a train wreck in the making, contact the customer and negotiate a delayed/staggered delivery or some other alterations in their order that will allow for success. Other than a large gift giving, single event or multi-store initial stocking order, there may not be a need for the entire large quantity at once. You also have the option to subcontract some quantity or facets of your order to fellow turners. That potentially removes some of your profit margins. I'm assuming that turning (no pun intended) a profit is your reason for taking this order.

Another pitfall of subcontracting is that it reduces your immediate control of quality. However, it might allow you to be successful, save face, and make appropriate plans for future large-quantity orders. Barring negotiating smaller-quantity, staggered deliveries, you can always reject the order and provide whatever excuse you wish. Inability to obtain sufficient materials, problems with equipment, worker availability, or some similar excuse might work. The unhappy customer response it might create now could be better than potentially a more vociferous one later.

On improving throughput efficiency for this order or future projects, there are several suggestions I can make. Set up your process that is tailored to work well in batches and efficient-sized quantities at each stage. Cutting, drilling, gluing, facing, turning, sanding/finish prep, finishing, assembly, and packaging are the typical major stages of this kind of project. Each can be organised in a 'manufacturing' mentality. You can set up your equipment with jigs and fixtures that allow for faster, more uniform, easily repeated work. It also allows you to enlist additional workers that



Jigs and fixtures can be as simple as setting a proper length cut off clamp on the bandsaw. Set it for minimal excess needed for barrel trimming, and yet a non-turner can process blanks



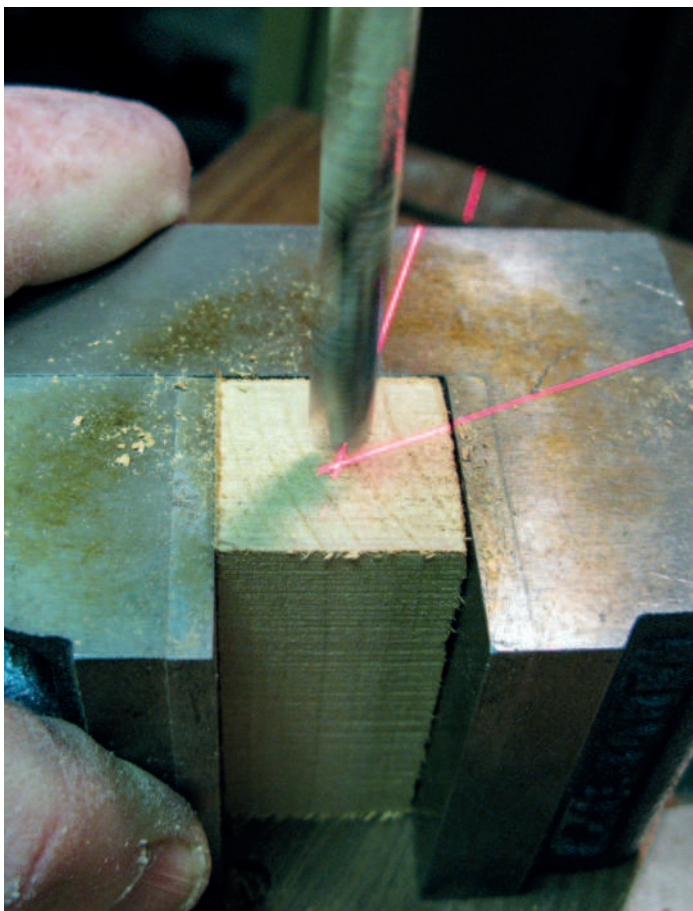
Set up your process to work in efficient sized batches. You don't need all 250 blanks sitting in a pile waiting for turning. Only enough to keep ahead of the turner. (My prep for upcoming classes)

can work in parallel with you. For example, if you are the turner/finisher worker, family, friends, or short-term contract help can be doing processes that are essentially robotic in nature. Jigs or fixtures properly set so that errors can be eliminated (or at least minimised) allows you to use virtually anyone available with minimal training and supervision. You won't need to have 250 ready-to-turn blanks in front of you all at once. While you are at work, someone else or others can be performing the necessary work in smaller batch sizes. They only need to keep sufficient ready-to-turn product in front of you continually.

Setting up batch processing allows for work to continue 'around the clock' by others, so progress can be made at any hour even if you aren't at the lathe turning. Of course, you can pre-build and stock any common parts or sub-assemblies. This works well if your orders are of a certain design or species. Even having your blanks cut, drilled, glued, and faced with your most ordered tube size makes fulfilment far faster. Tubes for any kit are available as an independent part, letting you get ahead of some of the mundane work. Good luck with your current large order, whether you get timing or staged delivery relief, cancel it, or somehow tough through it.



Since I don't sell my work, my needs for batches are for classes, articles, or donations. Even then, my quantities are manageable



I've equipped my drill press with a laser marker that indicates the drill starting location. Not too expensive and certainly a time saver for any drilling needs



Nearly all pen-making processes, properly setup, can be easily taught to an assistant, allowing you to focus on whatever aspect you wish

Noisy lathe

Question: I'm getting noise from my lathe when I'm turning larger work. Smaller turnings don't seem to cause any issues but larger blanks seem to make the noise, but only sometimes. Do you have any ideas on what might be the cause? How do I fix it?

Answer: There are several things that might be the cause of your noise. You don't indicate what sort of noise it is, how loud, if it varies with rpm, and some other things that might help narrow it down. Let me give you what comes to mind.

From your information, I'm guessing the noise is coming from the bearings in the headstock. You might be simply putting too much stress on the headstock spindle and bearings with your workholding. Off centre, too heavy, or excessive speeds on mounted work can also make tired bearings whine or squeal a bit. For larger, heavier turnings between centres, most of us tend to really cinch up the tailstock more forcefully. Any excessive pressure on the headstock might be making weary and worn bearings complain to you. You say lighter work doesn't cause any problems. Over-tightening doesn't add any value. Be safe but only use sufficient force to keep the blank secure and safe to turn, allowing it to drive properly. You may find that you won't have any noise.

When you do get the noise, check the headstock area and spindle for heat. It probably will be warm but the heat shouldn't be excessive. You may want to start your search for replacement bearings. They really aren't expensive and can usually be replaced by the end user. The manufacturer's manual probably has a parts breakdown and a replacement part(s) number. You can get the bearings from them or, if you can find the OEM bearing part number, you can order it from another source. Not as an endorsement but for example, I've ordered and received high-quality, replacement of industry standard bearings in one day from Amazon at very competitive pricing (\$7.00 total cost).

Your owner's manual should show a breakdown of the headstock and how the bearings can be accessed. If you don't feel comfortable doing the work, I'm sure you'll have a capable friend in the club or acquaintance that can be enlisted. The person helping you need not be a turner or familiar with shop equipment. They need only be mechanically oriented and able to understand the drawings.



Not a lathe bearing but for example, without any premium the replacement for a problem bearing crippling my bandsaw operation was ordered online and in hand for installation the next day

With only typical shop tools, a handy person can knock out and properly press in replacement bearings with minimal tools. If this doesn't seem workable for you, find a local machine shop that will do the work for you if you bring them the headstock, assuming it is a bigger lathe. Mini lathes could be delivered for this work complete. You can also contact the lathe manufacturer's service department for guidance, recommendations, and any specific cautions. They likely have talked customers through the process in the past. While I don't recommend it, you certainly have the option of living with the noise, minimising it by how and what you turn, until the bearings give up. At that point, you only have the replacement option.

Favourite brand of CA

Question: It seems that my local woodturning dealer will no longer be carrying my favourite CA adhesive, or at least not getting any in stock for a while. Any suggestions as to what brand to switch to for CA finishes? What is your favourite brand?

Answer: If you can't buy your usual brand locally, I'm wondering if your retailer can ship from its online or corporate locations. If you have tried that and need to source somewhere else, you can always try to buy online from the wealth of online dealers. I've slightly altered the wording of your question to remove your dealer name and brand because it isn't pertinent. I'm also avoiding a specific brand

recommendation. Personally, used properly I've found that any brand of fresh, quality CA will work well as an adhesive and finishing product. That said, I obviously have a favourite brand that I try to use but I recommend you select your own. Reducing variability in any aspect of your process helps with uniformity and repeatability. If you select a new brand, you may wish to try a few different ones before you settle on one. Of course,

availability both short term and long term should be a large factor in your selection. As you do your search, you can always poll your turning friends and other club members for their input. You can probably borrow a few different brands from them for a simple trial as part of your selection process. A saying that I probably include too often is especially true here too. The magic is never in the tools, it is in the hands of the user.



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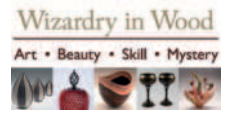
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Community news

The Worshipful Company of Turners introduces two of the exhibitors at this year's Wizardry in Wood, 13-16 October



Tobias Kaye, sounding bowl maker

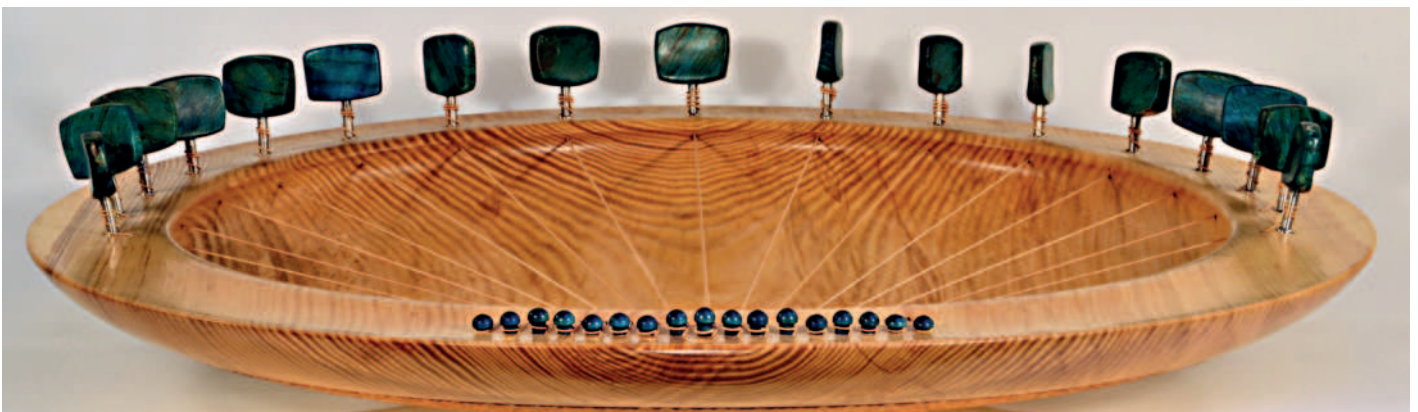
Tobias said: 'Recent months have seen orders flow from around the world. Sounding bowls are being used in recording studios, in health projects and private lives, from birth to death and the whole adventure in between.'

'On the Covid frontline, Jacob Marshall has been part of a team creating "recharge rooms" for stressed hospital workers (www.wired.com/story/covid-recharge-rooms-health-care-front-line). Jacob has an international following as a sound designer and uses an ash wood Lyre Bowl.'

'The smaller sounding bowls have also achieved a following and I have been offering meditations to contribute what I can to healing the stresses of this time.'

'The largest bowls we make have been selling off-the-lathe before they have been completed.'

We did a photo shoot last summer to complement the video at www.SoundingBowls.com. A sample is below. 'We also have product shots, poses and customer shots as well'.





Louise Hibbert

Louise has exhibited previously and has also won WIW competitions with her beautiful turned peppermills, which were bought by the Lord Mayor in 2016.

She has also sent through some exciting news – a piece of her work has just been acquired by the Renwick's permanent collection. This is the email she received:

'We would like to share some very exciting news with you!

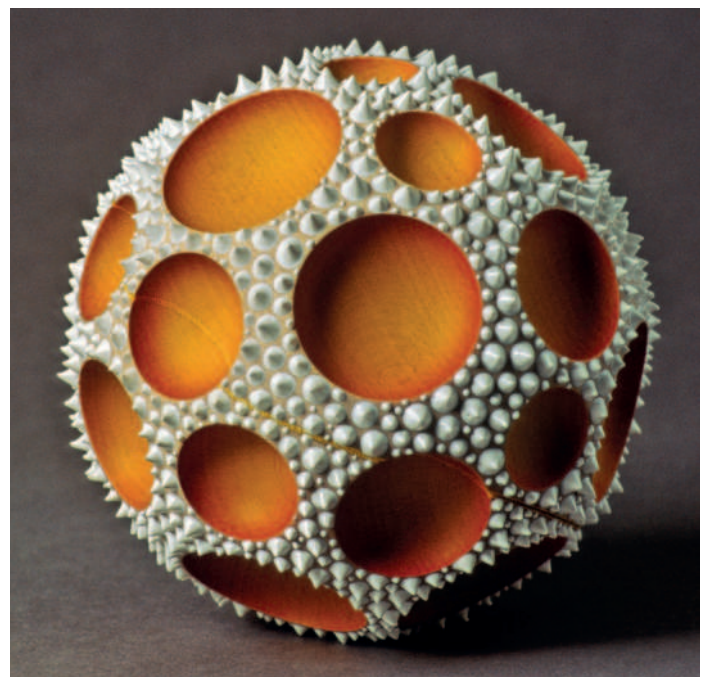
'After years of living with and loving our wood art collection as a whole, we decided we would start the process of deaccessioning part of it. We contacted curators at the Renwick Gallery of the Smithsonian American Art Museum regarding our desire to add wood art to the Renwick's permanent collection. After several years of discussion with multiple curators, current Renwick curators Mary Savig and Nora Atkinson, were given the green light by the Smithsonian to begin the process of selecting objects from our collection.

'Mary and Nora had maximum flexibility in what they could choose, visiting our home multiple times for in-depth study. Pieces of interest were researched and eventually put through an extensive review process as dictated by the Smithsonian. This resulted in the selection of over 40 pieces from 29 artists. We are very happy about the pieces they chose and also very pleased that, for 23 artists, this will be their first object(s) accepted into the Renwick's permanent collection.

'So, with that introduction, we are so very happy to inform you that we will be donating the following pieces to the Renwick Gallery: Radiolarian Vessel VII and Cinachyra Box. The donated pieces will be part of a building-wide exhibition taking place in honour of the Renwick's 50th anniversary. It is currently planned

to open in May, 2022. The details and planning for the exhibition are still being determined, but all of the pieces we are donating will be on display during the exhibition.

'In addition to our congratulations, we hope that you and yours are safe and healthy, especially during these challenging times.'





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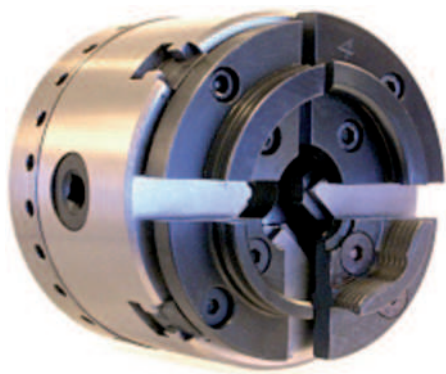
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Paper pot maker and seed dibber

Stephen Long turns a handy gardening set



The paper pot maker saves sowing time and I use these, along with a dibber, to start off my spring seeds. These are quick and easy to use and, being biodegradable, can be planted straight into your garden bed or flower pots when the seedlings are ready to go out. This dispenses with the need for plastic plug trays.

EQUIPMENT USED

Tools

- Personal and protective respiratory equipment (PPE)
- Spindle roughing gouge
- Parting tool
- Bowl gouge
- 38mm (1½in) Forstner bit
- Chuck
- Screw chuck

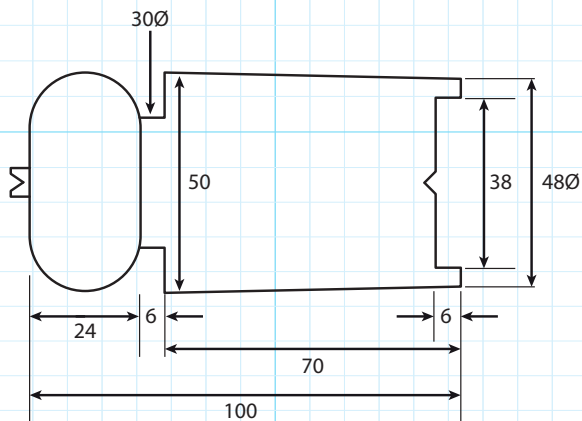
- Ring centres (matched)
- External callipers
- Abrasives 120-400 grit
- Finishing oil

Materials

- Pot former: 58mm x 58mm x 105mm
- Base: 75mm x 75mm x 30mm
- Dibber: 25mm x 25mm x 125mm

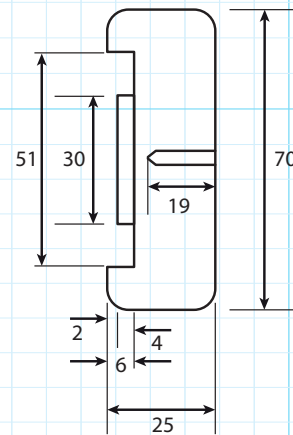
PAPER POT MAKER

All measurements are in mm



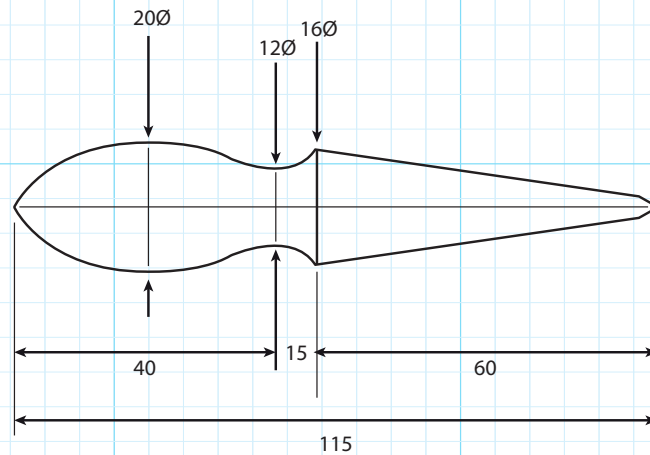
POT FORMER

Blank = 58 x 58 x 105mm



BASE

Blanks = 75 x 75 x 30mm



SEED DIBBER

Blank = 25 x 25 x 125mm

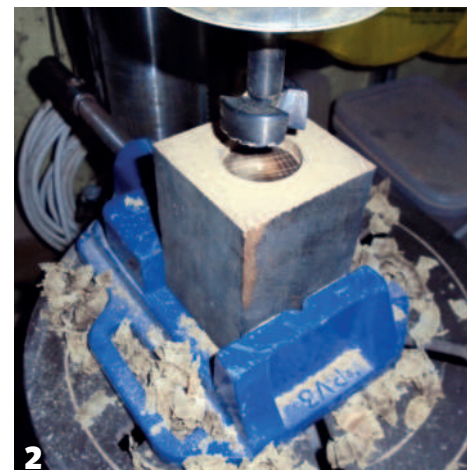
The pot former

1 These are from an old oak fence post and pallet wood.

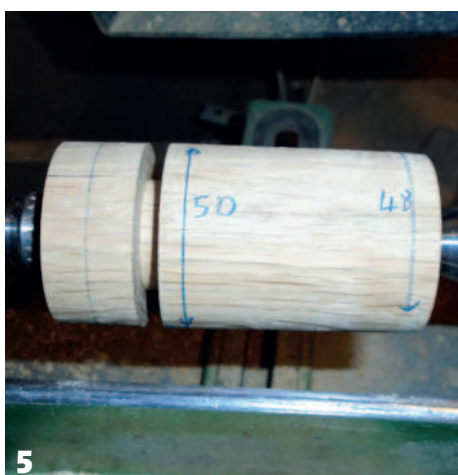
2 Set the former blank up in the vice on a drill press – note the vice handle is against the drill pillar to stop the vice from swinging. In the blank end, drill a hole 6mm deep with a 38mm-diameter Forstner bit at the centre position.



1



2



3 Set the blank between centres with the tailstock centre in the Forstner centre. Rough to a 50mm-diameter cylinder using a spindle roughing gouge and outside callipers to check the diameter as you progress. On the headstock end put a spigot to clear the centre mark.

4 Mark off 70mm from the tailstock end.

5 With a parting tool cut a slot 6mm wide x 10mm deep to give a 30mm diameter at the base. Now taper the 70mm end down to 48mm diameter at the tailstock end. This is to allow the paper pot to easily slide off the former. Now round over the headstock end to form a handle. Sand to a finish.

6 Cut off the centre spigot using a small pull saw and sand the handle end to a finish.

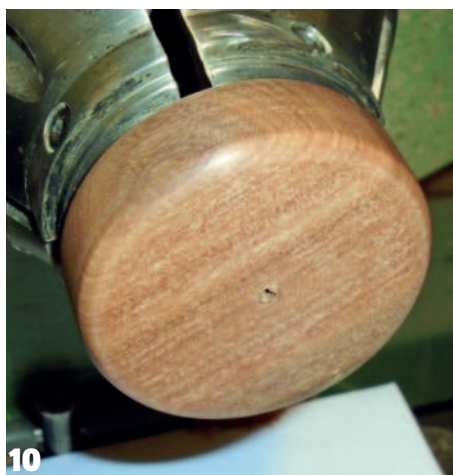
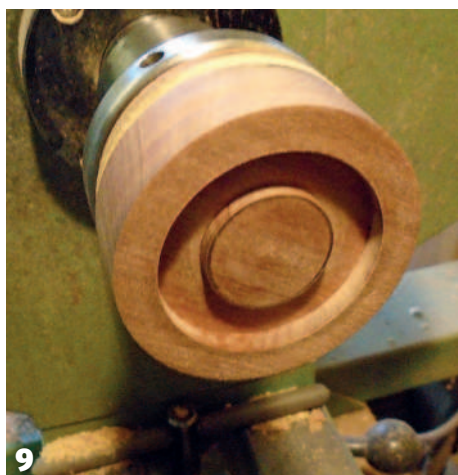
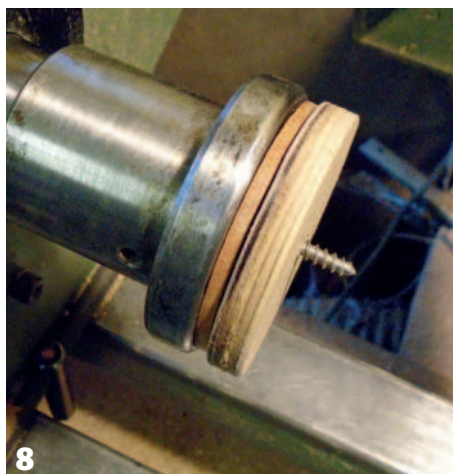
The base

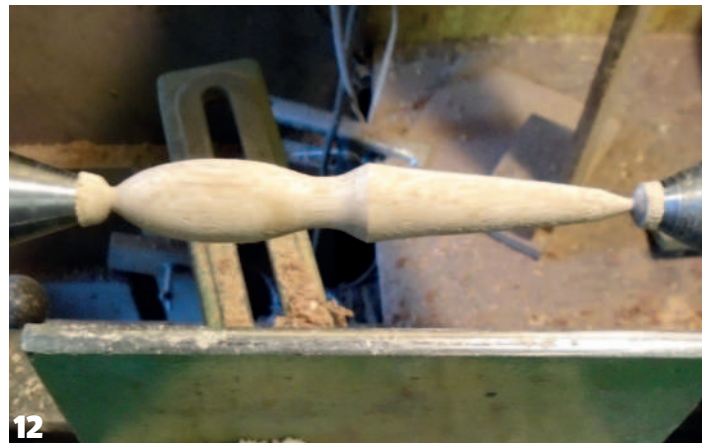
7 Drill your hole to suit your screw chuck 19 mm deep in the centre of the blank. Don't go all the way though.

8 Use wooden spacers to leave the screw length of 18mm protruding from your screw chuck.

9 Attach the blank, turn to 70mm diameter and hollow out the centre to 2mm deep and 51mm diameter. Then hollow out the rim to 6mm deep to leave the 30mm island in the middle. Round over the sharp corners and sand to a finish.

10 Remount the base using the chuck jaws to grip on the recess then clean up the face and round the corners to fit nicely in the hand. Sand to a finish.





Seed dibber

11 Mount the blank between centres and turn to a cylinder 20mm in diameter. Put spigots on each end so that you can remove the centre marks later. Mark off 60mm from the tailstock end and 40mm from the other end.

12 Use the roughing gouge to shape the tapered end from the 60mm mark to the tailstock. From the left-hand side of the 60mm mark undercut the part to 12mm diameter, making a flowing curve. Round over the other end – use the wing of the gouge to achieve the point. Sand to a finish.

13 All the parts are now ready to be oiled.



How to make a paper pot

14 Cut strips of newspaper approx 100mm wide x 360mm long.

15 Wrap paper around the former and fold the bottom end in.

16 Use the base part to form the bottom of the paper pot by twisting. This will shape the pot bottom.

17 Your pot is ready to use. ●



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Better power sanding

Mark Palma shares his tips for improved abrading

Whether you find sanding to be something you enjoy, or just barely tolerate, it is part of the turning process. If we can develop better ways to power sand our work we can make sanding more enjoyable and achieve an improved outcome.

Buy better discs

Abrasives are a tool that we use in the pursuit of a smooth surface. Just as you know that cheap tools do not cut well, neither do inexpensive abrasives. Good abrasives have more uniform grain and better backing materials. They cut cleanly and you can see a clear dust trail as they touch the work. Look for film or cloth-backed discs if you experience edge wear problems. Wavy edge or oversized discs help to avoid digging in on the inside of bowls and plates.

Discs are a consumable tool, so do not get attached to them

Abrasive discs wear quickly, so think of



Quality sanding discs

their lifespan in minutes, not months. A 2in or 3in disc spinning within a bowl is subject to a lot of abuse. Dust builds up within a bowl and under a disc very quickly. The first disc you start with will quickly get consumed in the initial sanding. You are best off tossing it into the bin as soon as you take it off the sander.



Old ones are garbage

Finer grits may last for a few bowls, but they wear out as well. You can extend disc life by using a sandpaper cleaning block to unclog the abrasives from dust trapped in the discs. A quick pass over a cleaning block can make a big difference in reducing heat and extending disc life. If you want a better outcome, replace discs far more frequently.

PHOTOGRAPHS BY MARK F PALMA

Use interface discs between your sanding disc and your abrasives

Sanding discs can be expensive but can have their life extended. Use an interface disc between the two. Hook and loop surfaces can wear and clog. An interface pad takes that wear in place of the disc holder. This is particularly the case on edges of the disc. Secondly, interface pads allow you to modify firmness of the surface of the sanding disc. Some even have rounded edges to allow the disc holder to create a softer edge to curl around. Between the hook and loop sections various densities of foam can be used by manufacturers. Intermediate or soft pads allow you to get into corners and areas where a sanding pad can dig into the curves of a bowl.



Homemade and purchased interface pads

Speed and heat are your enemies

A common mistake in power sanding is the failure to watch the cumulative speed of both the lathe and the drill driving the sanding disc. Heat can build quickly between the abrasive and the wood's surface. Slow the lathe way down and use a variable-speed drill at a lower rpm level when sanding. You need to let sawdust escape from under the disc or you will burn the dust right into the disc itself. Disc sanding is more efficient if the workpiece and the sanding disc are running in opposite directions. Be particularly careful with grits after 180. Slow down the lathe even further as the small spaces between the abrasive grains can become packed with sawdust quickly when power sanding. If the disc is getting hot it needs to be thrown away and replaced with a new one. If you are not seeing dust coming off the disc, you need to replace it.



Reduce lathe speed for better sanding

Use quality disc holders & not too much pressure

Your drill speed should not change after you start sanding your work. If your drill speed starts to slow, you are pushing the drill too hard against the work. Listen to the drill. Your disc should just be touching the work, not grinding against it. Pressure does not speed up sanding it only introduces heat into the work. Heat can actually rupture the wood cells and cause checking and cracking, even in dry wood.



Quality disc holder

Work problem areas with the lathe off

The lathe does not have to be on to power sand your work. If you have problematic grain or tear-out a little power sanding with the lathe off can help those areas. As a side-grain bowl rotates on the lathe the harder grain at 12 o'clock and 6 o'clock causes the tool to skip off the bowl at 1 and 7 o'clock. Frequently there can be tear-out at those areas, particularly near the rim. A little touch-up with a spinning disc can fix those areas.



problem areas

Power sanding benefits from some hand sanding

It is a common misconception that power sanding eliminates scratches on the work. Power sanding can result in some radial scratches on the surface of the work. Power sanding won't eliminate radial scratches. If you shut off the lathe and sand with the grain you can get a better end result. Hand sand with the last grit you used to power sand. Some pieces and species of wood require hand sanding after every grit with the drill.



Hand sand to remove radial scratches

SAFETY WHEN POWER SANDING

Power sanding has some inherent risks that we should address. Power sanding creates dust so use efficient extraction whenever you sand. Make sure the toolrest is removed whenever you use a drill to sand at the lathe. Be careful with cords and keep them away from the spinning work and the chuck jaws. Remember that dust builds up in the drill. Take it outside and blow it out after every few sanding sessions. You will be amazed at the amount of dust that comes out of the ventilation slots and drill internals. Finally, recognise that power sanding can result in some torque that you need to manage. Keep a firm grip on your drill and do not get distracted while you are sanding at the lathe. ●



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Community letters

What have you been turning? Please email your images to WTEditorial@thegmcgroup.com

Inspired box

Here is a photo of the finial box I made from issue 354 using a piece of yew. I had great pleasure turning this box as I am relatively new to woodturning and your magazine is very informative and gives me inspiration. Looking forward to the next issue.

Kindest regards, Phil Hounsham



Lockdown segmented bowls

I thought you might like to see some of the segmented bowls I've made over lockdown. I used the wedgie sled system on my tablesaw to cut the

segments with the saw angled to 20°.

There are 177 pieces in each bowl, and most have floating bottoms, but not all.

Kind regards, Gerald Ruddick



Inspired clock

I drew inspiration from issue 354 of *woodturning* magazine. I saw the tricylinder and thought I'll have a go at that with a view of placing a watch face in it and turn it into a desk or bedside clock. I went about making it as described in the magazine. However, one face I made the hole slightly smaller so as to accept the watch face. Once I had turned and shaped the tricylinder I then decided to put the fake rust look on it. I am very pleased with the finished piece. Hope you like it as well.

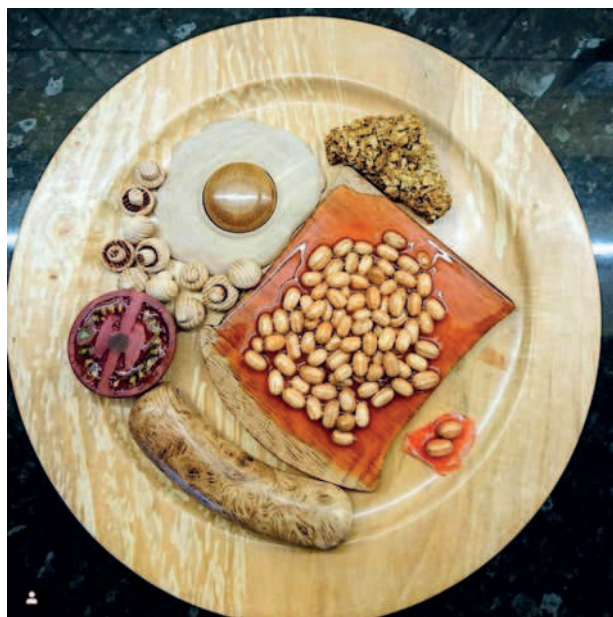
Thanks, Gareth Garner



Bird box bonanza

I was quite taken with Richard Findley's bird box in issue 349. I've been making bird boxes for about 15 years now. My bird boxes are usually made out of redwood, either new or reclaimed, and vary in design. Here's a photo of one I made years ago in hardwood.

Yours faithfully, AO Walkden



A full (turned) English

The Breakfast sculpture I created during lockdown. I was inspired by our focus on food and overindulgence and I thought it would be a good idea to create a non-edible meal. I used an assortment of different woods to reflect the foods I recreated. My projects tend to be made up of smaller woodturning or carved items that collectively make a larger piece.

Only in lockdown would turning 100 or so baked beans – made of ash – seem like a sensible idea. Experimenting with acrylic bean juice recipes made a welcome warm indoor job.

The bean tin was made from elm, stained blue and fitted with a rosewood with elm veneer label and gold leaf border.

The Alice in Wonderland cake developed due to a woodturning club competition at our Isle of Wight club (Wight Woodturners). The task was acentric/off-centre turning and I felt this lent itself to a cake design. The dress was the most challenging part; turning wet magnolia very thinly, then stacking the pieces inside each other to create the dress and petticoats. The legs were carved and added separately.

The Painting in Wood sculpture was again designed for an open competition at our club. I enjoy making fluid sculptures and felt paint was an ideal subject to display this concept. The brown paint was turned offset in one piece from a walnut bowl blank, then cut away to reveal the shape. It was entered into the 2019 woodturning competition run by your magazine and was exhibited at the OXO building.

Regards, David Ives Woodturning





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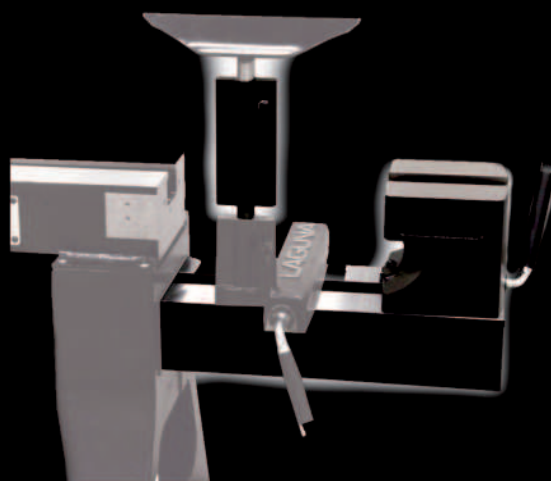
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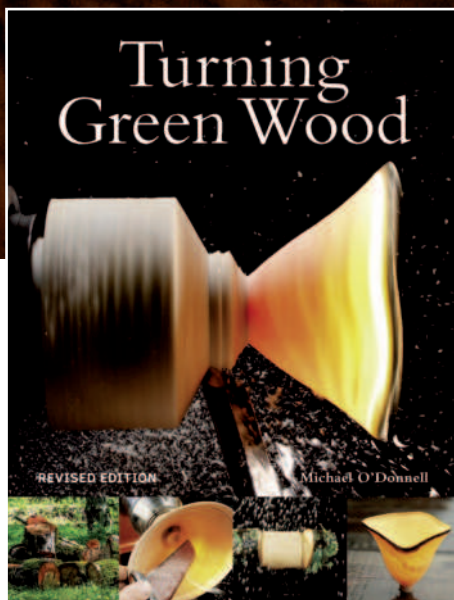
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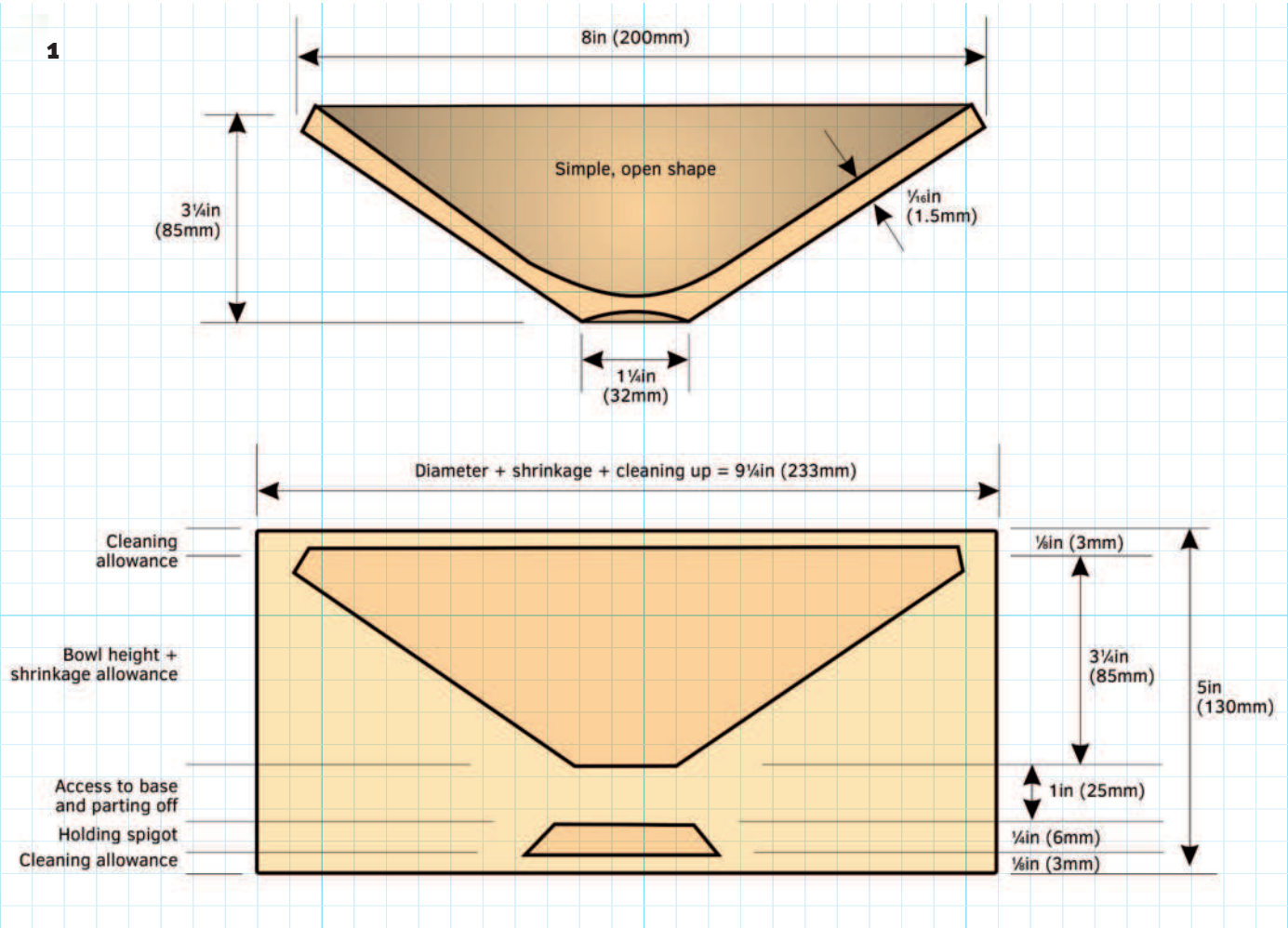
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Translucent cross-grain bowl

Michael O'Donnell turns a thin, translucent bowl, an exciting and challenging experience that will build your confidence for any type of turning



Turning Green Wood by Michael O'Donnell, GMC Publications, RRP £16.99, available online and from all good bookshops.



1 Translucent cross-grain bowl: a suitable design for a first green turning project

Design

The shape should be as simple as possible: a shallow V-shape is ideal. The example shown 1 has a finished size of 8in diameter by 3 1/4in high (200 x 85mm), and is 1/4in (1.5mm) thick.

Sizing the blank

The finished bowl is to be 8 x 3 1/4in (200 x 85mm).

Material selection

We need a piece of close-grained hardwood large enough to make the blanks; it should be fresh, still in the log. Sycamore, holly, beech or maple are all suitable, being easy to turn, light-coloured and translucent when thin.

Planning the making process

1 Mark out the blanks on the end of the log, having first sawn off a slice about 2in (50mm) thick to get rid of any end cracks.

2 Cut a section 10in (255mm) long with the chainsaw.

From this, cut a slice for the bowl blank using either chainsaw or bandsaw. Draw the circle on the slice and cut out the circular blank on the bandsaw.

3 Turn the outside, holding the bowl on the top with either a single-screw or a multi-screw chuck. Make the spigot for mounting on the second chuck. Use the 1/2in (13mm) deep-fluted gouge for the whole of this stage.

4 Turn the rim and the inside, holding on the base with a spigot chuck, using the 1/2in (13mm) deep-fluted gouge and

	DIAMETER		HEIGHT	
	in	mm	in	mm
Bowl size	8	200	3 1/4	85
Shrinkage allowance, 8–10%	3/4	20	1/4	8
Cleaning-up allowance:				
Sides	1/2	13		
Top			1/8	3
Bottom			1/8	3
Parting-off allowance			1/4	6
Access allowance			3/4	19
Chucking allowance			1/4	6
TOTAL	9 1/4	233	5	130

the 1 1/2in (38mm) round-ended side-cut scraper.

5 Sand by hand, wet, starting with 100-grit down to 240-grit abrasive.

6 Part off with the 1/4in (3mm) parting tool.

7 Sand the base by hand, slightly hollowing the centre.

8 Dry the piece for 24 hours in warm conditions.

9 Apply finish, away from the lathe, by hand or spray.

◀ Making the piece 1: Marking out the blank

First cut off a 2in (50mm) section from the end of the log to remove any splits in the end grain. Pick out the position on the end of the log where you want to make the blank, then draw a centre line for the bowl which goes through the pith (1a). This will ensure an even grain pattern each side. You can then proceed to draw the bowl where you want it around



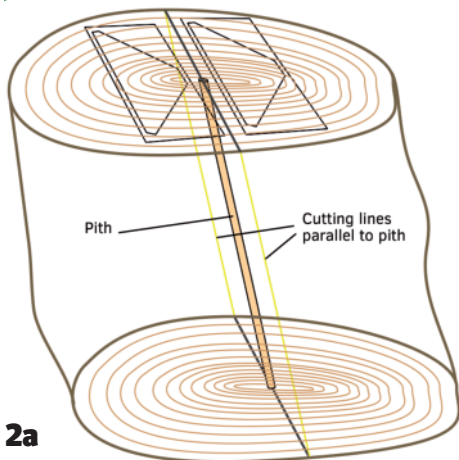
1a
The first mark made on the end of the log represents the centre line of the bowl; it passes through the pith at the centre of the log



1b
The shape of the bowl marked out on the end of the log, with additional space left below the base of the bowl as a holding allowance

2: Cutting the blank

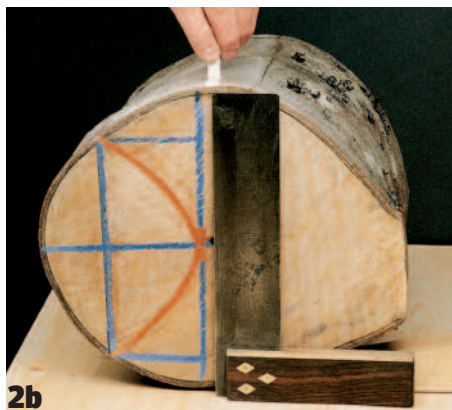
The next thing to do is to cut off a slice from the log about 10in (255mm) long – that is, $\frac{3}{4}$ in (19mm) more than the blank diameter. Examine the other end of the blank to check that the pith is still in the same place and that there are no other defects that would affect the bowl. If, as often happens, the pith has moved to a slightly different position, we must take account of this in slicing up the log; otherwise the pith might run into the bowl. On the top surface, draw a line through the pith parallel to the tops of the bowls. Then draw a similar line through the pith on the bottom of the log parallel to the line on the top. Join these lines with a chalk mark down the side of the log.



2a
The blanks must be aligned with the pith throughout the length of the log to ensure that the pith is not included in the finished bowls. Draw a line through the pith on each end, then join these lines with a chalk line on the outside

This line will be parallel to the pith (2a, 2b). Align this mark with the bandsaw blade by tilting the table before cutting out the slab (2c, 2d). Once the slice has been cut, the circle is drawn on the top surface and the round blank cut out on the bandsaw (2e). If the cutting is done accurately there will be no need to true up the blank on the lathe afterwards. All that remains now before mounting the blank on the lathe is to drill a pilot hole for the screw chuck; this is best done with a pillar drill for accuracy (2f).

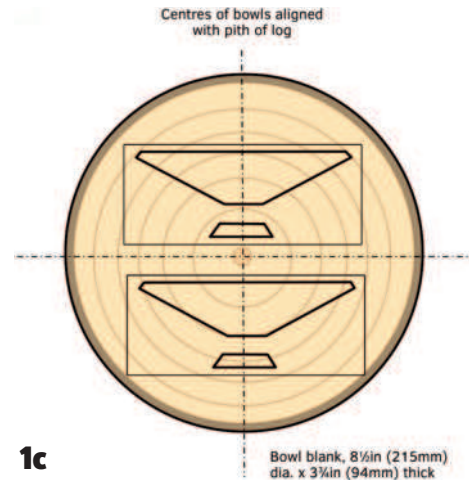
Whatever you do, don't leave the blanks lying around the workshop for a few weeks, or even days, after preparing them, as they are liable to crack due to stresses caused by differential drying. Only cut the blanks you are going to turn on that day – unless you are going to make special storage plans, such as putting them in a plastic bag with wet wood shavings and keeping them in a cool place.



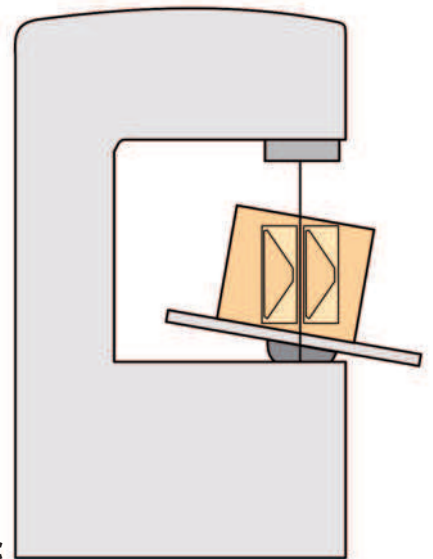
2b
Drawing datum lines down the side of the log; for convenience, the log has been wedged in position so that the datum lines on the end are

this line, then add on the allowances to make up the bowl blank (1b). It doesn't really matter if the pith is included in the allowance for holding, as this material will later be turned away.

Having marked out one blank, mark out a second one exactly (or as nearly as possible) the same, so that it will follow the same turning process (1c).



1c
Two blanks marked out on the log end ready for cutting out



2c
Tilting the bandsaw table to ensure that the blade is in line with the pith



2d
The bandsaw blade correctly aligned with the datum line of the side of the log



2e

The slice has now been cut and the circular outline of the bowl blank drawn on the top of it. This enables an accurate blank to be cut which will not require truing on the lathe

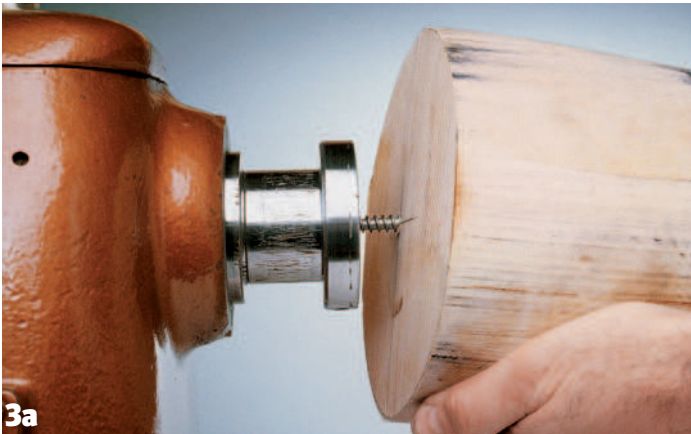


2f

Using the pillar drill to bore a pilot hole for the single-screw chuck. Some of the original marking out on the end of the log can still be seen

3: Turning the outside

Mount the single-screw chuck on the lathe, then mount the blank on the chuck (3a). 1,000rpm will be about the right speed for the lathe, and if the wood is really fresh it will spray sap around the workshop; you need to be aware of this in case there are items around which require protection against the moisture.



3a

Mounting the prepared blank on the single-screw chuck

The best tool to use for turning is a $\frac{1}{2}$ in (13mm) deep-fluted gouge, sharpened with the O'Donnell grind. As the blank is reasonably round and in balance, there should not be any need to spend time truing it up – just get straight into making the bowl shape. To work with the grain on the outside of a cross-grained bowl, the tool should point from the base towards the rim. In this position the tool will be horizontal (or the handle slightly lowered), and good tool control is achieved as the bevel contact on the wood is behind the cutting edge.

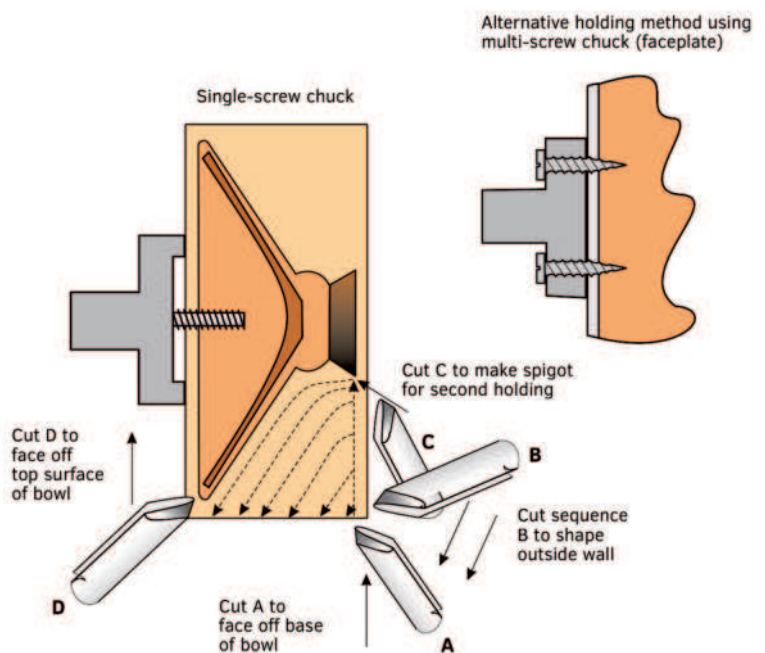
The ideal body position is behind the tool, looking down the bevel, standing in a dynamic stance and ready to 'work away from yourself' (3b). I find the Graduate short-bed lathe ideal for this situation, as it gives access all the way around the bowl. On lathes with a long bed and a fixed headstock, the best place to stand is on the opposite side of the long bed, working across it. Swivel-head lathes can be swung to give you the space you need.

3c–3i: note how the direction of cutting follows the intended shape right from the first cut.



3b

Adopt a dynamic stance behind the tool, looking down the bevel



3c

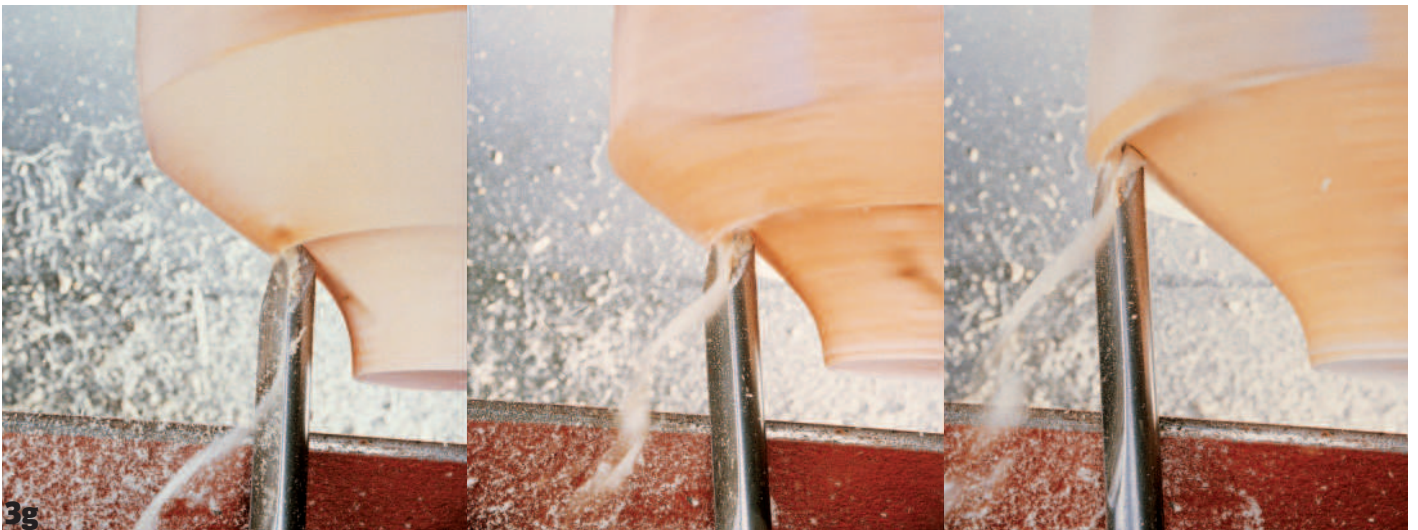
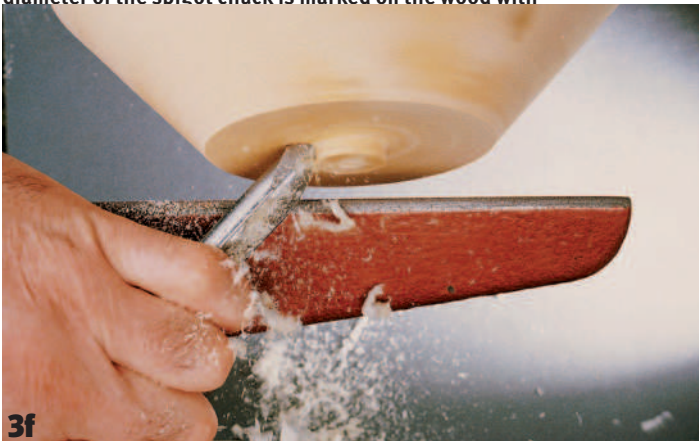
Turning the translucent cross-grain bowl: first chucking and cutting sequence



Having faced off the surface which will be the base of the bowl (cut A), cut sequence B is begun by chamfering the corner of the blank. Even at this initial stage, the gouge is moving in a direction which follows the intended shape of the bowl

As cut sequence B proceeds, the conic profile of the outside rapidly develops

While the base of the bowl is still at least 2in (50mm) wide, provision must be made for forming the spigot which will be used for the second chucking. First, the base is trued once more if necessary, then the internal diameter of the spigot chuck is marked on the wood with



Cut sequence B can now be completed, leaving untouched the circular area which has been marked out for the spigot



3h
Forming the dovetail spigot (cut C)



3i
Cut D, facing off the upper surface of the bowl, completes the first chucking



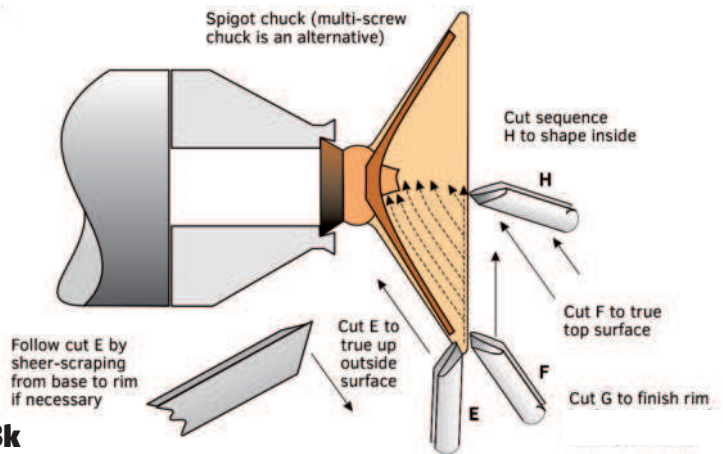
3j
Reverse-chucking: mounting the dovetail spigot in the O'Donnell jaws

Don't even think about which hand the tool is in – just do it. Make a spigot for the spigot chuck, 2in (51mm) in diameter (or a shallow recess to take a faceplate, if you prefer), and finish by facing off the top surface of the bowl.

Having completed the toolwork on the outside, the bowl can be turned round and held in the second holding position for the inside to be turned (**3j**).

The next phase of the turning sequence is summarized in (**3k**). In theory, if you made a good spigot and you have a good, accurate chuck, then the outside of the bowl will be running true and there is no need to touch it again. In any case, if the bowl is going to be a thick one (more than 1/4in (6mm), a small amount out of true does not matter. But for a thin bowl (less than 1/16in (1.5mm)) even the smallest inaccuracy will be very noticeable, as it will result in an uneven wall thickness – so it is definitely advisable to true the outside now before proceeding further.

Ideally, another cut from the base to the rim should be sufficient to true it up, but in practice there is not room for the tool to approach from this direction. So, with a newly sharpened deep-fluted gouge, make a cut slowly and carefully from the rim to the base (**3l**); this is necessary to obtain a good finish.



3k

Turning the translucent cross-grain bowl: second chucking

Since we are going against the grain here, there is a small risk that this cut will produce a poor finish on some woods; if this does occur, clean up the surface afterwards with a shear-scraping cut, with the tool facing from the base to the rim (**3m**). The top surface is then trued with the deep-fluted gouge (**3n**).



3l
A careful cut from rim to base (cut E) should be enough to true the outside



3m
If cut E has not produced a good finish, shear-scraping from base to rim will rectify the problem

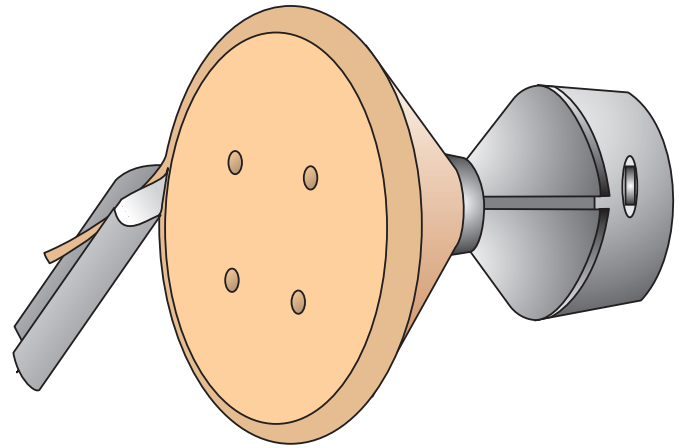


3n
Truing the top surface (cut F)

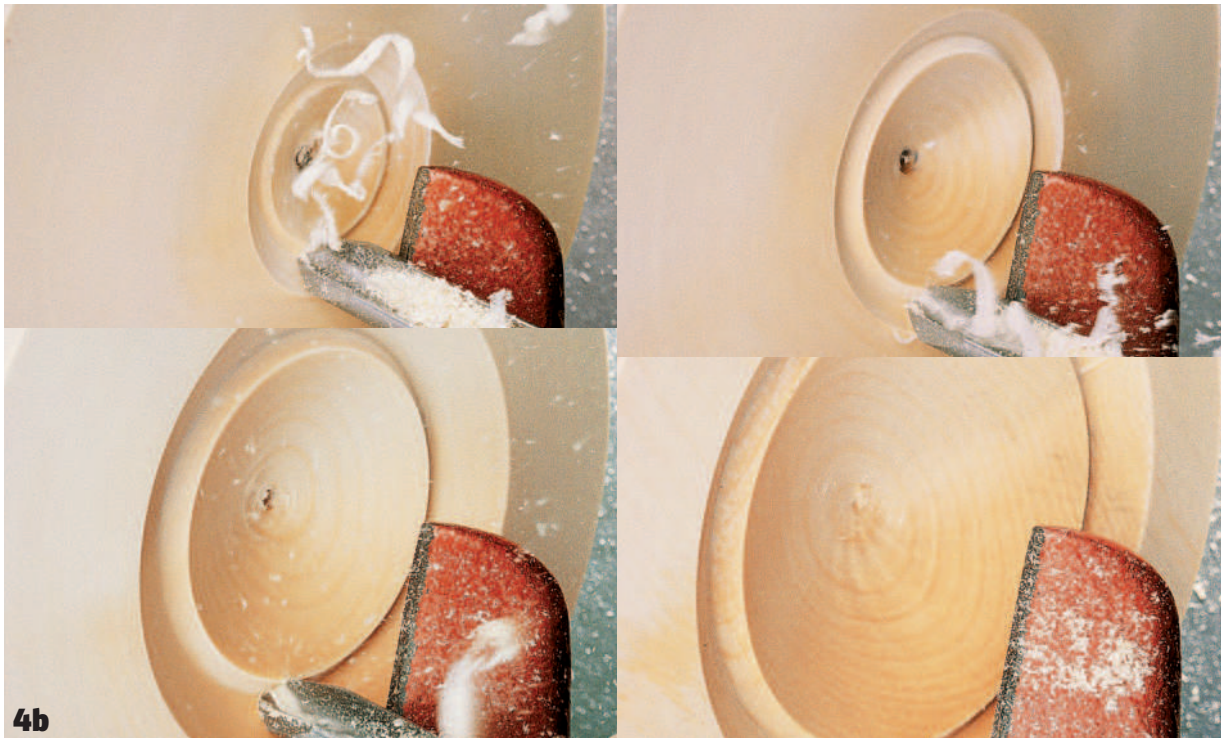
4: Turning the rim and the inside

The rim is next; it is going to be square to the sides, so that the width of the rim is the same as the thickness of the bowl. This is the only cut I make with the tool pointing tangentially around the bowl; heel contact is under the cutting edge, and the tool is twisted to either side from the centre until the rim is a little wider than required (4a).

The process of hollowing out the bowl starts in the centre, making each cut follow the final shape, just as you did on the outside (4b). If you are doing it right, the tool will be in the opposite hand to that used on the outside. Regular sharpening is necessary, particularly as you come to the last cuts. Never sharpen the gouge for the very last cut because, moving away from your turning stance, you will lose the flow and rhythm you have built up, and coming back will be almost like starting again. It is far better to sharpen the tool when there are two or three cuts left to make, so you have a chance to regain the flow and rhythm.



4a



Finishing the rim (cut G); the gouge points tangentially around the bowl and is twisted from side to side

4b Hollowing the inside (cut sequence H)

If the bowl is getting dry, water it to keep it moist, **but only if there is no risk of the water coming into contact with the machine's electric**s.

When the wall is about $\frac{3}{4}$ in (19mm) thick, put a lamp behind the bowl so that the light shining through it gives you a visual measure of thickness as the cuts proceed. Again, watch the electrical safety. This is also a good point to start supporting the bowl with your fingers; it will need this support as it gets thinner. The side of the hand is placed on the toolrest, the fingers are on the outside of the bowl and the thumb on top of the gouge. The fingers should be directly supporting the tool through the wood (4c). What you have to watch for is the bowl breaking, so a glove is advisable. You will not be able to support the bowl with your fingers all the way down, so as you get to your limit gradually relax the support hand and take it away, while the cut continues using the control hand only (the 'control hand' is the one holding the handle). The support hand can then resume support of the tool in the conventional manner.

Don't leave just a tiny amount to take off with the last cut, as it is much easier to take off $\frac{1}{8}$ in (3mm) or even $\frac{1}{4}$ in (6mm), even though you are only leaving a final wall thickness of $\frac{1}{16}$ in (1.5mm) or less. You really have to be positive in making these cuts – don't worry if you go right through the first one, as confidence and ability will come with practice. Once you



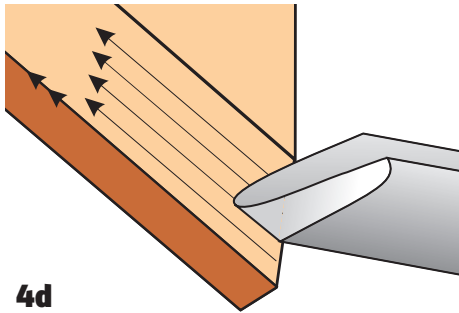
4c

4c A late stage of the hollowing sequence, showing use of fingers to support the bowl (you may prefer to use a glove) and light shining through the bowl wall as a guide to

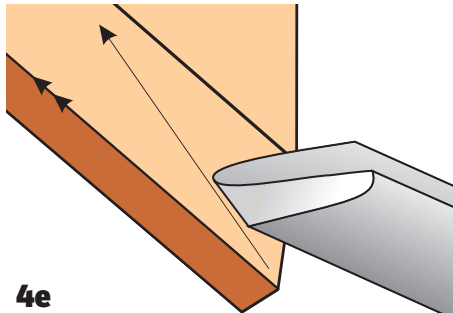
have turned a bowl $\frac{1}{32}$ in (0.8mm) thick, then $\frac{1}{16}$ in (3mm) will be easy.

Making the entry for the last cut requires care. There are two alternative ways to make it easier. The first is to make a few short, shallow cuts, about $\frac{1}{2}$ in (13mm) long, gradually build up to the full depth of the cut and then go right ahead with it (4d). The second is to chamfer the waste in from the edge, then make the start in the normal way (4e). The trickiest bit of all is the centre spot in the bottom: you don't want to rip the grain deeper than the intended shape, or leave a small, annoying pip.

TWO WAYS OF PREPARING FOR THE FINAL CUT ON THE INSIDE

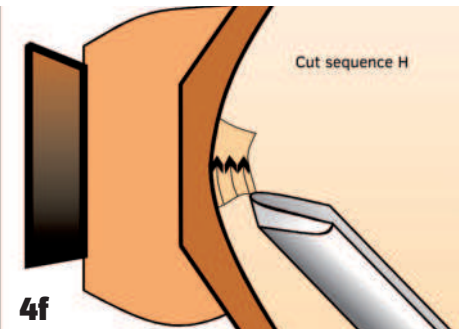
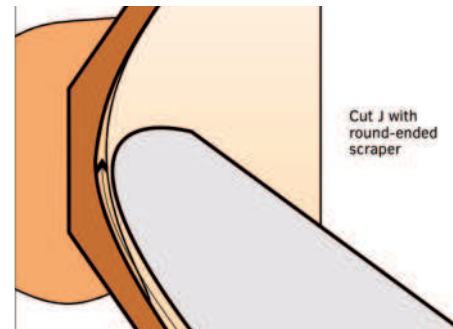
**4d**

Make a few short cuts of gradually increasing depth, then take the whole cut in one go

**4e**

Chamfer the edge of the waste so that the depth of the final cut will increase gradually

For the best results, stop the last two cuts when they are down to 1in (25mm) diameter, then finish the bottom separately, taking fine cuts with the tip of the deep-fluted gouge, making sure that the tip is at centre height as it finishes (**4f, 4g**). If necessary, a big scraper can be used to clean up in the bottom of the bowl (**4h**), but don't bring it all the way up the side to the rim, as there is a high risk of shattering the bowl. Sheer-scraping with hand support will improve the finish and reduce risks

**4f**

Last stage of hollowing: the final 1in (25mm) is taken in very fine cuts with the deep-fluted gouge (end of cut sequence H), then smoothed with the big scraper (cut J) if necessary



The final cut in sequence H leaves a small boss in the centre which can then be removed by nibbling with the tip of the gouge



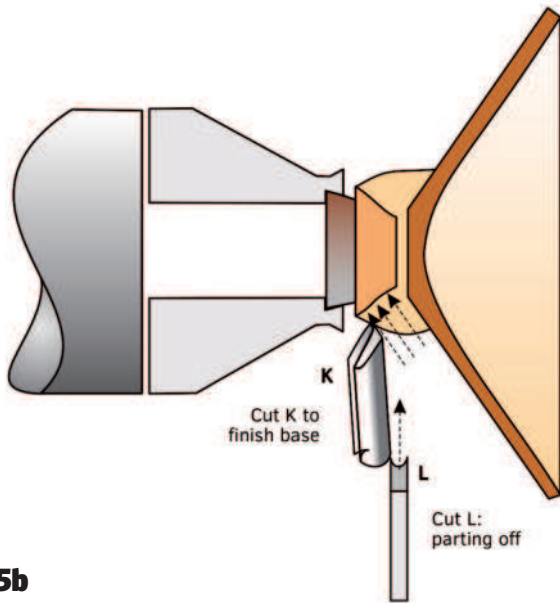
Cleaning the inside with the round-ended scraper (cut J)

5: Sanding

Most of the bowl is now finished and ready for sanding, which is best done before we finish the base. Wet-sand with 100 to 240 grit (**5a**). The outside of the base, which was previously left heavy so as to give sufficient strength to turn the inside, can now be finish-turned with the deep-fluted gouge (**5b, 5c**); sand this area separately.



Sanding inside and out with cloth-backed abrasive



5b

Finishing around the base and parting off

6: Parting off

Part off with the $\frac{1}{8}$ in (3mm) parting tool in the left hand, while the right hand is callipered round the bowl ready to catch it as soon as it is separated (6a).

7: Finishing the base

This leaves only the bottom to be finished. Use a hand scraper to create a hollow in the centre, then sand the centre and the edge by hand. Alternatively, if you want to turn the underside of the base, mount the bowl in the wood jaws of a scroll chuck and clean up the base with the deep-fluted gouge, followed by sanding.

8: Drying

As this piece is very thin, there should be no problem with putting it into warm conditions straight away; it could be dry in a couple of hours.

9: Applying finish

This is a decorative bowl, for which I prefer to use a hard finish. Spray on three coats of Craftlac melamine.

Conclusion

It is not just the turning technique that is important in a project like this, but the whole process you have been through, and the best way to progress is to repeat it again and again. Try working in small batches, doing all the outsides then all the insides, and don't worry if one or two of them go wrong – just get on with the next. This practice will stand you in good stead. ●



5c

Finishing the foot of the bowl (cut K)



6a

Parting off (cut L)





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Croquet set, part one

Colwin Way makes the mallets
for his two-part project



Before we start looking at the project we're about to embark on, I'm going to hold up my hands and admit that I'm no authority on the rules or history behind the game of croquet. What I do know is that it's great fun on a lazy sunny afternoon to be enjoyed with the family while the barbecue is cooking. Let's look at the rules briefly first though, this will give us an idea of the parts required. We are going to make a full set for four players so this means four mallets, four balls, six hoops and two scoring pegs. Each player

has one mallet and one ball. Alternatively, you can have two players with two balls as you make your way through six sequenced hoops and finally to the scoring stick. This has given us a great series of turnings to make, so we're going to split the project up into two sections to cover all the techniques properly. In this issue we will look at making the mallets, which will give you all the knowledge to go on and make your own workshop mallets as well. This is a great little project and much easier than it first looks.

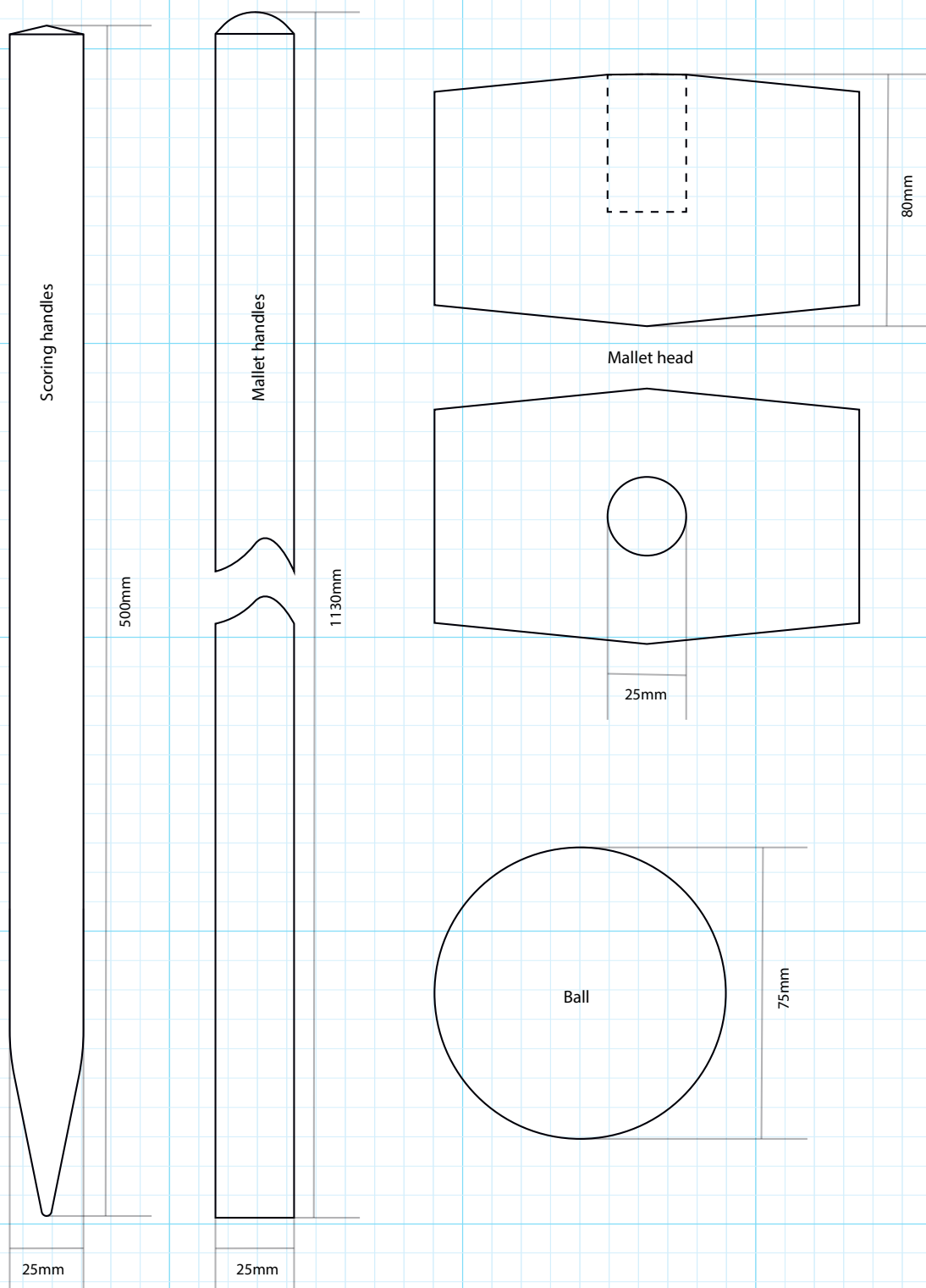
EQUIPMENT USED

Tools

- 24mm Forsner bit
- Sanding disc
- Pull saw
- Flushcut pull saw
- Wood glue
- Wood stain
- Brush for stain
- Hammer
- Coloured tape (red, blue, yellow and green)
- Exterior varnish
- 19mm roughing gouge
- 6mm parting tool
- 25mm skew
- Abrasive (100, 150, 240, 400)

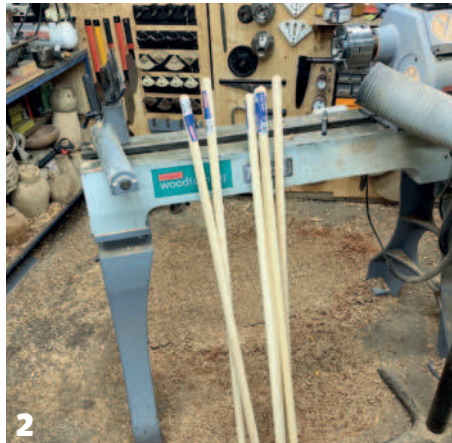
Materials

- 5 x 24mm diameter broom handles





1



2



3



4



5



6



7



8

1 Probably a good place to start would be with the timber we're going to use. It's good to use something strong and hard when thinking about the mallet heads and the balls. It's also important to pick timber with the same density, so I've decided to use beech for both and opted for pre-cut blanks for ease. I'm going to use two of the pieces for the mallet heads and the other for the balls.

2 I thought about turning the handles for the mallets but looking at the length of them, I would have to put the bed extension on the lathe and add a steady. This would start to make the project a much harder task than it needs to be, so for this reason I decided to use broom handles instead. The handles are 24mm in diameter plus they are fairly cheap – mine cost me just a couple of pounds each.

3 Let's start by cutting the mallet head timber to size. The blanks are already 300mm or 12 long inches, so all we need to do is cut them exactly in half. Measure accurately with a rule and make a shallow cut with the bandsaw, then flip the timber over and use the cut line as a sight line to cut along.

4 Now we have our four pieces of beech cut to length, you will need to drill your hole ready to accept the broom handles. The plan is that the handle goes all the way through and is held in place with a wedge. It's obviously important that the holes are drilled in the very centre of the blocks, so take some time marking out.

5 On to the pillar drill. Because we're drilling a fairly large hole it's important that we clamp the piece to be drilled down to the table. Just holding this piece by hand won't do as we are likely to get a grab if there is any movement at all, and this can result in serious injury. I've used a simple F-clamp for hands-free drilling.

6 Set your drill up for the operation first by making sure you have the depth to drill all the way through your blank, you have enough drill exposed and the blank can fit under the drill bit. Not all pillar drills have enough capacity, so you may be forced to stop the drill halfway through the cut to adjust the drill.

7 Now that you have your hole all the way through the blank it can be mounted to the lathe, taking as much care to centre between centres as you did to drill the hole centrally. We've drilled first as it's much easier to drill while the blank is square than if we waited until turned and had to contend with a holding issue and potential for drill breakout.

8 Now you can take your blank down to a cylinder ready for shaping – this is a fairly straightforward procedure using the spindle roughing gouge. Take gentle cuts with a slow feed rate to keep the cut clean but don't be tempted to check for round with your hand while the piece is moving as we must not forget it has a hole through the centre which could catch your fingers.

9 Before we start doing any real shaping it's good to trim each end to length and make clean from marks and saw cuts. Stop the lathe and measure exactly half way with your rule and mark with a pencil, now mark the two further lines 72mm out either side of the centre line, turn the lathe on and use a parting tool to clean unto your marks. I also like to add a decorative V cut dead in the centre of the mallet head, but this is optional.

10 Now all the critical bits of turning are done you can finish the shaping by tapering to each end of the mallet head. Again, this is optional and the overall shape is entirely a personal choice. Once again slow, light cuts from the spindle roughing gouge are all that's needed to give a good finish.

11 You're going to have to sand the mallet head on both the side grain and the ends, but just remember that you have the hole running through the centre. Make sure you sand from underneath the workpiece with the timber running away from you to avoid catching the hole. Take care not to sand the ends too hot as well as this will cause cracking to the end grain.

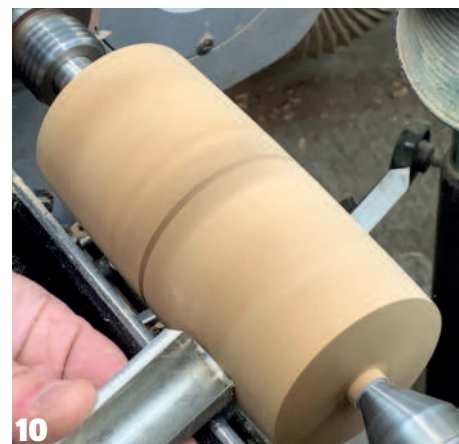
12 After sanding through the grades and you're happy with the finish, take the mallet head off the lathe and repeat on the other three. Once all the heads are complete mount your sanding disc ready to take off the nibs where the drive and tailstock centre were. The one I'm using is fixed to my chuck using a faceplate ring.

13 Sanding the waste areas away is a fairly simple process. Start with 100 grit to take away the bulk of the waste before swapping the sanding disc for a power sanding pad and working through to a fine 400 grit abrasive. Inspect the end grain and don't be scared to sand further out from the centre point if you think it needs it.

14 Let's move on to the handles for our mallets, for which we bought softwood broom handles. We will also use one of the handles cut into two for the scoring sticks in the next issue. To prepare the handles, cut a central slot in the end with a pull saw, 50mm or 2in deep on all four.

15 The broom handles are a very quick-grown softwood and incredibly pale, so I've decided to stain them dark stain. In this case I had some old rosewood stain lying around since about 1985, so decided to put it to good use. I find using a foam brush to apply the stain saves an awful lot of mess and keeps the stain where you want it. Try to avoid staining the area to be inserted into the mallet head.

16 Once the stain has dried you can glue the heads to the handles, but in preparation for this you will need to cut yourself some wedges. I chose to show the wedges as a feature and a contrasting timber, in this case sapele. However, if you want to hide your wedges choose the same timber as the handle.





17



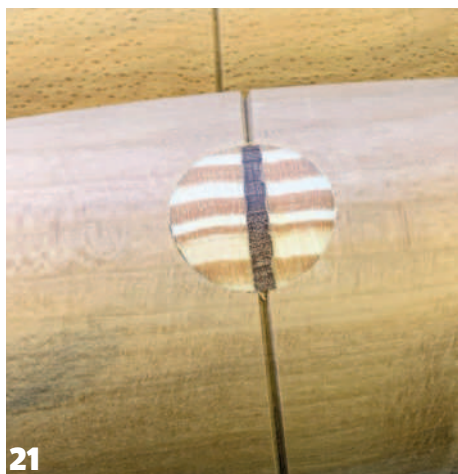
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21



22



23

17 To fix everything together, tap the handle into the mallet head until it just pokes through and the cut slot is running in line with the turned V-cut you made in the mallet head. Then add some glue to the slot and the wedge before tapping the wedge down until it will not travel any further. Set aside and leave until the glue has completely cured.

18 Here's what the mallet should look like once the glue has completely dried. Although the handles have had a coat of stain there is no actual finish on either handle or mallet head. We still need to finish the join and do some sanding before that stage.

19 The glue is now dry and we can cut the waste away from the wedges. Again, it's important not to mark the mallet heads and my preferred tool for this is the Japanese flush-cut pull saw. This is a very flexible saw, but because it has no set can be used right up against the timber without marking it.

20 This is the join so far, and even though the flush-cut saw has left quite a good finish we still need to give the mallet heads a sand. It is as easy as taking a sanding block to them, however I opted for my power sander for speed and working through the grades to 400 grit.

21 This is what the heads look like with the contrasting wedges in and everything sanded. The next stage is to consider the type of finish you want to use and to consider the conditions you will be playing in. This is a summer game, but grass can be wet and I would always go for a weather-resistant finish.

22 I'm using an exterior gloss boat varnish to make sure the playing pieces are fully protected if left out overnight or someone accidentally spills their Pimm's on them.

It's wise to add a couple of coats and sand lightly between to give the best finish. I would also varnish the heads first then wait for them to dry before doing the handles, so you're not juggling with wet varnish.

23 Once everything has had a good couple of coats of varnish you can add the colours. I'm using tape to distinguish the individual teams and am going to stick with the primary colours – red, blue, green and yellow. Each mallet should have one colour with one matching ball, while the scoring sticks have all four colours. ●

Gloucestershire Association of Woodturners – 12 months of change



Les Cooper tells us how his woodturning club has had to change and adapt



Today is 13 March 2021 as I write this and it's exactly 12 months ago to the day that my wife and I were having an overnight stay at an airport hotel to catch a flight the next morning for a holiday in the Spanish Canary Islands. Little did we know that we were to wake up to find that all flights to Spain had been cancelled. And it was very soon that the UK entered its first lockdown.

This of course meant no more physical meetings for my woodturning club, the Gloucestershire Association of Woodturners (GAW). We have around 100 members and each month have a demonstration by a professional woodturner and also a sale alternating each month between woodturning blanks and sundries (oils, waxes, abrasives, etc.).

Initially we were keeping in touch with our members using our website, emails and regular newsletters. For our committee

meetings we had started using Zoom and its 45 minutes free option. We quickly realised that this was the way forward to hold meetings for the entire club and ordered a full Zoom licence.

After informing our members on how to use Zoom, our first online meeting for the club was a Show & Tell evening on 17 June 2020. This was an opportunity for our members to say hello to friends they hadn't seen for a few months, to show us what they had been making during lockdown and get to know this new technology. This proved to be most successful, and we have had a number of these Show & Tell evenings since.

This was a very hectic time for our programme manager, who now had to reorganise our calendar of demonstrations to find and book demonstrators who had the technology to provide online demonstrations. Of course, this meant we could now look worldwide. Our first online demonstration was with UK-based professional woodturner Martin Saban-Smith on 8 July 2020. Since then, we have had a monthly online demonstration with professional woodturners from near and far, including Emma Cook from the UK, Rudy Lopez from the US and Glen Lucas from Ireland. As these online demonstrations normally allow for 100 viewers, we have been asking neighbouring woodturning clubs if their members would also like to watch the demonstration, for a small fee of course. Everyone who has watched one of these online demonstrations has been very impressed with the quality and professionalism that has been achieved in a very short time. It's also good that, even though it's an online demonstration, we can still ask questions and have a chat. Our November demonstrator was Colwyn Way, who showed us how to make a smaller version of his Christmas Carousel, which was featured in issues 350 and 351 of *Woodturning* magazine. This proved very popular and a number of carousels were shown in our January 2021 Show & Tell meeting.

As our physical meetings are suspended, this means our members are unable to stock up their woodturning blanks and sundries at monthly meetings. To cover this, we have been organising 'click & collect' style sales where they can pre-order everything they need and then collect their order at a predetermined time. Unfortunately, the last sale of this type we managed to hold was in early November 2020.

One of the big draws for new members to our club are the beginners' courses we run. Five of our more experienced turners are qualified tutors, having passed the AWGB Let's Teach Turning course. We offer one-day courses, with lunch, in either spindle or faceplate turning. A normal course will consist of six novices and three tutors. Sadly, the last course we were able to hold was towards the end of 2019 as we have been unable to see how it's possible to hold the course and maintain social distancing.

A few years ago, our club set up a WhatsApp group for members. This has been very active over the past 12 months, with people asking for advice, showing what they have made and, of course, plenty of jokes and humour.

WHAT DOES THE FUTURE HOLD?

The Gloucestershire Association of Woodturners is fortunate that the majority of members have renewed their membership for 2021.

Hopefully, by the time you are reading this we will have held our next 'click &

collect' sale at the end of April. If all goes to plan, we are hoping to commence physical meetings again in July. One change that is being looked into is the option for members who are unable to attend a meeting to watch the demonstration online at home.

The professional woodturners we book for demonstrations need to live within driving distance of our club in Gloucester, so another change we are looking at is in the winter to invite an international woodturner to give an online demonstration. Our members would have the option of watching the demonstration at our club where they can enjoy the social interaction, or from the comfort of their own home with a glass of wine.

Thankfully the beginners' courses are scheduled to recommence later in the year.

The good news as I write this is it looks like there is a light at the end of the tunnel. Stay safe everyone.

For more information on the Gloucestershire Association of Woodturners please see www.gaw.org.uk

Below you can read about what just a few of our members have been making during the past 12 months.

Mike Owen

Mike has been turning for three years and a member of GAW for 2½ years. He says: 'I live in Swindon, but the local woodturning club was full, so I ventured to the GAW as this was the nearest. I found the first night a little daunting, but everyone was kind and welcoming, especially the committee members who do so much behind the scenes to make the club such a success. I attended two beginners' courses, one for spindle turning and one for bowl turning, and learnt a lot from them. Recently I was asked to make two chess sets for my nephews. After doing some research I decided to make the light-coloured pieces from hornbeam and the dark pieces out of ovengkol. I wanted the two sets to be heirloom sets, so I made a walnut-veneered plywood box to go with them. I had never done marquetry before, but I added an inlay around the board between the squares and the borders. As a finishing touch, I applied gold leaf to the king and the queen. The pieces were turned on a stub mandrel and this made a great place to add weight to the base of all the pieces. The final process was to cover all of the bases of the pieces, the boards and the boxes with green baize. It was a labour of love but I think they turned out well.'



Brian Wharton

Brian is the membership secretary for the GAW. Following Colwyn Way's demonstration in November, Brian made the Christmas Carousel. 'Starting was a bit of a challenge, if only because of the large number of individual parts. The plans in *Woodturning* magazine helped, and I started with the base parts, including the candle holders. The



support pillars and the arch went well but the central spindle with the 3mm hole through the centre was more of a challenge. Next was the blade assembly and I started with the hub and finial, then the blade holders (12 required). The assembly went well but I had an issue with balance of the blades and some friction at the top of the arch. To solve the friction problem I created a delrin bush with a 3.2mm hole and drilled a recess in the top of the arch to accommodate it. It all worked and kept going for more than 15 minutes, when I got bored watching it rotate. The next upgrade after Christmas was to convert the platter to a Magic Roundabout with Dylan and Brian the snail. Only Zebedee to go and I can keep it on the table for the rest of the year!



Keith Fenton

Keith is one of GAW's more experienced turners, a member of the AWGB, the Heart of England Woodturners, Gloucester Association of Woodturners and current chair of the Forest of Dean Woodturners. 'I early retired in January 2014 and my lifetime hobby of woodturning officially became a full-time obsession. Prior to retirement I had demonstrated occasionally for several years but was always limited due to work commitments. I have sold work through a craft gallery in nearby Wales for the past 16 years. As lockdown started I had work in three local craft outlets and enjoyed teaching a few days a month, along with 12-15 demonstration per year. I used the quiet time to tidy through the workshop (although I doubt many would consider it tidy). I managed to update my website, www.aroundwood.co.uk, a task I always avoid until I have run out of excuses. I finally got around to turning some of the blanks that I had been looking at, awaiting inspiration, for some time. In particular a large oak burr that I bought in November 2018 and couldn't decide how to approach. The bowl was finally completed and it was worth the wait. It measures 57 x 45 x 12cm.



Les Cooper

Les looks after the wood sales for the GAW. While the golf courses have been closed Les has been spending more time in his workshop. One of the items he made was Walter Hall's Art Deco Skeleton Clock, featured in issue 342 of *Woodturning* magazine. 'Whenever I make something from plans like this I always try to alter it in some way to make it my own. In this case I made mine from ash and American black walnut, added some boxwood finials and I used a 150mm-diameter skeleton clock but without the bezel, which gives a clock diameter of 135mm.'

Martin Edgley

Martin has made an Involved Globe after seeing Emma Cook's demonstration in October last year. He says: 'I started woodturning around 1995, joining Colchester Woodturners in 98, receiving lots of guidance from club members Tony Witham, Paul Howard, and regular demonstrators Mark Baker, Simon Hope & many others. I am now a member of the GAW, a superb club. This globe, made from mahogany-type wood, was inspired by Emma Cook (aka The Tiny Turner), who demonstrated turning a four-piece inside out a hanging ornament containing a small glass globe. Foolishly, in hindsight, I decided to do something similar but from six triangular wedges. So after 12 paper glue-ups and splits and five turnings on two different axes the hollow globe was formed. The support frame was turned as a disc, which was then turned off-centre to produce the ring, the stem was part of the ring and the base formed from the centre cut-out. The glass ball inside is 10cm diameter, the globe 14cm and the overall height 31cm. The LED lights inside the ball are powered by batteries in the base and the sphere can be rotated in its frame.'



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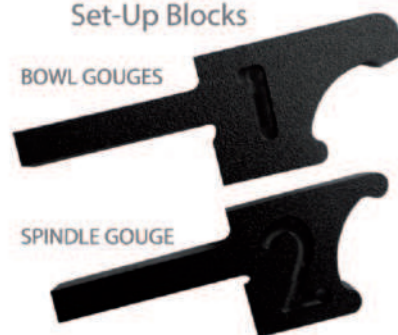


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Turned shop mallet

Rick Rich turns a handy workshop mallet



Every shop needs a mallet. A good heavy mallet, useful for any manner of hammering needs. Because it will need to be regularly replaced, the wood used should be inexpensive or free. Maple, hickory, locust, ash or oak firewood can make excellent shop mallets and the straighter the grain the better. When your shop mallet is worn out return it to the firebox so it can be useful one last time warming your home.

Art and Education in Wood-Turning, a reference book by William Klenke published in 1921 is where the mallet dimensions and drawing for this project were found. The mallet design is quick and easy to turn, and strong. As Klenke writes: 'The turning of a mallet is very simple; the only part needing great care and attention will be the boring of the hole in the head and then the fitting of the handle to that hole.'

I used the mallet drawing and dimensions (with one small correction – to have a total handle length from the head be $9\frac{1}{8}$ in, it is necessary to add $\frac{1}{2}$ in to the $5\frac{5}{8}$ in dimension given) from Klenke's book and some head drilling and tenon sizing tricks from another early 1900's text titled *Wood Turning* by George Ross. These tips should help you get the drilled hole straight and the tenon just the right size.

EQUIPMENT USED

- Drive centre and revolving centre
- $\frac{3}{4}$ in spade-style drill bit and cordless drill
- Pencil & ruler
- PPE, including full facemask

Tools

- $\frac{3}{4}$ in spindle roughing gouge
- $\frac{3}{4}$ in skew chisel
- $\frac{3}{8}$ in spindle gouge
- $\frac{1}{8}$ in parting tool
- Outside calliper (with ends rounded for safety)
- Pencil calliper

Materials

- Maple blanks cut from same piece of firewood
- Handle: $1\frac{1}{4}$ x $1\frac{1}{4}$ x $12\frac{1}{2}$ in
- Head: 3 x 3 x 6in
- Wedge: $\frac{3}{4}$ x $\frac{1}{8}$ x 1in
- Small piece of scrap about $1\frac{1}{2}$ in square by $\frac{1}{2}$ in thick

Technical drawing of a mechanical part, likely a shaft or rod, showing dimensions in inches. The drawing includes a cross-sectional view on the left and a side view on the right.

Dimensions:

- Overall Length:** 9 1/2 in
- Section 1 (Left):**
 - Length: 2 7/8 in
 - Radius: 2 1/2 in
 - Internal Feature: 3/4 in (width), 1/2 in (height)
 - Label: SEPERATE WEDGE
- Section 2 (Middle):**
 - Length: 5 in
 - Radius: 2 in
 - Internal Feature: 3/4 in (width), 1/2 in (height)
- Section 3 (Right):**
 - Length: 1 1/2 in
 - Radius: 1 1/2 in
 - Internal Feature: 1/2 in (width), 1/4 in (height)
- Section 4 (Far Right):**
 - Length: 1 1/4 in
 - Radius: 1 1/4 in
 - Internal Feature: 1/4 in (width), 1/8 in (height)





4 Locate centres and mount the head blank on to the lathe. I like to turn the head blank first because the handle can be test fitted into the turned and drilled head and it is easier to adjust the handle instead of the head for tenon fit. So, turn the head round to its largest diameter, which is $2\frac{7}{8}$ in.



5 Use a ruler to locate the ends of the head and the centreline. This is rather easy, just hold the pencil at zero, $2\frac{1}{2}$ and 5in, leaving about $\frac{1}{2}$ in on either side. Then hold the 1in line of the ruler on the centreline and pencil lines at zero, $\frac{1}{4}$, $1\frac{3}{4}$ and 2in. These lines are for the small detail beads around the head on either side of the handle.

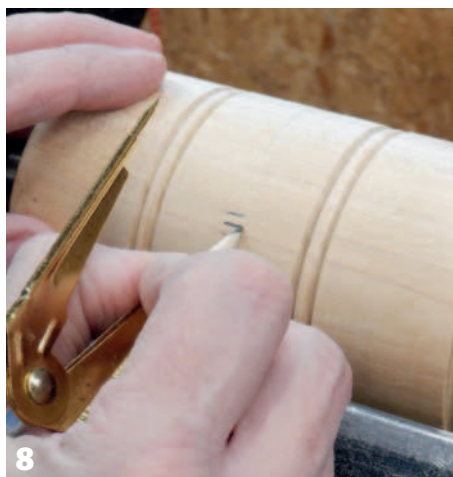


6 Part the ends at $2\frac{5}{8}$ in so that later you can taper the ends to that dimension. Now, staying within the $1\frac{1}{4}$ in lines, carefully V-cut with the skew chisel. I made shallow cuts, leaving enough material for a $\frac{1}{8}$ in bead inside the V-cuts. Turn the beads carefully with the skew chisel. Cut the ends convex about a sixteenth or so with the skew or spindle gouge. I can't read the dimension in the diagram, so I guessed it to be $\frac{1}{16}$ in.



7 & 8 Here is a quote from *Art and Education in Wood-Turning* 1921 by William Walter Klenke* on how to drill a perfectly straight hole through the mallet head: "To locate the points to bore for the handle. To lay out the hole, take a compass and set it to the radius of the larger circle, that is, largest diameter. Commence at a point selected on the centerline and space off three spaces on one side, then go back to the starting point and space off three spaces on the other side. Most likely it will be found that in spacing, the points will not meet. Divide this space equally; this will give the point on which to bore; the first point will be the point to bore on the other side".

This is easily done with the pencil compass as you see in the photos.



9 & 10 Set the drilling point at as close to top dead centre as possible and lock the spindle. With a $\frac{3}{4}$ in spade bit, drill just over halfway through, keeping the bit as straight as possible. When done drilling the first hole just over halfway through, turn the spindle 180° so the other drilling mark is on top. Repeat. You should end up with a straight drilled hole neatly bisecting the centreline.



11 Taper the head from the detail area on each side to the parted size at the ends. Clean the end grain of each end with a skew or spindle gouge. Turn the ends down to small nubs that can be easily sawn off when removed from the lathe. Any sanding should be done now, but don't forget, this is just a shop mallet.

12A & 12B Here is some text from the book that explains the sizing gauge:

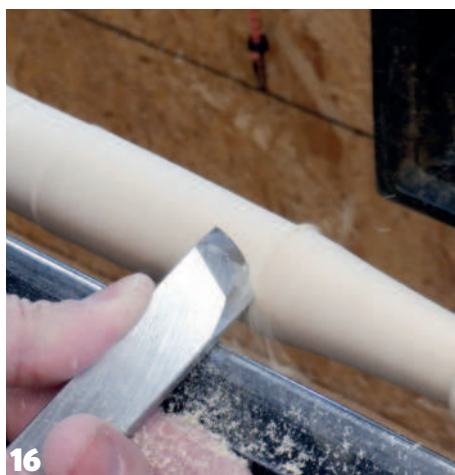
"To make the gauge. The hole is bored with an auger bit corresponding to dimensions given in the table. The gauge is hung on the dead center so that it will not be necessary to remove the work from the lathe when trying for size. Leave this part of the handle a little longer than the diameter of the head so that it may be finished off flush when the mallet is put together."*

Pinch the scrap in a vice or handscrew so the grain does not blow out when you drill through the centre with the same $\frac{3}{4}$ in spade bit used to bore the head. This will be your handle tenon-sizing gauge. It fits neatly over the screws of my Oneway revolving centre, which is an improvement from dead centres of old.

13 & 14 Locate centres and mount the handle blank on the lathe. Turn the handle end down enough for the tenon sizing gauge to fit snugly on to the end. Use a spindle gouge and turn uphill (the scrap is faceplate orientation) to round over the tenon sizing gauge. Otherwise the square edges might hurt your fingers as you use it to size the handle tenon. I learned that this was a good idea when making some of these mallets previously.

15 Turn the blank round. Mark the tenon length at 3in to give some additional tenon to go through the head as mentioned earlier in the text from the *Wood Turning* manual. Turn the tenon using the tenon sizing gauge so that it goes all the way down the tenon. I scoot the gauge down with the side of the skew blade, and if it won't go further down, I know that I need to remove some additional material under it. If you are uncomfortable moving the gauge while the lathe is turning, it is an easy matter to stop the lathe and conduct the fitting. Do take your time so that the tenon is correctly sized and not too loose. Part the bottom of the handle at and to the dimensions listed in the diagram.

16 & 17 Use the skew to smooth the handle, cutting downhill for best results.





18



19



20



21

18 Peel cut the excess material at the bottom of the handle blank.

19 & 20 Cut the shallow cove at the handle bottom with the skew chisel. Turn over the half bead at the end, also using the skew chisel.

21 The completed handle should look like this. Remove it from the lathe and cut a saw kerf into the tenon about 1½in down from the top end. I like to put the kerf along the radial grain, which is the visible grain lines, so when the handle goes into the mallet head the face grain is forward and backwards.



22



23

22 & 23 Insert the handle tenon into the mallet head. Use wood glue if you want, but I don't as it is about to get permanently secured with a hammered-in wedge. Seat the handle tenon completely into the head so that the little bead at the bottom of the tenon is against the head on the bottom side. Ensure the kerf is 90° to the grain so that the wedging action pushes against the end grain. Place the wedge into the saw kerf and hammer it home. Cut the remaining tenon and wedge flush to the mallet head.

24 Your completed shop mallet should look something like this.



24

* *Art and Education in Wood-Turning* 1921 by William Walter Klenke is classified as being in the public domain. Printed copies are available to purchase. ●

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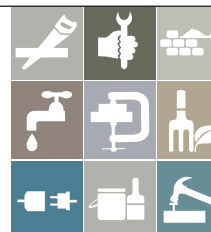
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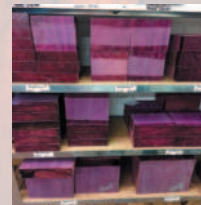
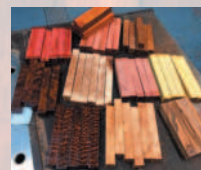
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Design in woodturning

Pete Moncrieff-Jury considers the influences of Art Deco



Fusion of angles



Zentangle dragonfly

PHOTOGRAPH BY PETE MONCRIEFF-JURY

Some turners just want to put some wood on the lathe and make something. Others are perhaps more ambitious and want to try to make something a bit more artistic. Whichever camp you fall into you will, whether you realise it or not, be designing something and be influenced by something that you have seen somewhere, sometime. People have always designed. Sometimes for practical purposes and sometimes for purely aesthetic reasons. We who are turning now in the 21st century are fortunate to have a huge background to draw ideas from, and while it is true to a point that there is nothing new under the sun, hopefully over this series I can point you to various design eras and platforms for you to get new ideas to use in your woodturning. For this first one I will take a quick look at one of my own favourites, the Art Deco period.

This was first seen towards the beginning of the 20th century in France before World War 1 and soon spread and branched out into three different styles. The continental, the British and the American. All similar but a bit of research would soon show the differences. It influenced pretty

much every aspect of life, from cars such as Bugatti, Talbot and Alfa Romeo, to decorative work and architecture. So how does this translate into woodturning?

The main focus of the Art Deco style is a strong geometric shape and a simplicity. A bowl, for example, can be just a bowl, but it can be made so much more by subtle design in the Art Deco style. Art Deco designers often mixed materials, including wood, glass, metals and even later on plastics, which perhaps evolved into today's use by many turners of resin.

If you are more gifted artistically then decoration can be done in an Art Deco style using strong geometric shapes and design.

Don't be afraid to mix styles either – again, something often seen during the period. The bowl illustrated is a strong Art Deco style with the geometric shapes known traditionally as Zentangle, but is also influenced by oriental styles.

There isn't much that the woodturner can make that can't be influenced by Art Deco and, perhaps something many don't think to do, a lot of ideas can be seen by looking at other media, other forms of creation. Metal, glass, ceramics

all have shapes and ideas that we can incorporate into our work. Also studying architecture, cars, and even everyday objects can give us new ideas for our work and take us into different realms of creation.

Finally, take a look at simple artwork. The artwork, both fine art and sculptural, that was created in this period was invariably simplistic, stylised and often more suggestive than realistic. It still relied on strong shapes but not a lot of fine detail. In many ways perhaps the Art Deco style was a rebellion against the over-the-top Victorian designs and later the Arts & Crafts movement, which tended to use a lot of natural forms and shapes. The designs of William Morris couldn't be farther from the ceramics of Clarice Cliff or the glass of René Lalique, for example.

Art Deco tends to be a design style that is applied to everyday things, be it a cup and saucer or a building, or for sculptural work as in the second illustration, and so is ideal for use in woodturning. Go research the designs and see what you can incorporate into your work. Remember also that not everything you make on a lathe has to be round.



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