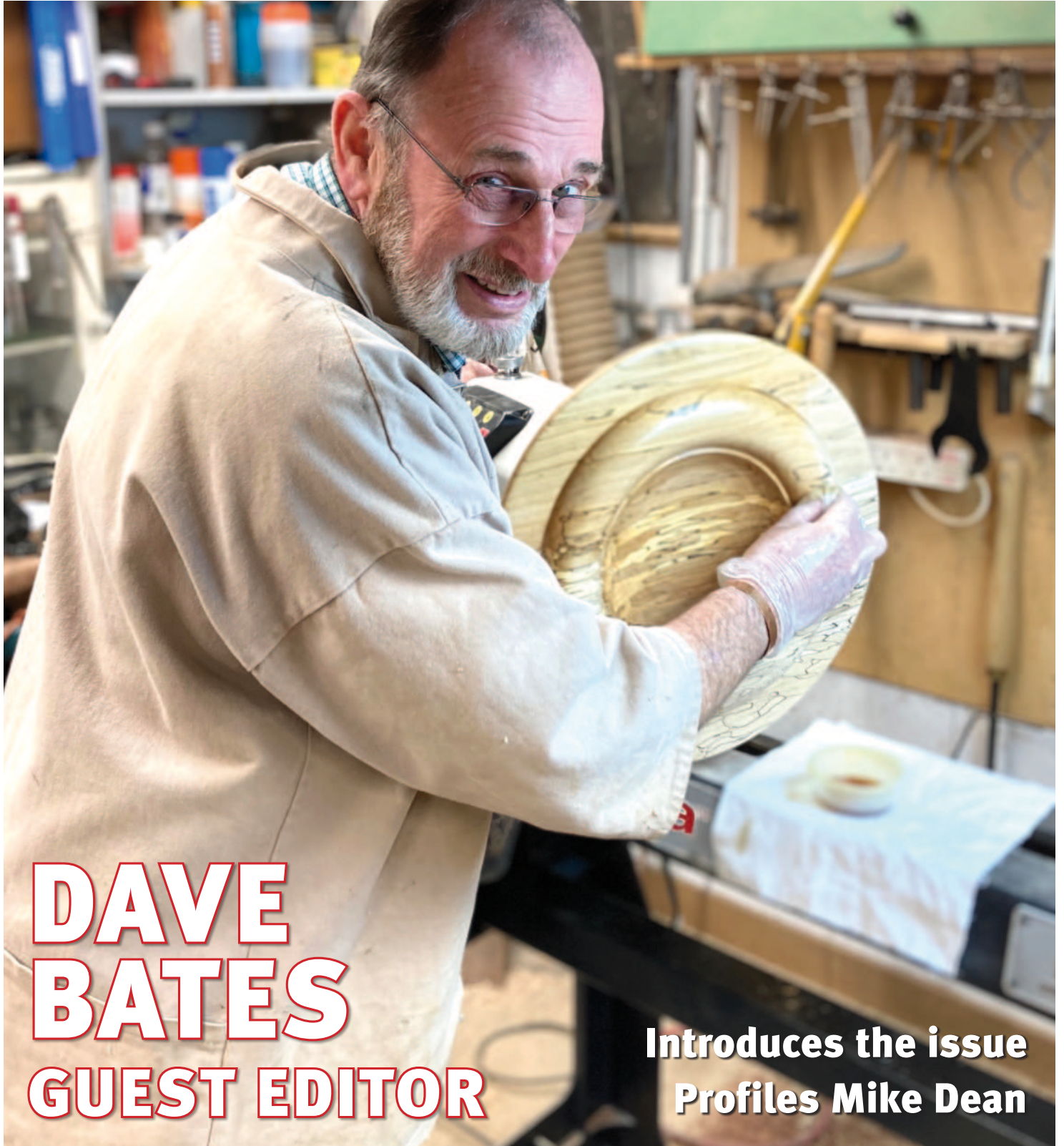


Woodturning

THE WORLD'S LEADING MAGAZINE FOR WOODTURNERS



**DAVE
BATES**
GUEST EDITOR

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Profiles Mike Dean

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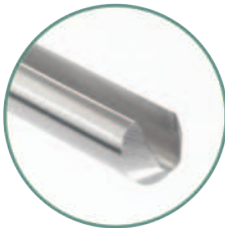
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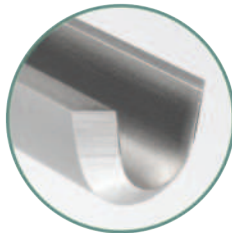
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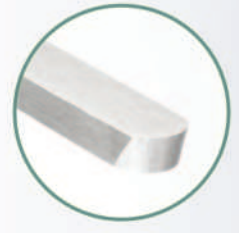
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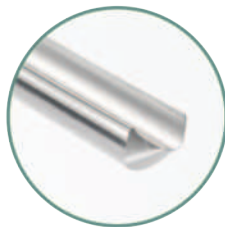
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Guest editor's letter

Dave Bates

of Stiles & Bates

The evolution of turning

With the exception of one issue, I have every copy of *Woodturning* since it first came out in autumn 1990, so I looked it out. Then I cast my mind back to the '80s and then still further back to my first efforts on a lathe as a nine year-old in, err, before The Beatles were famous, I like to say.

The lathe was a Victorian treadle lathe converted to run on a washing machine motor and, as far as I knew, was the only lathe for miles around.

No woodturning chucks back then; our chuck was a 7in three-jaw engineering chuck and the three tools I remember were a wide shallow gouge, a smaller 'detail' gouge and a carpenter's chisel used leaned-over to create a skew angle or driven in to create spigots. These tools would have been carbon steel and all were sharpened on an oil stone.

It was around 1981, now married with a daughter and our son gestating, that I saw some bark-edged bowls by the inimitable Bert Marsh at a woodworking show and the urgency to get on a lathe again took over my thinking. The modern lathes at the show did not impress me (I was brought up on cast iron) so I ended up buying a Myers engineering lathe circa 1909 at a farm sale and had it converted to turn larger and faster, but still with solid bearings and a flat belt drive.

Woodturning chucks were just beginning to appear, first the Multistar Duplex and the twin lever Nova by Teknatool. By the mid-'80s, carbon steel turning tools were being phased out and HSS was taking over.

My recollections of those days are of heady times, not unlike the pop music time of the '60s, when new groups were releasing new and different noises to drown the airwaves almost weekly.

In woodturning, the revolution was somewhat muted by comparison, but new tools were devised and the images of hollow forms



and hollow vases by pioneers like David Ellsworth and the late John Jordan spawned a whole range of new hollowing tools.

In 1988, the AWGB was formed and I was in the first queue, joined a club and was amazed to find a whole legion of hobby turners all chattering and keen to share with new friends. By then we were looking at the work of the members of the American Association of Woodturners and taking inspiration from magazines such as *Ceramic Review*, and our horizons and imaginations were (and still are) widened by the totally new concept of woodturning becoming an art as well as a craft.

I converted an old Graduate pedestal lathe to variable speed in the early '90s at a time when manufacturers were ramping up production of round bed bar lathes (single and double) to

take advantage of this newish hobby that only needed to occupy the end of a garage, and with it numerous chucks, specialist chuck jaws and yet more tools, many designed to short-cut the learning skills but often failing on that score.

The evolution has been steady since then. Manufacturers have reverted to cast iron lathe beds, variable speed is becoming the norm and we have yet more chucks, efficient tool sharpening devices, more new tools with cutters in HSS, carbide, cryogenic, advanced powder metal. But, through it all, and apart from production-line copy turning, woodturning is still a hand-skill craft requiring a touch and the hand-eye to chase that ever elusive perfect shape and form.

Dave



Find us on Instagram and follow us on @woodturning__magazine and share your work with us using #woodturningmagazine or email us on WTEditorial@thegmcgroup.com

Contents

Issue 383



Cover image by Dave Bates

54



22



Guest Editor

- 3 Guest editor's letter**
Dave Bates welcomes you to this issue of *Woodturning*
- 6 Barleywood Woodturning Specialists**
Guest Editor Dave Bates introduces woodturning all-rounder Mike Dean

86



30

Community

- 53 Subscriptions**
Discover our latest offers for subscribers
- 68 Community news**
Take a look at what *Woodturning* readers have been making and find out about the latest turning news and events
- 103 Next issue**
A sneak peek at what's in store in the next issue



14



6



Features

- 70 AAW International Woodturning Symposium**
Whether you are a new turner or a professional you will be challenged and inspired at the 2023 AAW International Symposium
- 72 Diary of a professional woodturner – part 23**
Richard Findley talks us through some of his recent commissions
- 78 Turned and Sculpted Wood**
We showcase some of the outstanding work from Wood Symphony Gallery's exhibition
- 92 The Oak Fabrykant**
This historic Polish oak was voted European Tree of the Year 2023
- 104 Young turners needed**
Pete Moncrieff-Jury looks to the next generation of turners



Techniques

- 38 Stack lamination**
Mark Palma gets nostalgic for an interesting technique that makes use of scrap wood
- 66 Kurt's clinic**
Kurt Hertzog answers readers' questions

Projects

- 14 Basket weave vase**
Colwin Way returns to the magazine with this creation of a basket weave illusion on a shapely vase
- 22 A log three ways – part 3**
Andy Coates suggests an approach for novices
- 30 Multi-centre box**
Pat Carroll makes a fun box in ash
- 40 Fluted pod**
Andrew Potocnik flexes his imagination with this project involving bending
- 46 Pair of heart-shaped bowls**
James N Duxbury shows how four halves can make two wholes
- 54 Lighthouse stacker**
In his book *Turned Toys*, Mark Baker recreates a toy he remembers fondly from his childhood
- 62 Tazza with lid**
John Hawkswell creates a piece inspired by a Venetian glass cup
- 82 Ferment masher**
Kevin Alviti turns another useful kitchen implement
- 86 What a scorcher!**
Les Symonds turns a pair of hefty candlestands with scorched oak columns
- 94 Reproduction antique stethoscopes**
Mike Stafford researches the designs of historic stethoscopes and recreates two popular styles

40

82



HEALTH & 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).

Barleywood Woodturning Specialists

Guest editor Dave Bates introduces woodturning all-rounder Mike Dean

I first met Mike Dean around 1998 when he started his woodturning business, Barleywood, near Hastings in East Sussex. Back then he had a new Hapfo copy lathe and two 'hand' lathes and my first impression was that here was a man intent on working to succeed with an enthusiasm not unlike a pack of hounds fresh on the scent. Twenty-odd years later, the enthusiasm remains undimmed but the amount of machinery to create the huge range he sells has expanded to almost fill the workshop.

What I admire about Mike is not just his enthusiasm but the hours of sheer graft he puts into fulfilling orders and the huge range he covers, from architectural to artistic turning. We have kept in touch over the years – mainly when I refer enquiries for tens, hundreds or maybe thousands of a turned item – and he still hasn't bought me a beer.

In his workshop now, along with the standard machines such as bandsaw, planer, sawbench etc., the Hapfo lathe has been extended to take 4m newel posts and columns, there is a second copy lathe, a barley twist machine, a CNC four blade planer (for preparing dowel blanks), a dowel cutter and separate dowel sander – and now three hand lathes.

His list of famous clients is impressive and among his portfolio of production turnings are literally tens of thousands of ballet barres which are exported to the US, Europe, Australia and Asia, marquee poles and dowels from 19-65mm, barley twist spindles, harp frames, porch columns up to 300mm diameter and a whole range of urns, finials, knobs and suchlike. As he says, the production work pays the bills and allows him the time to indulge his passion for woodturning.

The workshop is an organised chaos of materials, finished spindles and dowels ready to ship out, a personal squirrel-hoard of oak and elm burrs and, on most free flat surfaces, an eclectic mix of bowls, vases and dishes that would grace any gallery.

Many woodturners like to augment their hobby by selling their work and a few dream of making a living at it. In this sense, Mike is living the dream and must be one of the very, very few making a good living from both production and artistic work alone, but the reality is hours and hours of driven work and to sum up his philosophy: Never miss an opportunity or turn a job down (no pun intended), market yourself, treat clients as you would wish to be treated and price jobs realistically.

It was a privilege to be given a tour of his workshop, to be privy to the details of his production work but above all, as a turner, to handle and drool over the shape and form of his freehand turnings. A browse of his website is a feast for the eyes: <https://www.wood-turning-uk.co.uk/>





“
*Never miss an
opportunity or turn
a job down, market
yourself, treat clients
as you would wish
to be treated...*
”

Tell us about your background and training.

My first memory of woodworking goes back to when I was aged five and my father bought me a tool kit to make a rabbit hutch and, later, a go-kart.

On leaving school, I started on a youth training scheme making cabinets and staircases, then moved to a joinery firm making windows, doors and conservatories.

Three years later, a job for a woodturner came up on a local paper and I have never looked back.

Creative Timber in Hastings then offered me a job making components for its furniture range, including twisted columns, table legs and fluted spindles.

While I was working at Creative Timber I found a workshop available for rent which was already kitted out with planer, saw bench and crosscut and I thought this was an opportunity to start my own business. This was in July 1998. Sometimes you have to take a gamble in life and am so pleased I did.

How do you like to work, what are your favourite tools and why?

My favourite tool to use is a 1in special roughing gouge purchased from Jerry Glaser in the US. This is a very versatile tool, keeps it edge for ages and is a joy to use.



Describe your workshop – what is the set-up and how long have you been there?

My workshop is 1,500sq ft converted from a farm building and prior to 1998 was occupied by a joinery company, hence the machines I started with.

How does your design process work?

With my job you never know what is coming through the door. It could be wooden handles, stair parts, ballet bars, marque poles – anything that is round I can make. One of my favourite jobs to make is wooden porch columns because they need a little bit of thinking about and look stunning when finished. I have made these up to 300mm diameter and 2,500mm long.

Which woods do you most like working with and why?

For production work I like working with tulipwood (*Liriodendron tulipifera*, not Brazilian), which is easy to turn and finish and is very stable. Burr elm and burr oak are my favourite woods to use for the artistic pieces I make, like thin delicate bowls and pieces that are turned green and left to dry naturally.

I have been using some burr horse chestnut recently and been trying different colours and finishes to produce the best possible results. I never work in any material except timber.

1 (Previous page) 36in diameter burr oak bowl **2** Small jobs ready for shipping out **3** Finials with barley twists in the background **4** Complete staircase
5 300mm diameter columns **6** Work in progress **7** The Hapco copy lathe **8** 36in burr oak dish in progress **9** Sapele porch columns



“
That’s one thing
I have learnt in life;
it doesn’t matter how
difficult and challenging
it can be at times, keep
going and be positive

”



5



6



7



8



9

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What sort of finishes do you prefer and why?

Danish oil is my favourite finish to bring out the natural beauty in the wood, but I do use sanding sealers and lacquers too, but these are more time consuming.

What inspires you and where do you get your ideas from?

Making thin, delicate bowls is my biggest passion and I was very lucky to have the late Bert Marsh in my workshop one Sunday to give a one-to-one lesson on how he made his delicate bowls.

That gave me the inspiration to make these type of pieces. I have six of his pieces in pride of place in my office to keep looking at to give me design ideas [pic 10].



What is your favourite piece you have worked on and why?

My favourite piece was a stunning 36in-diameter burr oak bowl that was turned green and left to dry naturally.

What I like about such pieces is how they form a shape that cannot be repeated, a one-off, and I was fortunate to have this [pic 1] purchased by a well-known chef in London.

What is the most challenging piece you have worked on, and why?

The most challenging piece I worked on was a hollow yew vase that was 28in high and 17in diameter. Mounting the piece on my VB36 and hollowing it to an even thickness then finishing took much longer than I had imagined [I know, I thought you never would – DB], but I kept going and was very pleased with result.

That's one thing I have learnt in life; it doesn't matter how difficult and challenging it can be at times, keep going and be positive.

How have the Covid-19 pandemic and lockdowns affected your work, and do you think any of the impact will be long term?

The pandemic did not really affect me too much and some parts of my work got busier because it gave people something to do at home. I am naturally an optimist so just work at my business and keep working as the jobs come in.

What are your aspirations for the future?

I want to carry on enjoying my work, meeting different people and be proud of what I have done and achieved.

What do you do when you're not woodturning?

People ask what I do to switch off from work and relax. Turn bowls is the answer, but I do enjoy golf and fishing.





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Turning and images by Brad Herrington & Alan Morrison

Basket weave vase

Colwin Way returns to the magazine with this creation of a basket weave illusion on a shapely vase

Basket weave illusion pieces have always fascinated me but I'd never really understood them and dismissed them, thinking they were too time-consuming or tricky. However, in my day job I have to try new things, methods, tools, ideas and projects so I thought this would be the perfect time to give this project a go.

The fact that I can sit in front of the telly as an adult and colour in filled me with a certain amount of joy and started my research into the woven basket. I was immediately drawn to African baskets and the use of bold colours, so I went to the shops and bought myself a set of fine felt-tipped pens. I chose a vase to start with as it meant I could do all my beading on side grain instead of side and end grain that you get in a bowl.

This is a fairly straightforward project and starts by turning a simple vase shape, which may be all you want to do. You could even just stop at a beaded vase or after the next step, a beaded vase with vertical stripes. I think you get the message. Whatever you do, do it with a sense of fun and enjoy the project.



PHOTOGRAPHY BY COLWIN WAY

Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- 19mm roughing gouge
- 9mm bowl gouge
- 6mm bowl gouge
- 3mm parting tool
- 6mm beading and parting tool
- 3mm beading cutter or fluted parting tool
- External callipers
- Sanding sealer
- Abrasive
- Nylon pads
- Wire for burning radial lines
- Sanding table
- Masking tape
- Fine-tip marker
- Packet fine felt-tip coloured pens
- Pyrography pen
- Bradawl

Timber used

- Sycamore, maple, lime, beech

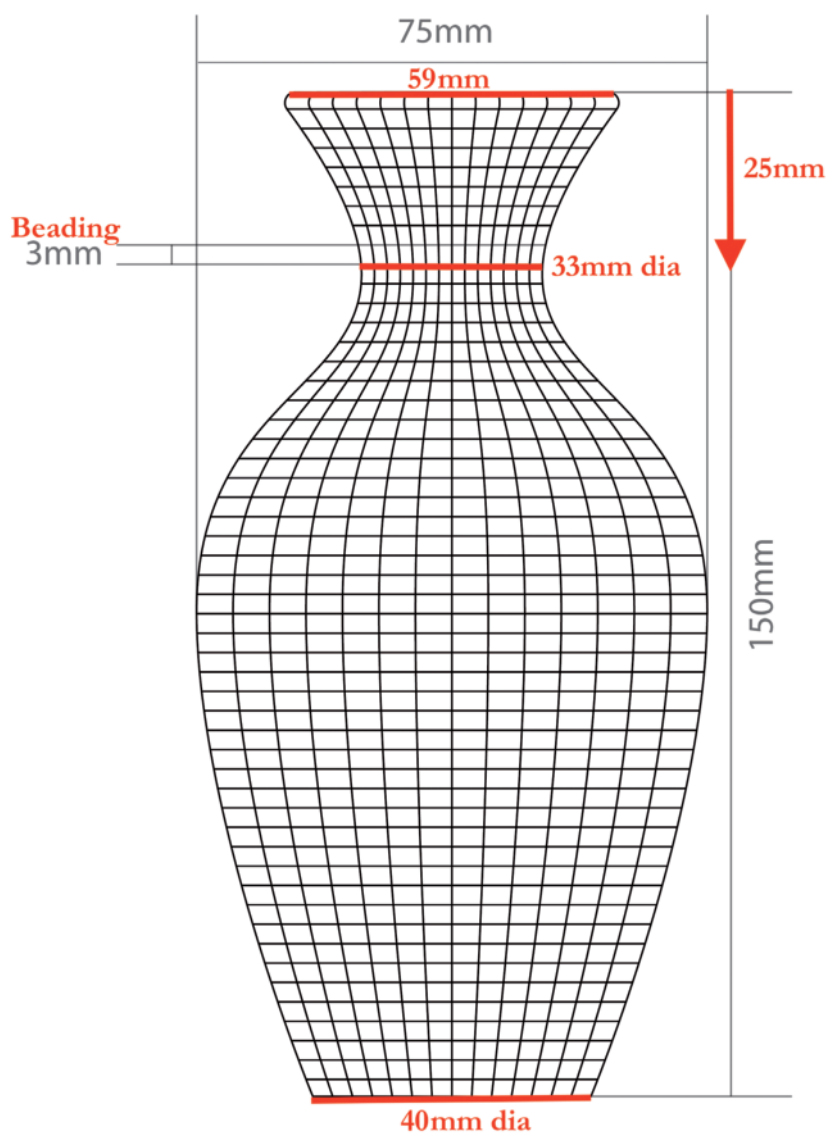
The making

1 You'll need to start by centring at both ends of your chosen blank. I'm using a piece of sycamore 75 x 75 x 150mm square. Once centred, bradawl point both ends ready to mount between them on the lathe. Even though I'm using the marking gauge for this process you can use a centre finder or rule to do the same job.

2 Using a 19mm spindle roughing gouge, start taking your blank down to a near cylinder. At this stage you can leave some small flats on the piece as we need to re-mount the blank in a chuck in the next step. This is great practice with the spindle roughing gouge and just involves gentle passes from side to side while keeping the handle in line with the cut.

3 Once roughed down you will need to make a foot to hold the blank to your chuck. To start the process you first need to decide which set of jaws you're going to use and measure their internal grip. Transfer this dimension to the blank via a set of callipers and cut using a 6mm beading and parting tool or two cuts from a regular 3mm parting tool.

4 It's also a good idea to true up any uneven areas to make sure the blank will seat as evenly as possible when re-mounting.





5 The blank can be removed from between centres now and clamped into the chuck. Push gently toward the chuck when seating and, before the lathe is switched on, give the chuck a turn to check if you have the blank centred correctly.

6 Once secured in the chuck, bring up the tailstock and add support while you try the blank. I like to keep the tailstock in position until it gets in the way as you can never have too much support. At this stage you can take the blank down to its final size and leave a good finish.

7 Now to start the shaping. Using a 9mm bowl gouge, take a series of short cuts to decrease the diameter of the neck – these are just roughing cuts so don't worry too much about the finish. In fact, the finish is a series of steps as you can see in the picture.

8 This is the time we can start to focus on the actual shape and finish of the neck. Just a bit of a tip here; for this style of vase I've allowed a third of the length for the neck. Using the same 9mm bowl gouge, start your bevel rubbing arcing cuts, the same style of cut you would use on the inside of a bowl.

9 So, moving on to the body of the vase, start in the same way as you did with the neck by making your roughing cuts first to take away the excess timber before turning the gouge over and bevel rubbing with a push cut to slide the gouge along, leaving a good finish.

10 Once you're happy with the shape you can decide where you're going to eventually part the piece off to. At this stage, however, only do a very shallow cut with your parting tool as you need to have a good amount of support and strength while creating your beads shortly.

11 With the piece still being supported from the tailstock and using a 6mm bowl gouge, clean up and start to shape the funnel of your vase. Be careful not to allow the gouge to snatch at this point – this can be prevented by rotating the flute over to a 3 o'clock position.



12 So that's all the turning done for the outside of the vase, however the piece is far from finished. Give all the turned areas a sand to a good finish. I would recommend starting at 100 grit and working through 150, 240, 320, 400 before giving it a coat of sanding sealer.



12

13 It's important that your beads are uniform in size and shape, so for this reason my preference is to use a preformed tool. My favourites to do this are a fluted parting tool used upside down, usually made of HSS and easily sharpened on the flat face, or the Easy Wood Tools new range of bead cutters, because there are four sizes to give lots more freedom with your designs.



13a

14 Whichever tools you use, I recommend starting in the centre of the vase and radiating out in each direction, trimming at either end to make sure you end in a bead. A gentle rock from side to side helps with the clearance when cutting and, if using the Easy Wood tool, keep it level and cutting on centre point.



13b

15 Once the whole of the vase has been beaded, trim back to the nearest full bead to tidy up the base. Do this with a 3mm sharp parting tool using the side scrape technique, gently offering the side of the tool to the ingrain to give a really fine cut.



14a

16 Once the outside is complete and the beads are clean either end you can remove the tailstock, finish the flute and drill to depth. First, continue the flute around in a convex curve with a 6mm bowl gouge, bevel rubbing and flute facing 2 o'clock. Then drill a hole to two-thirds depth with a 10-12mm drill bit.



14b

17 You can now take away the toolrest and start to sand the inner flute with the same abrasive you used on the outside of the vase before beading. Be careful not to sand out or misshape any beads in the process.



15

TOP TIP

If the timber is soft or punky add some sanding sealer or finishing oil before beading as well as after sanding.

This will really help with either softening the timber to make it cut without chipping in the case of oil, or harden and strengthen the timber to give a firmer surface to prevent breakout in the case of sanding sealer. It just depends on the type of surface sheen you're looking for.



16



17

18 The formed beads will need to be sanded, but your normal abrasive will misshape them, no matter how careful you are. I find it much better to use nylon pads, which are an abrasive material a bit like wire wool but without the steel. Just cut a small section and use it to de-nib your beads.



19 Once the beads have been formed and cleaned up you will need to add your radial black lines. This is best done with a wire burner and once again I'm using a handled burner to safely apply each line. A few words of advice when it comes to your health and safety using a wire burner – remember to check your clothing or any loose items as you will have one hand over the workpiece, so check your workspace.



Do not wrap the wire around the project when burning as this could lead to the wire grabbing. And remember, the wire will be incredibly hot when you've finished burning so do not touch it and make sure it's placed somewhere away from combustible materials such as shavings, fuels, finishes or rags.

20 It's a little more challenging to add the vertical burnt lines, but it's a chance to use a feature on many lathes that doesn't get used an awful lot – the indexing.



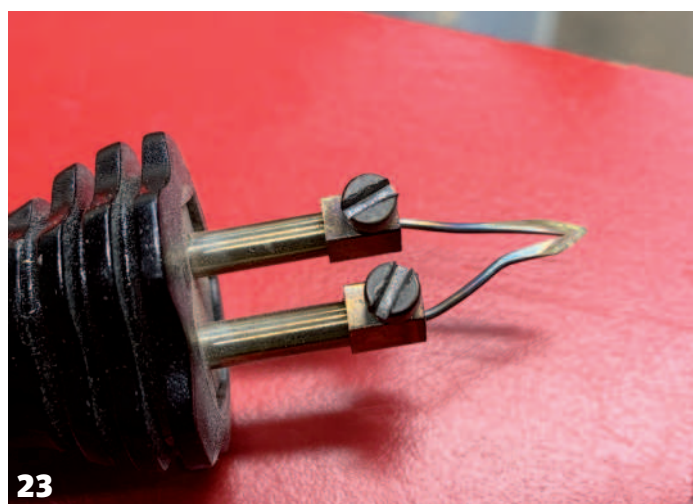
21 To allow us to mark the vertical lines I'm going to adjust my sanding table to a height that will allow my marker pen to reach the centre point of the lathe. I'm using a stop collar here to make sure this height is recorded.

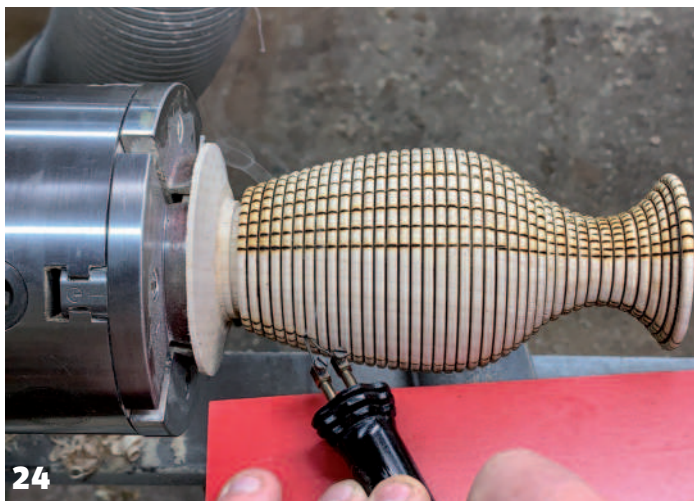


22 My lathe doesn't have a clear enough set of divisions to clearly see all the 36 points, so I'm going to add some masking tape to the lathe spindle in a position I can clearly see. Now, using a marker pen, start locating each of the indexed positions and marking them off on the masking tape.



23 The vertical lines are going to be burnt on to the vase using a pyrography pen. The burning wire has been flattened out and sharpened to a point, which helps to burn a fine line along the vase.





24 Adjust the sanding table to allow the pyrography tip to reach centre point, lay your pen flat and start running it up along the vase shape as you get to each indexed position. This will take a fair amount of time, so get comfortable.

25 Once all the lines have been formed, give the whole vase a de-nib with a brass brush – this will remove any fine fibres. You could also go over the vase again with a nylon pad if you feel it's still a bit rough.

26 When all the prep and sanding has been completed, give the vase another coat of sanding sealer, wipe off any excess, wait for it to dry and once again give a de-nib with the nylon pad.

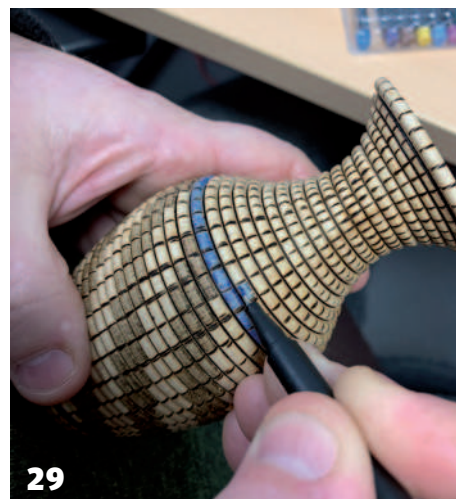
27 You can now part the vase off using a 3mm parting tool and clean up the bottom with a small power sanding pad.

28 There you have the vase ready for arguably the best bit of all – the colouring in. You could leave the vase to just have the lines as a finish if you want – I used 36 positions but you could use a bigger beading tool and just divide by 6, 12 or 24.

29 I would search the web for inspiration here as there are many examples of woven baskets, but I love the very distinctive look of African, Native American or Aboriginal and the use of colour. However, if you want to come up with your own colour scheme then give it a go, it's great fun.

Conclusion

The vase was just the project for our chosen basket weave effect and, to be honest, an easier start into this fascinating process than a bowl as a vase shape will mean we can use the beading tools on easy-to-cut side grain as opposed to a mixture of side and end, which we would get on a bowl. ●





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A log three ways – Part three

Andy Coates suggests an approach for novices

I need to begin this final part of the series with some repetition. In the first part a small log of ash was cut to provide three bowl blanks with different orientations, and, accordingly, different aesthetic outcomes. The first was a small bowl turned from what was essentially a conventional cross-grain bowl blank. This blank was one half of a section of the log cut through the pith to provide two identical blanks – one which had a further cut made, from the bark side, to provide a flat base, and can be considered as a blank turned in conventional orientation. The second bowl was turned with the bark intact, and as a result of the pith being at the base, the grain appeared completely different to that of the first bowl.

At the end of article number two we left the final end-grain bowl sitting on the lathe after the initial shaping, at the stage where the bark remained. In this final part of the series we will resume turning that bowl... but with a change of tack. And I should explain the reasoning behind that decision before we proceed.

Design considerations

It would have been reasonable to have finalised the exterior shape, retaining the bark, and then completed the bowl. However, I decided not to do that for a number of reasons. Firstly, in order to put some shape – an ogee in this case – into the bowl, a sweeping curve had to be cut through the bark. Due to the nature and extent of ash bark this resulted in a wide band of cambium layer (the layer of wood between the bark and the sapwood) being visible. Depending on the species of wood, the cambium layer can be problematic in that it can be prone to extreme shrinkage, leading to it parting from the sapwood, which was not an issue here, but worth mentioning. Furthermore, the cambium layer is often far softer than either the bark or the sapwood, leading to potential



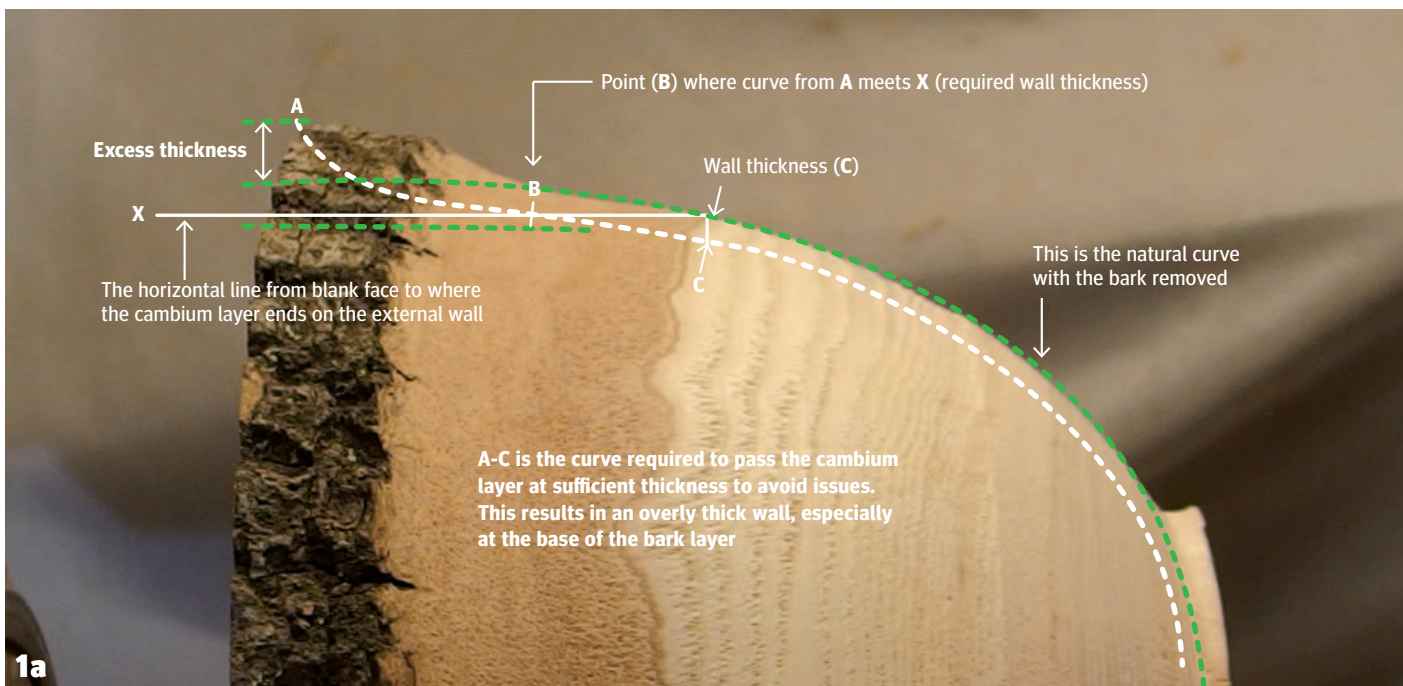
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PHOTOGRAPHY BY ANDY COATES

issues when abrading, most notably differential abrading, where the cambium abrades away far more than the sapwood, leaving a hollow.

The depth required to produce a pleasing curve through the bark also meant that the wall of the bowl, especially at the top where the bark first meets the cambium, would need to be a little thick for my taste, so I was moved to change the design and opt for removing the

bark completely. This is a decision based entirely on aesthetics, and choosing not to do as I did is not wrong, just different, so feel free to take your own path here. In general, end-grain, natural-edged bowls tend to have a more lumpen appearance and unpleasing balance than side grain, natural-edged bowls, and carrying them off successfully is difficult to achieve.



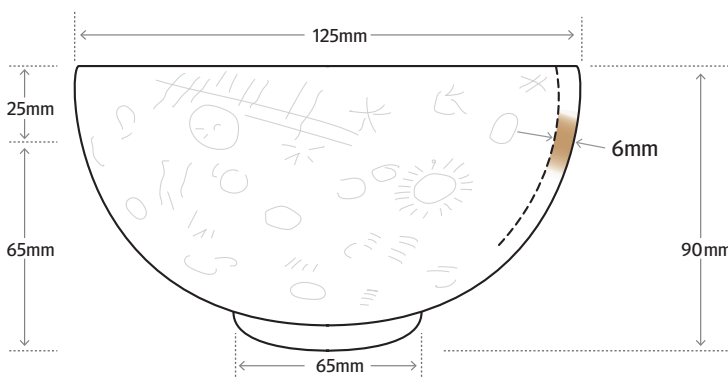
Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- 15mm long-ground bowl gouge
- 10mm spindle gouge
- Large round-nosed scraper
- Round carbide-tipped tool
- Bowl calliper

Timber used

- Ash log (or what you have to hand) 11 x 6in



Getting back to the bowl

1a At the end of article two in this series we left the bark-edged bowl at this stage (above), and for the reasons I have given, I decided to eliminate the bark completely.

1b Initially I simply removed the bark down to a flat surface using the long-ground bowl gouge in a shear cutting fashion. This results in an almost flat plane on the upper quarter of the bowl wall, and this is rarely an attractive shape. Because of the depth of the blank (height of the bowl) relative to the diameter, changing the shape to be a continuous curve from rim to base would have resulted in a much shorter vessel, or a vessel with a much narrower base, and I did not want this.





2 In order to retain the height of the bowl without having a proportionately sized, much smaller base, the outer shape needed to be altered. The most aesthetically pleasing option to my eye was to put a returning curve on the upper portion of the bowl. To decide where this should be, the overall diameter at the top was measured with Vernier callipers. The dimension was 130mm.

3 This dimension was divided by two and transferred to the outside of the bowl, from the base towards the rim. Mark this on the bowl with a pencil. This point is now the equator of the bowl – its widest point – and the shape to the left of the line will be cut downwards, forming a return curve towards the rim.

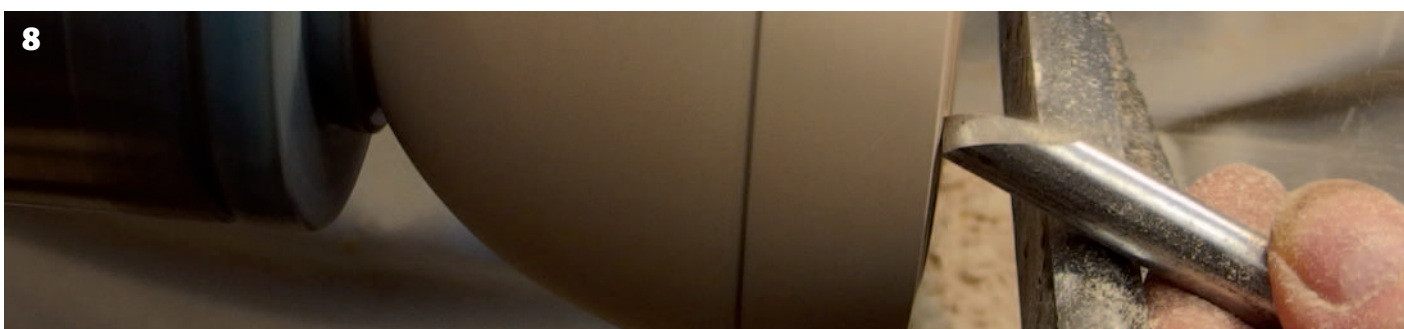
4 Using a shear pull cut with the long-ground bowl gouge, refine the shape of the bowl to the right of the line. The base will ultimately be around 55-60mm, so take your line from the plane where the tenon meets the base of the bowl and form a pleasing, continuous curve between that point and the equatorial line.

5 When you reach the line, change your cutting position and take a push cut from the line to the left, continuing the curve as naturally as you can. It can help to first remove some of the waste from the rim edge backwards, but be careful not to remove too much material and ruin the eventual shape.

6 Blend the two curves together right up to the equatorial line. Once you are happy with the curve you could abrade the exterior, but I tend to leave this for after reversing the bowl in the chuck. If there are any discrepancies they can be dealt with better if the line remains as a guide for the curve. Discrepancies occasionally arise due to slight movement in the wood, or a less-than-perfect mounting on the tenon.

7 You will need to take a light cut from the face of the blank in order to true it up, but do not take so much that you alter the exterior curve dramatically. If you imagine that the eventual wall thickness will be, for argument's sake, 5mm, then only the first 5mm of the face needs to be clean and true; everything beyond that will be waste to be removed.

8 Now you are ready to hollow the bowl. Remember this is end-grain wood, and if you have not turned end grain before it will feel notably different to hollowing side grain. End grain is tougher than side grain, and is therefore harder on you and the tool edge. Rub the bevel on the flat surface you have just created on the first section from the edge. Push the tool forward, maintaining bevel contact, slowly push the handle away from you, and feed the tool over the toolrest to increase the depth of cut.





9 As the waste material is removed the cut may become too aggressive and difficult to maintain. Back off the cut and return to just below the outer edge, and continue to remove waste. A central block of waste will remain, but you can work on this separately. At the beginning of the process the wall thickness is set on the first section after the rim. This need only be 10mm or so into the bowl; it is the reference that all subsequent cuts refer to. Wall thickness could be anything between 5mm and 10mm – 6mm is a reasonable aim.

10 Removing this central block of waste can be achieved with a different cut. Push the nose of the tool a few millimetres into the dead centre of the block, the flute is pointed to the 11 o'clock position, as in the image here, and the tool handle is pushed away from the body while the left hand pivots the tool towards the body. At the same time the tool is fed through the fingers, slightly extending its length over the toolrest, and the waste material will be taken out in wide shavings.

11 If the cut becomes too aggressive – and it can do – back off, reducing the length the tool overhangs the toolrest, and continue to remove the waste with greater control. Be aware of the point that the tool exits the waste block, and withdraw the tool as it does to avoid cutting into the rim.

12 When the central block is removed, and roughly even with the first section after the rim, you can revert to a push cut with bevel support. Work from just under the already completed section after the rim, and push the tool to the centre. The cutting edge should be working on the mid-line of the blank, so ensure the toolrest is set accordingly. When you get towards the centre the wood is actually rotating slower than it was at the periphery, so slow the rate at which the tool progresses, and this will allow you to cut up to the centre.

13 You will find that another block of central waste develops as you get deeper into the bowl. Removing this is the same process as previously mentioned, but now you have an advantage. Place the tool behind the step that formed, keep the bevel in contact with the wood, and by feeding the tool slowly over the toolrest and pulling the tool handle towards your body at the same time, you will remove the waste material in a controlled, relatively easy cut.

14 If you struggle with the bowl gouge for removing the waste, there are other options. A large, heavy, round-nosed scraper is perfect for removing end grain, and can be a real boon. The toolrest needs to be set at a height that allows the cutting edge to work on the centreline, but with the tool handle higher. The toolrest needs to be as close to the bowl edge as it is safe for it to be, in order to provide support. Canting the tool on to the left edge provides a shear cut, and can be useful if you find controlling the scraper difficult. Scraper cuts should be lighter than gouge cuts to avoid catches.

15 Another option is to use a round, carbide-tipped cutting tool. Carbide cutters were originally developed for cutting metal alloys, so they work extremely well on the hard end grain. Because only a tiny area of the cutter is actually in contact with the wood there is little resistance to the cut, which makes the process relatively gentle. Carbide-tipped tools have improved and been further developed over recent years, and even negative-rake versions are available, which work incredibly well.



16



16 Returning to the long-ground bowl gouge, and having removed much more waste material, we need to set the wall thickness at the rim. The toolrest is adjusted to give maximum support at the increased depth. When taking the cut, the bevel of the gouge is pointed in the intended direction of travel – down the wall of the bowl – and the flute is pointing up to the 2 o'clock position. The tool is pivoted, fed into the bowl, and the tool handle is simultaneously pulled back and pushed into the bowl. This should be a fluid, gentle movement.

17 You need to avoid addressing the tool with the flute pointing upwards, as shown here. While the tool will certainly cut, it is a potentially catastrophic cut. The cutting edge is far too open to the spinning wood, and as the tool travels down the wall there is a danger – almost a certainty – that the edge will grab the wood, feed itself deep into the wood, and a bad catch will result. So, do make sure that the flute is turned to the right, pointing up to somewhere between the 1 o'clock and 2 o'clock position. As the cut gets deeper into the bowl the tool can be gently rotated as it progresses to between 2 and 3 o'clock.

18 If you have the facility to physically lock the chuck to the lathe mandrel – usually by securing with machine screws through the collar of the chuck – and you have a reverse facility on the lathe, you can benefit from turning in reverse. Cuts are taken at the right-hand side of the blank (as opposed to the left-hand side in conventional drive mode), and after picking up the cut the tool is pushed away from the body and fed into the bowl. The advantage of this is that the cut can be viewed more easily, and your body is not leaning over the lathe bed in order to view the cut. (NB: the opposite situation would apply to left-hand dominant people.)

19 During a cut down the length of the bowl's wall the tool changes position a number of times, and this can be a tricky transition for novices to get used to. In the next three steps the position of the tool is detailed. (Note that only the third image is cutting, the first two are simply for illustration.) The toolrest is angled into the bowl for maximum support. The gouge is presented just below the finished reference section at the rim with the bevel rubbing, the flute pointing up at the 1-2 o'clock position, and your hand will lock the tool in position on the toolrest. The tool is pushed forward gently.

20 As the tool progresses deeper into the bowl it is very gently, and slowly, twisted to the right, heading for the 3 o'clock position, at the same time as the tool is being pushed forward. You will arrive at a point on the wall that I refer to as the 'corner' of a bowl. This is where the travel of the tool notably changes from inwards, or down, to across the base of the bowl. So from forward to left to right.

21 At this point the tool is once again rotated back, left, to the 1-2 o'clock position, and the tool handle has to be drawn back towards the body. Care needs to be taken here to avoid fouling the edge of the bowl. The tool is pushed forward, bevel maintaining contact. A further option is available at this stage – gouges with a secondary, micro, or shorter, bevel are often used for this area of a vessel, as many find them easier to control, but this may be an option to be considered as your abilities increase.

17



18



19



20



21



22 Once the wall of the bowl has been completed, a scraper can be used to finesse the shape and surface. The cutting edge needs to be on centre, and the handle held higher than centre. A heavy scraper is always preferable to a thinner-bladed tool. The tool is canted on to the left-hand edge, and the cutting edge is drawn with minimal pressure over the surface of the wood. Applying too much force can lead to catches, so let the weight of the tool be the only inward force.

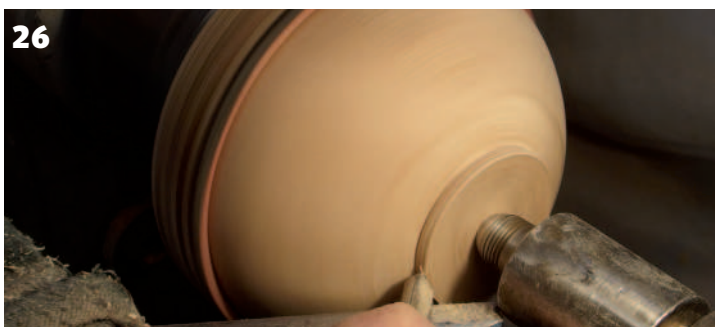
23 The scraper begins its course at the bottom of the bowl, the handle is pushed away from the body, and the tool is drawn up the wall of the bowl. Once again the problem area is the 'corner', where the travel changes from right to left to backwards, out of the bowl. If the tool is canted on its left-hand edge, presenting at a shear angle, this can greatly relieve the potential of a catch at this point. Round-bar scraper tools, often with changeable tips, can be very beneficial here, as they are easier to address to the wood at a canted, often 45°, angle.

24 Throughout the process it is important to check the wall thickness is even. Figure-of-eight callipers are the best aid to consistency, but should only be used with the lathe switched off. An even wall thickness is important not only for the aesthetics of the bowl and the balance of the piece, but also to ensure that any stresses in the wood are as evenly distributed as possible. Any minor irregularities can be addressed by taking light cuts with the scraper, directly on the areas that need to be reduced to bring the wall to a consistent thickness. Once satisfied, the interior can be abraded with a rotary sander, arbor in a cordless drill, or carefully by hand.

25 As ever, the tenon used to hold the bowl in the chuck ought to be removed. There are commercially available systems, such as Cole jaws, that can be used to reverse the completed bowl in order to work on the tenon, but a simple shop-made plate can be used. A disc of plywood with soft material glued to the face can be used to hold the bowl between it and the tailstock drive. Lathe speed is set lower for this type of operation – 600-1000rpm would be usual.

26 A 10mm spindle gouge is ideal for removing the tenon. Light cuts are taken, reducing the depth of the tenon, until it is flush, and slightly concave. The central stub that supports the bowl is removed off the lathe with a bench or carving chisel, craft knife, or abrasive wheel.

27 The end-grain bowl is finished. It looked great, shapely, nice grain pattern, and good balance, but (when you have turned thousands of bowls) pretty samey... so... I decorated it with pyrography and a rust finish. The pattern is a stylised Crinoid pattern – Crinoids are a fascinating ancient marine fossil group. The interior is left natural as a contrast to the decoration.



Conclusions

So there we have it; three very different bowls from a single short log of ash. The tool techniques are very similar, but the application is slightly different for each bowl style, and undertaking a similar course will benefit your progression enormously. I kept the shapes very basic, and perhaps obvious, simply for ease of understanding where they came from and how they were achieved. You will discover many styles and shapes that could be adopted, but the principles for achieving them will remain broadly the same. Practice, practice, practice is the key, and three from one log is as good a route to take as any. ●

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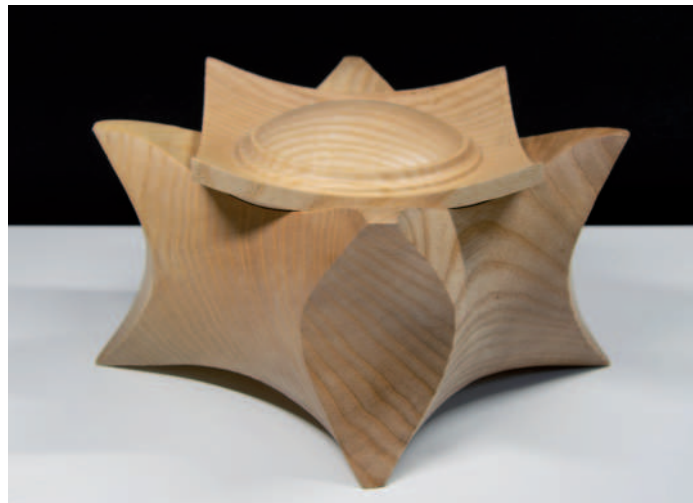
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Multi-centre box

Pat Carroll makes a fun box in ash

This project was fun to do. Multi-centre, multi-axis, whatever you care to call it, can sometimes be very hard to predict the outcome if you do not have a plan or formula in mind. And, as you can guess if you have ever read any of my previous articles, I like to experiment and see what develops. In this instance, I wanted to do something that people would look at and say: 'How did he do that? Where would I start on such a project?'



The most difficult part of this project was getting the curve of the lid to match the base of the piece. Working as a builder carpenter I have woodworking machinery at my disposal, so I could have spent a little more time squaring up the timber. I know not everyone has machinery to hand, so I like to try to do what I can to show the results from not-so-perfectly-prepared wood. The blanks for this project were cut on the bandsaw. I used a carpenter's square to check if I had a true 90° angle on all sides. I was not surprised to see I was off a few degrees on some of the sides. I marked out the six sides to find the centre by drawing diagonal lines. With all the lines marked out there was a cross on all surfaces. The lines all connected reasonably well, considering. All of these lines would play their part in this piece. Turning square pieces, the tool is often in negative space more time than in the wood, so sharp tools and controlled cuts are very important with projects like this. For clarity of the orientation of the piece I will call the top A. I explain its orientation on the lathe in each step needed.



PHOTOGRAPHS COURTESY PAT CARROLL

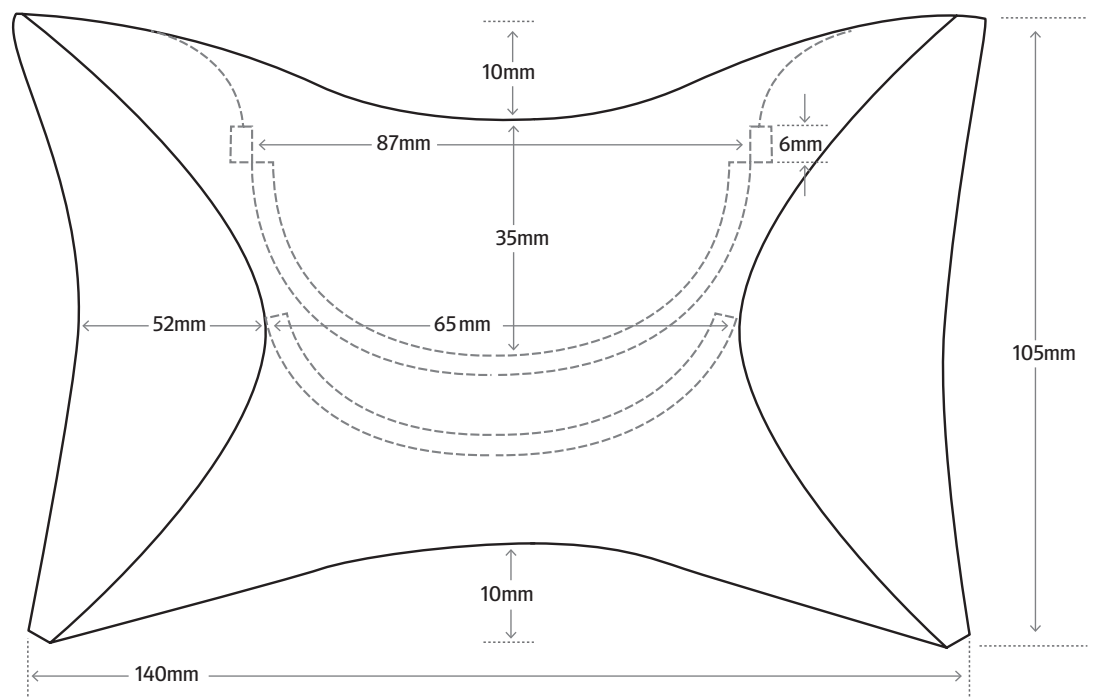
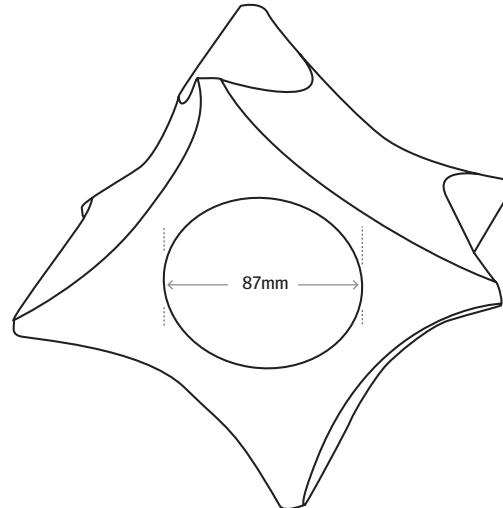
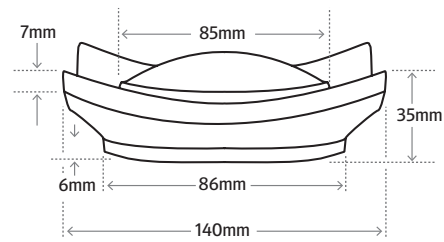
Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- 10mm steb centre
- 19mm steb centre
- 8mm screw chuck
- 5.5mm drill bit
- 4mm parting tool
- 10mm bowl gouge
- 19mm round-nose negative rake scraper
- Sandpaper
- Arbor
- Jam chuck
- Satin lacquer
- Pencil
- Rule
- Centre punch

Materials

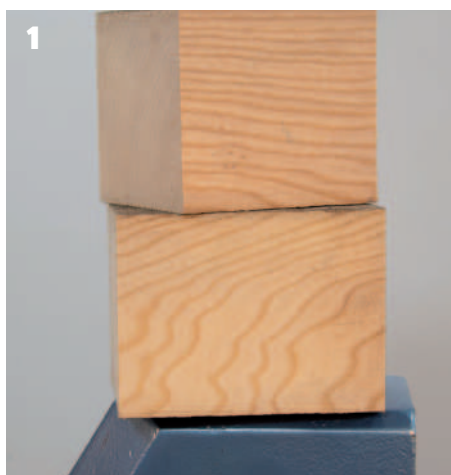
- Ash...
Base 105mm (deep) x 140 x 140mm
Lid 105mm (deep) x 110 x 110mm



The making

1 First and foremost, all PPE is checked to be in perfect working order. I ensure I have a clean visor and dust mask, the lathe is working correctly with all components clean and tools sharpened. The timber was air-dried ash.

2 All six sides of the box were marked out by drawing diagonal lines and the cross lines were marked out by dividing the thickness of the wood. Sometimes the cross lines were perfectly on centre and, as the picture shows, sometimes they were a little out. I used a centre punch to create a locating point on each surface.





3 Side A is facing the tailstock. To start I held the piece between centres. I had a 19mm dedicated drive in the headstock and a 10mm revolving centre in the tailstock. Using the 10mm drive is something I would somewhat regret later in the project. As mentioned in the introduction, there was a lot of time the tool was in negative space. I used a 10mm bowl gouge for the initial shaping, taking light, controlled cuts.

4 I know from making square pieces it is inevitable there will be cuts directly into end grain. It can't be avoided cutting a piece like this. I ensured I took light, controlled cuts working towards the centre. The line I marked was a good reference until the wood from the centre was removed. I created a flowing curve and the air-dried ash was very agreeable to my tooling and I achieved a good finish from the tool. No sanding was done at this stage.

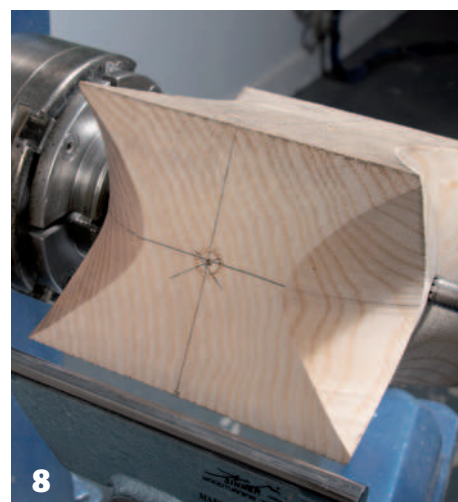
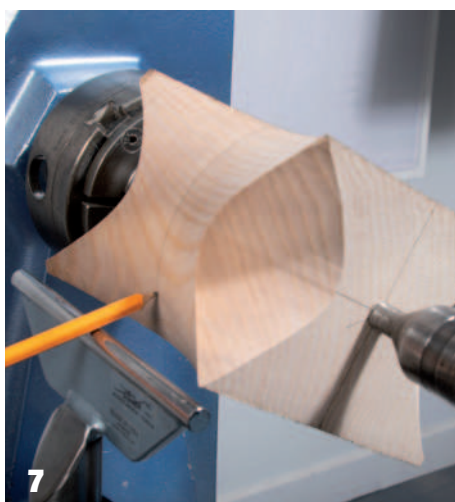
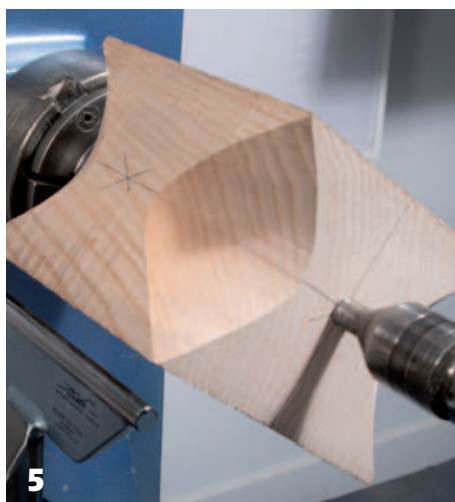
5 Side A is parallel to the lathe bed. I changed the orientation of the piece to start working on the sides. As before I mounted the piece between centres.

6 Using the 10mm bowl gouge and the same technique of working towards the middle, I created a similar curve to the previous step. I was able to use the line of the first curve for reference to give a crisp corner.

7 As I had removed the centre pencil lines during turning, I created new centre lines for centring the piece to turn the next axis.

8 Side A is parallel to the lathe bed. In this picture you can clearly see the centre is not accurate. I split the difference with the centre punch.

9 As before, I used the 10mm bowl gouge to create the flowing curve and used the line from the adjacent curve as a reference for my shaping.



10 Side A is parallel to the lathe bed. I then wanted to turn my attention to creating a tenon on the base. I drilled a 5.5mm hole in what would be the top side of the base to accept a screw chuck.

11 Once I had the piece mounted securely on the screw chuck, I marked out a 50mm tenon to accept my chuck. With this being the top of the base, it would be hollowed later.

12 Side A is facing the headstock. I created the tenon using a 4mm parting tool. As I was using straight, serrated jaws, a 90° tenon was needed.



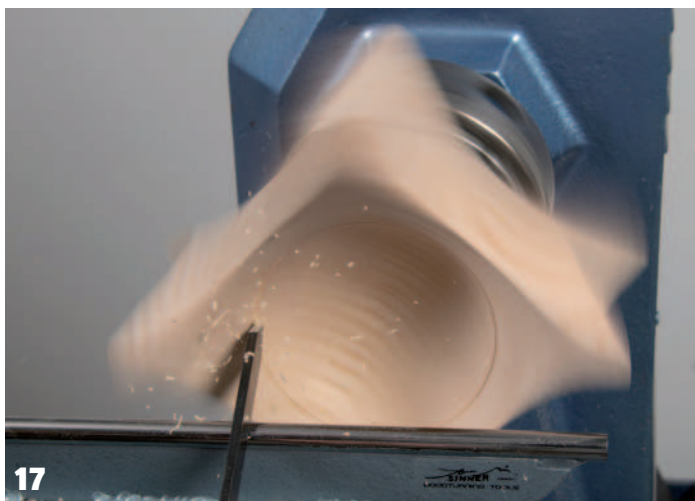
13 Side A is facing the tailstock. With the base secured in the chuck I was able to hollow the top of the box. I used the same 10mm bowl gouge to remove the bulk of the wood.

14 With full PPE and dust extraction in place, the inside was turned and sanded with 120, 180, 240, 320 and 400 grit sandpaper. The arrow indicates the rotation of the sanding arbor as the piece rotates anti-clockwise.

15 At this point I sanded the sides. The piece was stationary during this process. I mention regretting using the 10mm drive centre previously – the 10mm drive left a deeper depression in the wood than the 19mm drive. I purposely used the steb centres as they don't leave as deep an indentation as a cone drive would. It took a little more sanding to remove the 10mm drive's footprint on the piece.

16 For ease of access I sanded the area closest to the chuck from the opposite side.





17 Once the sanding was completed, I cut the recess for the lid using the 4mm parting tool. I did not do this prior to sanding as I wanted to maintain the crisp corners of the recess.

18 To finish the bottom of the base I needed to make a jam chuck to support the piece while turning. I mounted the piece for the lid between centres and created a tenon. Using the 10mm bowl gouge, I removed the bulk of the wood and refined the tenon with 4mm parting tool.

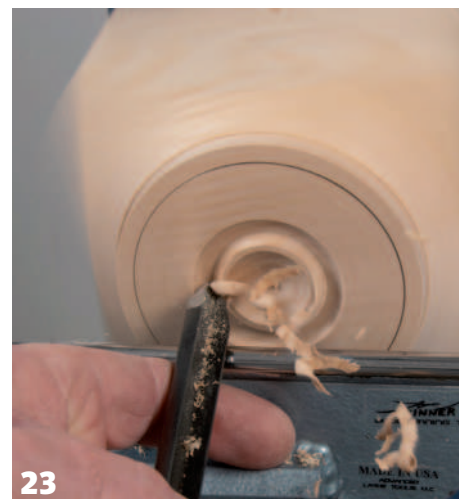
19 Once I had secured the piece in the chuck, I marked out a tenon to suit the recess of the base. Creating the curve on the underside of the lid took a few attempts as I wanted the curve of the lid to complement the base. I also wanted a tight fit for the lid so I could use it as a jam chuck when completing the base.

20 The tailstock supplied additional support while I removed the bulk of the wood.

21 Taking light cuts I wanted to create a curve to match the shape of the top. As the base will sit on the outside corners, I created a convex area to match the shape of the inside of the base.

22 With the tailstock removed I gently removed the remainder of the wood. I then sanded with 120, 180, 240, 320 and 400 grit sandpaper.

23 With the base complete I wanted to address the tight fit of the lid. It was a good, secure fit for a jam chuck but for practical use I needed to loosen it. I took a very light cut with a parting tool and sanded gently until I had the fit I needed. I also took into consideration the finish which would be applied. I was then able to start removing the underside of the lid.





24 To clean up the underside of the lid, I used a 19mm round-nosed negative rake scraper to refine it.

25 I then sanded the inside of the lid with the 50mm arbor using 120, 180, 240, 320 and 400 grit sandpaper. The flat areas were sanded by hand with piece stationary.

26 As the original blank was 105mm deep, I cut off the excess with the bandsaw. I did not want to have a lid that would overpower the base.



27 To finish the top of the lid I used a scrap piece to create a jam chuck. I created a recess to accept the tenon of the lid.

28 Once the piece was secure in the jam chuck, I removed the bulk wood to create wall thickness of the flat area on the lid.

29 With the flat area established, I thought about the rest of the lid and how it looked in relation to the base. I decided on a dome shape to complement the base. I also added a detail area where the transition between the flat area and the dome were on the piece.



30 The top of the lid after some refining and sanding. I did consider a finial-type knob but felt it was unnecessary. The piece received several light coats of satin lacquer, sanding lightly with 320 grit sandpaper between coats. ●



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Two Technologies Giving Unequalled Performance

Stack lamination

Mark Palma gets nostalgic for an interesting technique that makes use of scrap wood



Laminating boards together with glue to create a larger piece of timber for woodturning projects is nothing new. The technique was very popular in the 1950s and '60s and is featured in many old how-to books. So, whether you are in a nostalgic mood, or just being frugal and trying to turn something from some scraps, stack lamination is worth exploring as a project technique. Through trial and error (lots of the latter) a few suggestions have emerged that may make your first stack lamination project a better success.

Gather your scrap piles, sort and develop your plan

Gather scraps of timber that may be possible to use in your project. Cull out any that are cracked, warped or cupped. You need flat, sound surfaces to glue together. Avoid timber that does not accept glue well, a problem with some oily exotic timbers. Timber thicknesses can vary based on your scraps. Under $\frac{1}{4}$ in and you probably will have a difficult glue-up. As your thickness increases, sometimes the work becomes somewhat chunky. Depending on the size of your piece you may need to



1 Gather your scraps

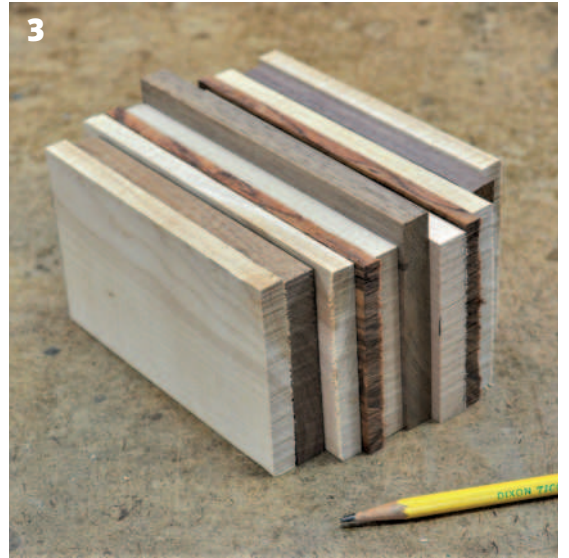
experiment to find the balance of timber thickness (or possibly various thicknesses, depending on your goal). Stack up your pieces and experiment with a pleasing design.

Stack laminations can be used for spindle projects, bowls, pen blanks and large projects. I have several lamps in my home that are variants of this very technique. The design possibilities are endless.

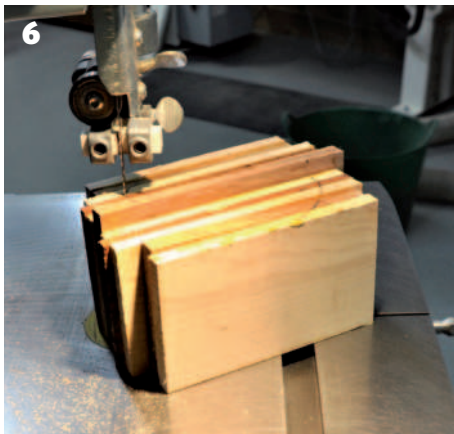
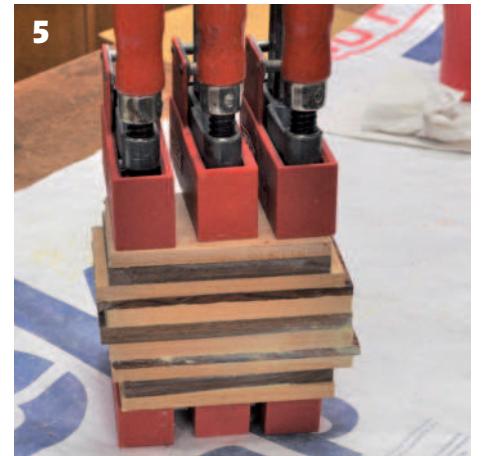
Stacking your work vertically versus horizontally will result in very different end

results. There are infinite variations depending on your imagination. However, for this first exercise start with something simple. For vertical work, use an odd number of pieces and a balanced number of laminations on each side. This will result in even horseshoe curves on each outer edge.

One tip on horizontal stacked pieces is to orient the layers so that the end grain is all on the same sides of each layer. This will make sanding easier as the stack will act more similarly to solid timber. On the



2 Examples of horizontal and vertical orientation for a bowl **3** Develop a pleasing design and dry-fit the pieces before gluing
4 Glue up the blanks using good gluing techniques **5** Clamp the glue-up and let it sit for 24 hours



6 Cut out on the bandsaw **7** The end result

horizontal stack examples, a wedge of wood was glued to the rim side before turning. When the faceplate was attached to this wedged side, it canted the work on the lathe and resulted in the corkscrew design you see. No complicated joinery was involved. However, the results are interesting and may cause people to question how you accomplished your resulting work.

Creating the blank

Cut your timber to rough size (slightly oversized is helpful). Dry-stack the pieces

together to see if they all fit tightly and will clamp together well. Organise your work area to protect your workbench from glue. Use fresh glue and good gluing techniques to make sure you have a uniform coat of glue on each layer. Then apply good clamping pressure and allow 24 hours under the clamps for the glue to cure thoroughly in the proper temperature range for the glue you are using.

The blank was then bandsawn into a rough circle. Next it was mounted to a faceplate. Turn to a shape pleasing to you, sand the

piece through the grit comparable with your chosen finish and apply that finish.

The end result

Stack laminated pieces are intriguing to the eye. People pick them up, examine them, and seem to smile. The bowl examples in this article are no exception. Each was sanded through 600 grit and received an oil and wax finish. Throw some snacks or candy in one and they make a very nice little knock-around bowl in any home. All from some leftover scraps found in a corner.

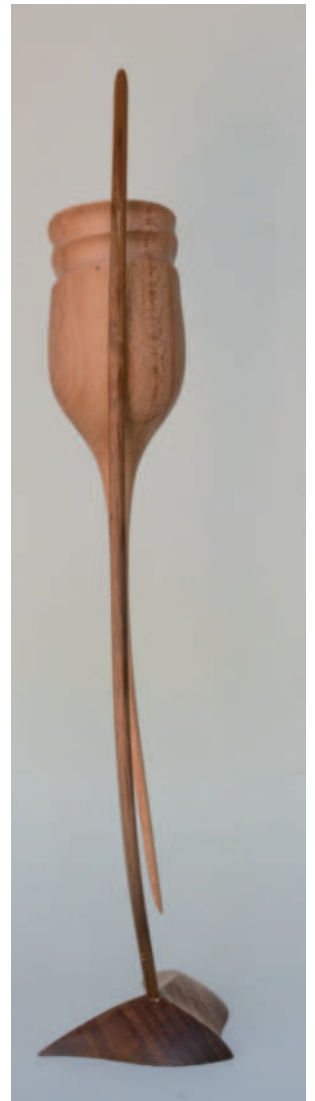
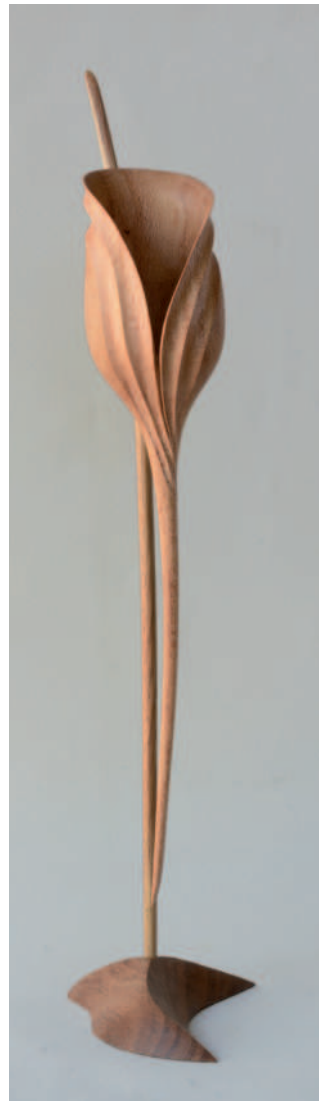
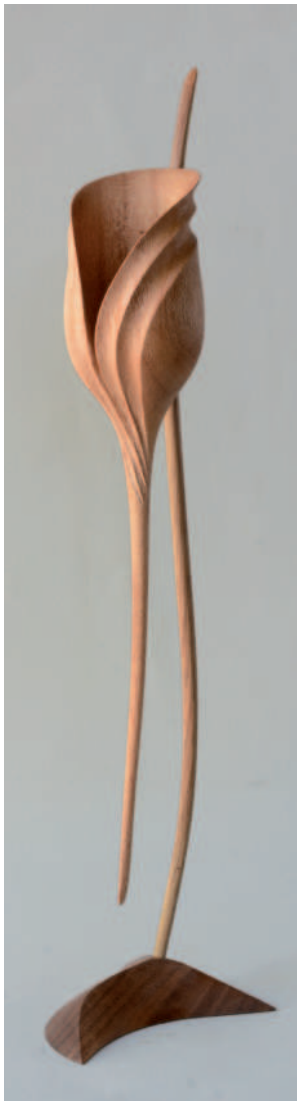
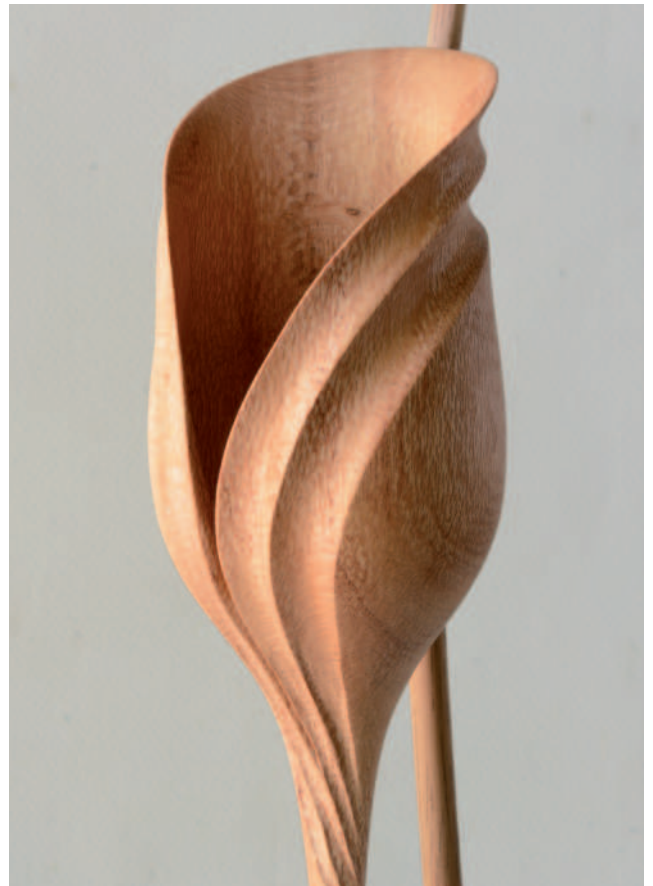
Fluted pod

Andrew Potocnik flexes his imagination with this project involving bending

In recent years I've made a number of sculptural pieces that include what I call 'pods', which are similar to traditional goblets but with stems that taper to a point. The 'stem' is then bent to a gentle curve. Several 'pods' are attached to a central stem, which is also turned and bent. Sometimes I attach the assembly to a backing board so the piece can be hung on a wall, or fit it with a stand so it can be free standing.

This time I wanted to take the concept a step further, exploring an idea that has been niggling me for quite some time. Generally I turn the walls of these quite thin, but this time I needed to leave more material than usual so I could carve a series of flutes that circle the rim and then follow the carved opening down to the stem. A trial piece that I made several years ago had sat on my bench teasing me to take the plunge and follow the idea through, so now was the time to get to work. But first, a word of warning.

I chose silky oak for my project, but some people react negatively to wood from the grevillea family, so make sure you're not one of those people. Really, you could choose any wood; however, one that carves well is preferable.



Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- 25mm spindle roughing gouge
- 10mm bowl gouge
- Parting tool
- 12mm fingernail-shaped bowl gouge
- Skew
- Fingernail-shaped scraper
- Figure eight callipers
- Micromotor and burrs
- Carving gouges
- Hand files
- Luthier's bending iron (or alternative bending rig)

Timber used

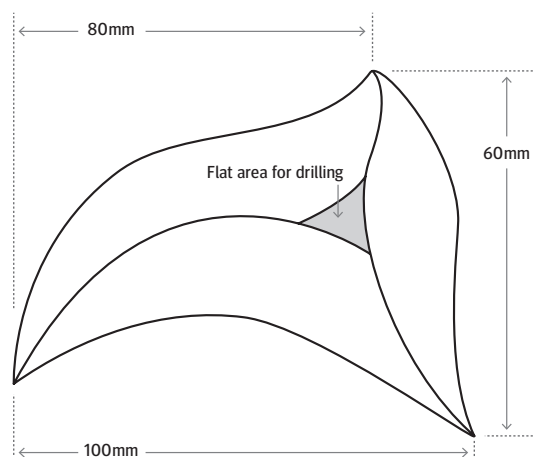
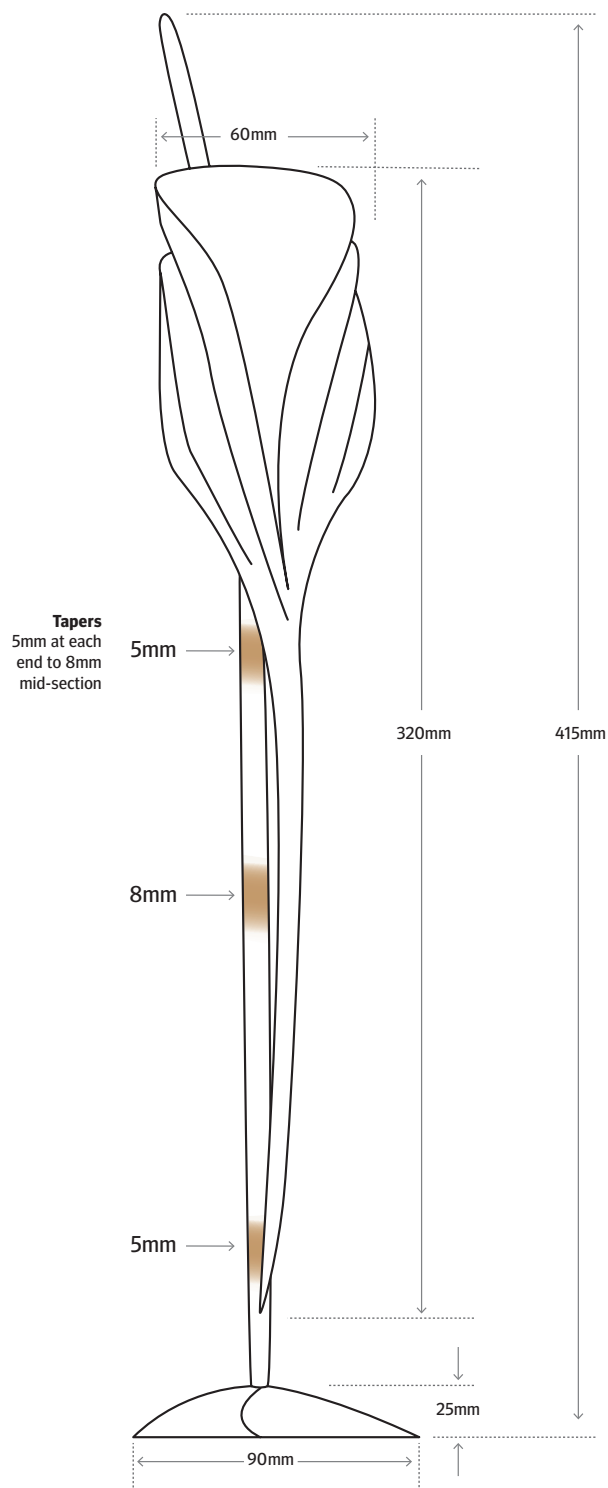
- Silky oak of about 60 x 60 x 350mm
- Blackwood of about 12 x 12 x 400mm

TOP TIP

When using green wood, some of the moisture held within its cells may spray out as the blank spins, so make sure to cover any bare metal surfaces of your lathe. It is also advisable to wear a full face shield to prevent any spray getting on to your face.

The making

1 The silky oak I selected was still wet, or 'green'. I keep my wood in plastic bags until I'm ready to use it, which makes the wood easier to turn. However, this project can be made using dry timber. I mounted the wood between centres, trimming it down to about 60mm at one end, then used a parting tool to cut about one-third of the way into the wood. A second cut was made about 12mm to the right to form what I refer to as a 'collar'. The section to the right of the collar was then trimmed to a little under 12mm, which is thin enough to fit inside the lathe's spindle.



2 The blank was reversed and fitted into a scroll chuck with the jaws gripping the collar. Don't worry about damaging the collar as it will be turned away later.

Now the outer portion of the pod can be shaped in preparation for hollowing.

3 The interior was hollowed, leaving about 2mm of wood at the opening and progressively more further down the form. I left about 5mm wall thickness about three-quarters of the way down. I used a 10mm bowl gouge to remove the bulk of material, and scrapers to finish off the inner surface.

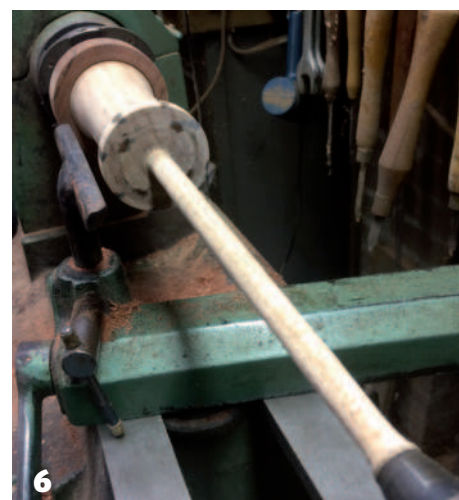
4 To sand this portion of the pod I heated it gently with a heat gun, just enough for surface moisture to evaporate. Once the surface is dry the friction caused by sanding will continue the drying process, but if your timber is really wet, you may need to use the heat gun again. I sanded through to 320 on the inside and 180 on the outside as this surface will be carved later.

5 To reverse the form I mounted a scrap piece of wood into the scroll chuck and turned a recess identical to the outer diameter of the pod. Vernier callipers were used to measure the diameter and then the recess, which was cut with straight sides using a square carbide scraper. Although this carrier could be a jam fit, a really tight fit is not necessary as the tailstock will be used to hold the pod in position.

6 The tailstock was pushed into position, but it's important not to put too much pressure on the pod as the stem may flex as it is trimmed down. A firm fit in the carrier, or a bit of heat-sensitive glue, can help to grip the pod and reduce the amount of pressure required from the tailstock.

7 I trimmed the unwanted collar down, running the curved surface of the pod into the stem. At this point there will be some flex that needs to be negated to prevent getting a catch, which will destroy your work. I place my left hand palm up under the toolrest and hold the gouge with my thumb and 'pinkie' while my index finger supports the wood. I also rolled the gouge on to its side so the wing cuts almost like a skew would. Once trimmed to a taper, the stem was sanded through to 320 grit, but first I needed to dry the newly cut wood as I did in the description for photo 4.

8 The pod was left for a couple of days to dry before I could begin to shape the front area. I could have dried it in a microwave to speed up the process, however, I wasn't in a hurry. In the photo you can see that I had turned two pods, along with the sample that had been teasing me. I generally sketch some guidelines in pencil, adjusting them until I arrive at a shape I find pleasing.



9 I prefer to use a jeweller's piercing saw to cut away waste material because it has a very narrow kerf, but you need to be very gentle as the blade can break if twisted or too much pressure is applied. Another advantage is that you can cut down to a fine point where the two sides of the pod meet.

The photo also shows how thick the sides of the pod are at this stage.

10 A series of burs fitted to a micromotor, rasps and files were used to thin down the inner edges of the pod. Sandpaper was used to even out the surface so it blended into the turned inner walls, as well as adjusting the curved opening, which now had a thin edge.

11 To begin work on the flutes, I drew guide lines in pencil, roughly parallel to the edge of the opening but tapering as they approached the stem section. Again, burs, rasps, files and a microfile were used to remove waste material. As the flutes narrowed I also used narrow carving gouges and jeweller's files.

Next came the tedious part – hand sanding to ensure the flutes were smooth, even and the edges were crisp. Dowels of various diameters and fingers were used to get into tight areas, concentrating on not rounding over edges, otherwise definition and visual effect would be lost.

12 To make the stand I opted for some Tasmanian blackwood, but as it needed to be about 450mm long and only less than 10mm at its thickest, there would be quite a bit of flex right from the point when I began to rough turn it. I began in the middle of the spindle using a roughing gouge and trimming the left and right sides later. One way of supporting the wood is similar to that used when trimming the pod with what could be called an underhand grip.

13 The other method of support could be referred to as an overhand grip, where the heel of my left hand was placed on the toolrest and fingers curled around the spindle. My fingertips were pressed against the lower portion of the toolrest and my thumb guided the gouge. My right hand held the handle close to the base of the blade while my forearm pressed the lower part against my body.

14 You can see that I used a scroll chuck to hold the spindle and reduce pressure at the tailstock end. However, there still was flex as I turned it down to about 8mm in the middle and 5mm at the ends.

15 To shape the spindle I used a Luthier's bending iron (see Top Tip, page 44) which acts the same way as a clothes iron. Once heated, the spindle is pressed against it with gentle finger pressure applied to flex the wood. I had soaked the spindle in water for an hour prior, but as the heat dries it, I sprayed water on the dried surface frequently.



TOP TIP – BENDING

The Luthier's bending iron is an ideal tool for this type of bending, but probably isn't something most turners would have to hand.

There are a number of other methods which can be used, ranging from an expensive heated silicone mat system, a simple steam box, such as might be used by chairmakers, to shop-made steel, aluminium, or copper heated pipe rigs. Another option is to soak the stem in water and wrap it in cling film then microwave it for a minute or two. The stem would then need to be clamped to a former, against which the stem would dry and set to.

An internet search should provide some ideas you might explore and use.

16 To make the base of the stand I cut some more blackwood and shaped it, first on a belt sander and then with rasps, files and sandpaper. The shape can be anything you want, and I have included a basic drawing, but you can play with the shape and make it personal to your own preferences. It just needs to be large enough to support the pod.

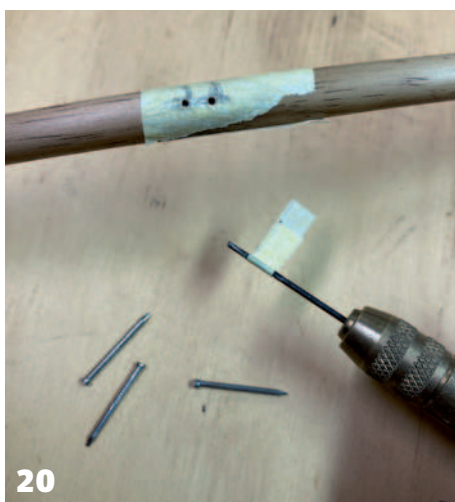
17 A brad point drill matching the stem's diameter was used to create a hole angled slightly so the S-shaped stem would look balanced once all components were assembled.

18 The top end of the stem was tapered on an angle away from where the pod would later be attached, so that it blends into the curve of the 's'.

19 The stem of the pod was treated the same way. It was bent slightly using the Luthier's iron and the end tapered to continue the flowing curve of the stem. All parts of the pod's exterior were then hand sanded to remove leftover pencil marks and grain that was raised during the bending process.

20 In the meantime, I had already applied a coat of polyurethane to the stand, and now applied some masking tape to it so I could place registration marks where I needed to drill holes for pins that would connect the pod to the stand. The 'pins' are merely 1mm brads, so two holes of the same diameter were drilled. Again, I used tape to indicate how far to drill with a micromotor.

21 The pins were pushed into place and excess length snipped off with pliers. The resulting points were pressed into the pod to mark where matching holes were to be drilled. Now for a finish on the pod, some glue applied to the holes, pins inserted, and the stand could be attached. I sometimes push the pod and stand together until their surfaces meet, but this time I left a small space between the two.



Conclusion

I had hoped to complete several of these 'pods' and create a cluster that would form a sculptural piece, but time got the better of me and left me with another ambition to fulfil later. In the meantime, I'll continue to experiment with new techniques that enhance the pods, striving to achieve combinations that are visually and physically balanced and pleasing to the eye. ●



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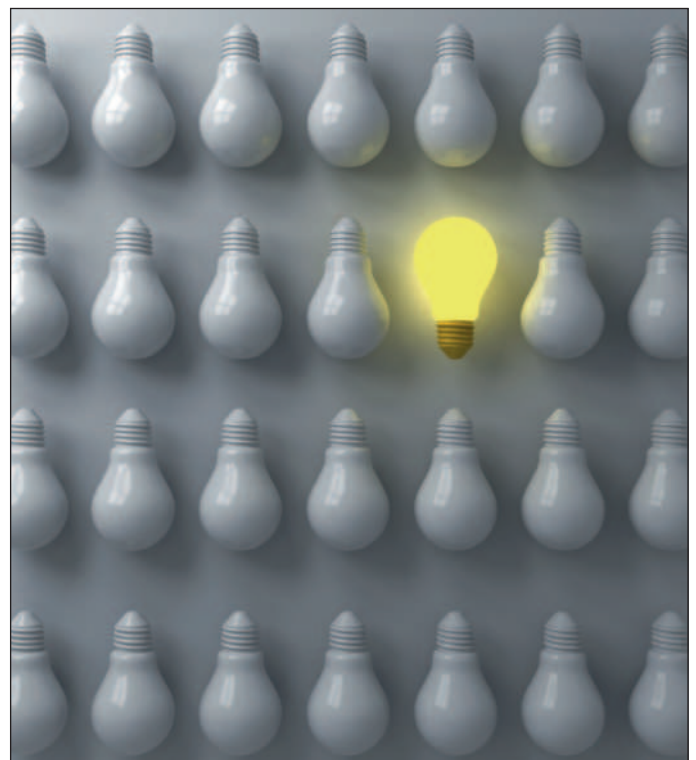
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Pair of heart-shaped bowls

James N Duxbury shows how four halves can make two wholes

Customarily the heart shape is used worldwide as a symbol of emotion, caring, and love. It is widely thought to be the shape of the human heart, however, anatomically the shape is very different. The heart shape also does not lend itself to conventional bowl turning, but I needed a heart-shaped bowl for my wife, and Valentine's Day was only a few weeks away. That was last year and I didn't quite make it in time. However, I was only a couple weeks late. This shape had to be made in two bowls so it took longer, but now she has two heart-shaped bowls – maybe one for next year too?

The two-half concept for making this bowl is being shown as a heart-shaped design. However, with a little imagination many unconventional turned shapes could also be made. The process we are using is just two bowls but it could be three or even more.



PHOTOGRAPHS BY JAMES N DUXBURY

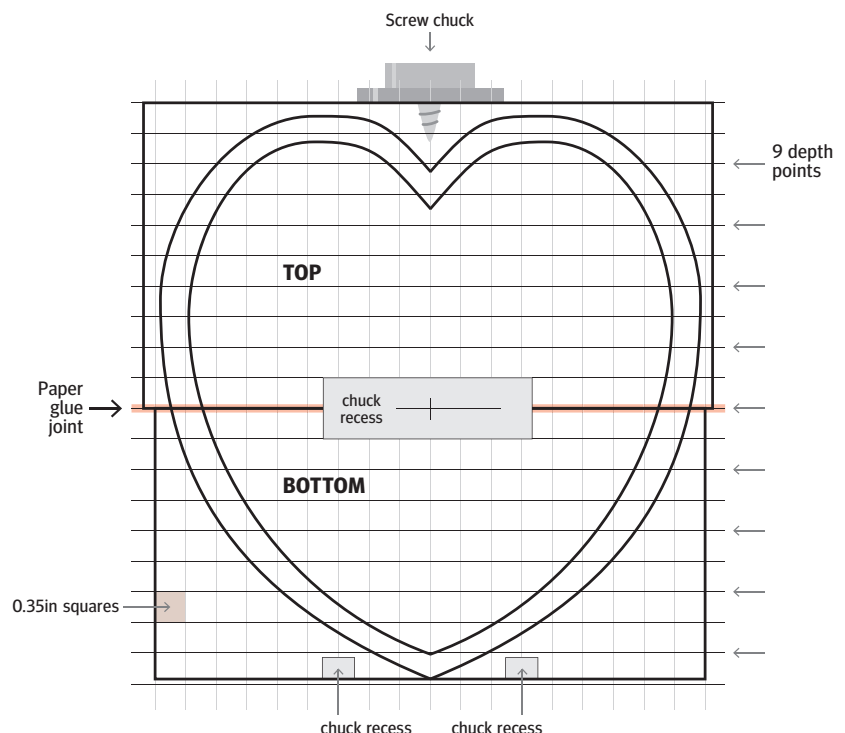
Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- Pair of compasses
- Steel ruler
- 1in (25mm) spindle roughing gouge
- $\frac{3}{8}$ in (10mm) spindle gouge
- $\frac{3}{4}$ in (19mm) skew chisel
- $\frac{1}{8}$ in (3mm) parting tool
- Callipers
- Dividers

Materials

- One piece $6\frac{1}{2}$ in dia. x $3\frac{1}{2}$ in thick (165mm dia. x 90mm thick)
- One piece $6\frac{3}{8}$ in dia. x $3\frac{1}{8}$ in thick (162mm dia. x 79mm thick)
- Yellow wood glue
- One piece of brown paper bag 7 x 7in (178 x 178mm)
- Finish of choice



The making

1 The material will consist of two pieces of straight-grained hardwood such as cherry, maple, walnut, or mahogany. In this case madrone wood is being used because it has an interesting straight grain pattern. The light-coloured wood also makes pencil lines show up better, which can be very helpful in this particular project. Mark both pieces Top and Bot (Bottom) for reference

2 Mark the centres in both pieces. Drill a hole about $\frac{1}{2}$ in (13mm) deep, the size of your screw chuck screw, on the top piece only.

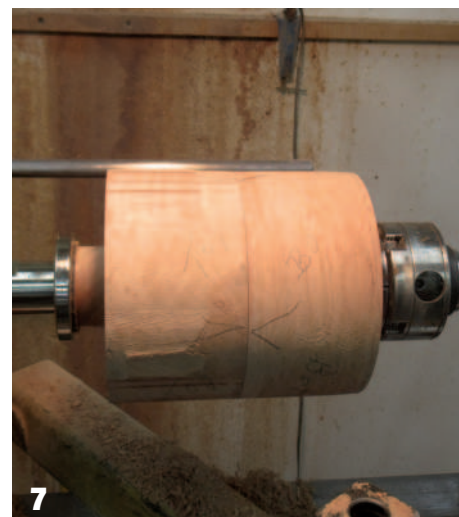
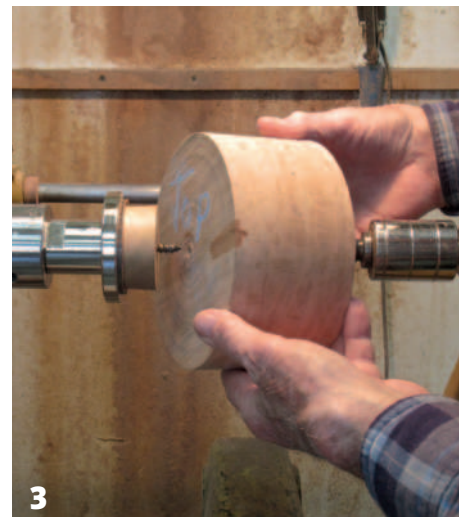
3 Put the screw chuck on the lathe and mount the top piece. Note: If the screw is too long add wooden disc shims so that a maximum of $\frac{5}{8}$ in (16mm) screw is being used.

4 Bring up the tailstock and turn this surface flat. Then, with a parting tool, cut straight in to make about a 2in (51mm) diameter recess, $\frac{1}{4}$ in (6mm) deep to fit your chuck jaws in expansion mode. Remove the recessed surface to the centre nib with a $\frac{3}{8}$ in (10mm) spindle gouge.

5 This top must be a flat, smooth glue surface. To accomplish this, turn the lathe speed down and press a piece of 80 grit sandpaper glued to a flat piece of plywood against the surface.

6 Remove the screw chuck from the lathe leaving the top blank attached. Mount a spur drive in the drive spindle, hold the bottom blank centred against it and add pressure with the tailstock. Then, with a parting tool, cut a recess $\frac{3}{8}$ in (5mm) deep to fit your chuck in expansion mode. Be sure to leave a tenon in the centre at least $1\frac{5}{8}$ in (43mm) diameter. The width of the recess can be whatever is required to fit the chuck jaws.

7 Remove the blank, mount a chuck on the lathe, mount the bottom blank on the chuck, bring up the tailstock and flatten the other flat side similar to Step 5. When that is complete, remove the blank with the chuck in place and, with the use of a tailstock adapter, mount the chuck and blank on the tailstock. Then mount the screw chuck with the top blank on the drive spindle.



8 Now the top and bottom blank will be glued together with a piece of brown paper shopping bag sandwiched between them. This will allow the blanks to be easily separated later. Apply yellow glue to about 1½in (38mm) to the inside outer ring of the top blank, add a slightly larger disc of brown paper, add similar yellow glue, bring up the tailstock with the bottom blank and apply pressure. The glue can be applied with the lathe off or on at a very low speed.

9 Turn the lathe speed down so excess glue will not fly and, with a ¾in (19mm) skew chisel, trim off the excess brown paper. Let the glue joint dry overnight.

10 Now the glued-up blank is ready to be turned together. True up the outside with a 1in (25mm) spindle gouge.

11 Next you have to refer to the drawing to locate the nine depth points. Set your dividers to the proper spacing shown. All dimensions will be referenced from the paper glue joint for precision.

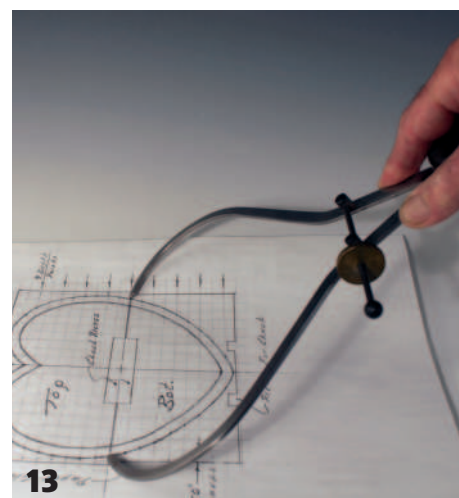
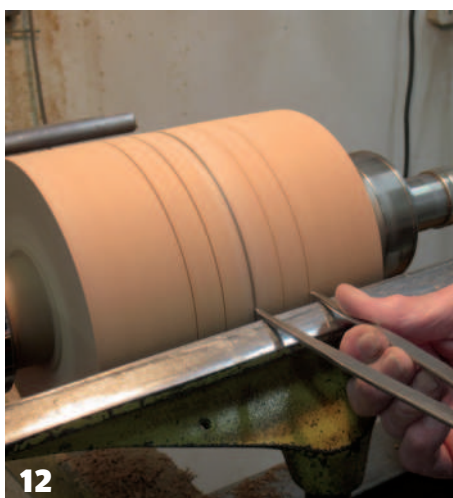
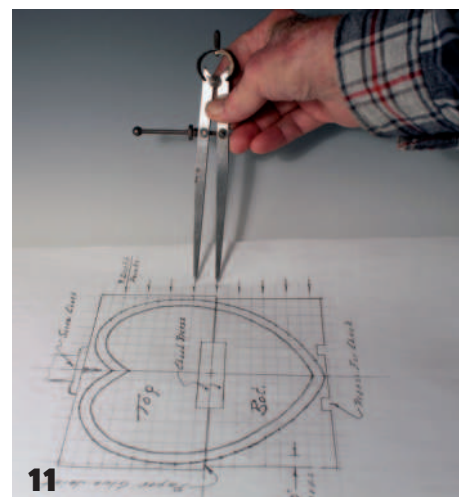
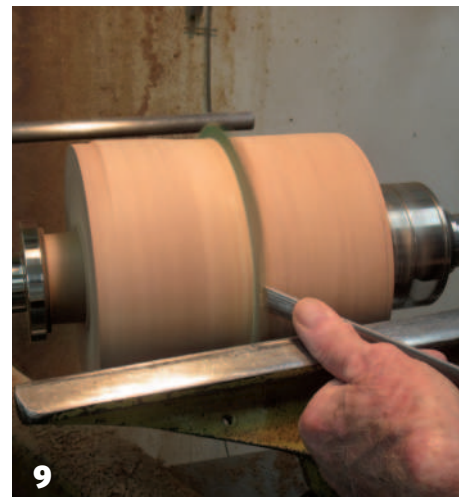
12 Turn the lathe on low speed and, with the dividers held flat on the toolrest, place one point in the glue joint and cut a small groove. Hold that point in place and swing the dividers to cut another groove to the right. Swing the dividers over and cut a similar groove to the left.

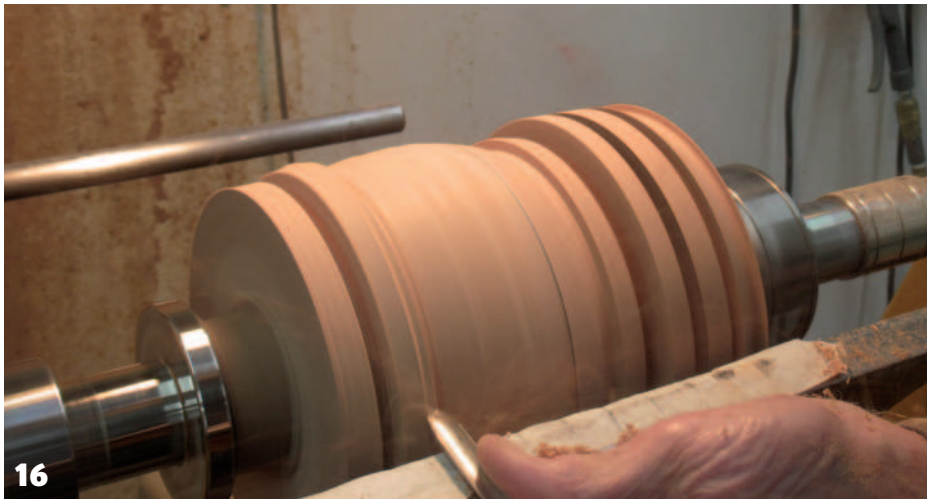
Go back to the drawing and set the dividers to the second set of two depth points. Note: Always reference the depth point settings from the paper glue joint. The spacing is the same for all points, but stepping the dividers from one point to the next compounds error and is not good practice. Place the first point of the dividers in the glue joint and similarly cut the next two grooves. Repeat this procedure for depth points three and four.

13 Again, refer to the drawing and set your callipers to the outside dimension of the heart at the glue line.

14 Centred on the glue joint, with a sharp parting tool cut a ¼in (3mm) wide groove down to this dimension.

15 Similarly, cut outside diameters centred on the other eight depth points. Remember when taking dimensions off the drawing there is a top and bottom. Be sure these cuts go in the right directions.





16 When all the depth point diameters are defined, start removing the material from one point to the next. This is being done with a $\frac{3}{8}$ in (10mm) spindle gouge but a roughing gouge in skilled hands would work well also.

17 The final cuts are made with a freshly sharpened spindle gouge. Be careful and take your time.

18 Once the final heart shape is completed other than the mounting areas, remove the toolrest and sand through to about 400 grit.

19 At this point the majority of the outside is complete and the two pieces can be separated. Pulling pressure from the tailstock may be enough, but if not the thin blade of a knife carefully wedged into the paper joint should separate the two sections.

20 Remove the tailstock but do not remove the bowl from the chuck. Now with a $\frac{3}{8}$ in (10mm) spindle gouge start to turn out the inside of the heart. Refer to the drawing for wall thickness.

21 A depth gauge can be very helpful. To find the depth, lay the gauge on the drawing and set it as required for each depth point. Take your time, stop the lathe and refer to the drawing often.

22 With the use of the drawing, make a half-bowl template of rigid paper. This template can now be used to show the high spots where material has to be removed. Check often. Low spots would mean that you have gone too far and that would be a problem, so take great care not to produce any.

23 Once you are satisfied with the shape, the final sanding can be done. Remove the toolrest. Slow the lathe down and bend the sandpaper to fit the surface being worked on. Sand through the grits to about 400. When the sanding is complete, check the top rim of the bowl. It has to be smooth and flat, no paper or glue. If needed see Step 5 to true it up.



◀ **24** Remove the top section and mount the bottom section with the chuck. Begin turning out the V-shaped bowl bottom. Again, stop the lathe often and use the depth gauge with the drawing to achieve the final shape. Here again a template can be of help. Sand all interior surfaces through 400 grit and true up the rim as in Step 5 for a good glue joint.



25 Remove the chuck and mount a padded faceplate disc. Place the bowl against the faceplate, bring up the tailstock and add pressure. Carefully start to remove the tenon. Note: The tool pressure is towards the faceplate for making heavy cuts.



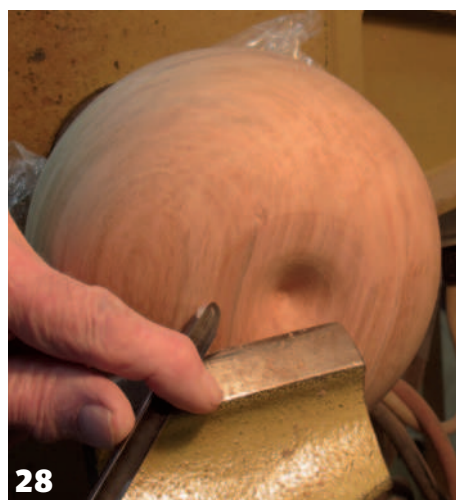
26 The final cuts are made using a very light touch with the bevel rubbing towards the tailstock. Take your time and continue the V-shape down to a small nib under the tailstock centre.



27 Remove the toolrest. Do as much sanding as possible and blend the surfaces together. Remove the piece and carve the nib off to the point desired. Final sand all surfaces.



28 Now it is time to finish the top of the heart-shaped bowl. I am using a vacuum chuck. If you do not have one, the piece can be mounted on a flat faceplate disc held in place with hot-melt glue. Use the tailstock for alignment in both cases. Start to turn the indentation in the centre of the shape.



29 A moulding template works well to check the outside curvature of a bowl. A stiff paper template will also work, however in either case stop the lathe often and check the shape by referring to the drawing. Take your time.



30 Remove the toolrest and final sand all surfaces to about 400 grit. Use a very light touch, bend the sandpaper and blend all the surfaces together.



31 Take a steel rule and draw a line through the centre of each bowl. Note: The cut should be with the grain. This makes a good long-grain glue joint and helps to match the grain pattern when the two bowls are glued together. Take your time and cut the two bowls in half. This can be done on the bandsaw or with a handsaw.





32 Now you will have two bowls cut in half. At this point it is looking rather strange, however the bowl halves will be interchanged and the rims glued together. Experiment with the pieces to see which grain patterns match the best.

33 Now the heart shape should become apparent. Put the pieces together and set them on a flat table. If the glue joint is not tight, sand the high spots off with a sheet of sandpaper on a flat surface. Note: Do not sand the glue joint surfaces. Sand only the bandsaw cut side.

34 Before gluing, dry-fit the pieces. This can be done by clamping a piece of wood, 1 x 2in (25 x 51mm) in this case, to the edge of a flat table for a stop. Place the bowl tops against the stop, press them together, one at a time, and hold each one in place with a block of iron or some other fairly heavy object.



35 Remove the pieces and carefully spread yellow wood glue on all four glue surfaces. Return the bowls and clamp securely.



36 When the glue has dried, remove the bowls and final sand the glue joints. This can be done by hand but a 3in (76mm) disc on a pillar drill saves a lot of time.

37 Finish the bowl with your finish of choice. In this case, multiple coats of lacquer were used. As an option, to set off the heart-shaped rim it was blackened with some pyrography.



38 Wow! It is love at first sight. ●



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Lighthouse stacker

In his book *Turned Toys*, Mark Baker recreates a toy he remembers fondly from his childhood

There are many variants of stacking blocks. The ones I had as a child were the 'freestyle' blocks, which you used to build whatever came into your head. Others, like the blocks in this project, are designed to represent something specific. Here, stacking blocks that graduate in size are assembled in the correct sequence to create a towering lighthouse.

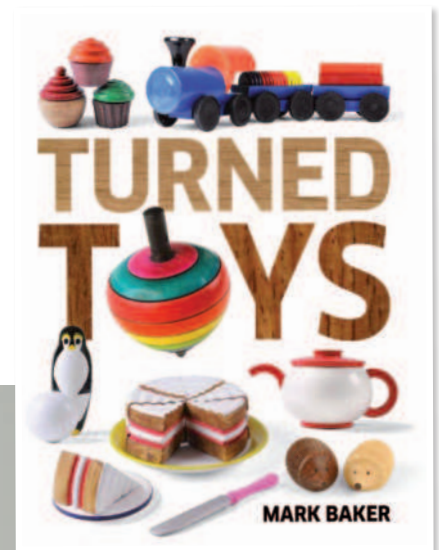


Lighthouses, with their remote coastal locations and association with shipwrecks and rescues, are designed to capture the imagination. There is one near where I work, and it is a wonderfully iconic building whose tapering white-and-red ring structure works perfectly in the form of stacking blocks.

I must admit that I have made this lighthouse a little bit tricky for the person playing with it, and the child has to work out how to hold the blocks effectively. You could shape each graduated block as a doughnut shape – this is an easy shape to grip – but you could also create some deep V cuts on each intersection to provide

another type of handhold. I also made the blocks quite heavy. Of course you can scale the lighthouse up or down, but if the blocks are too heavy and one is released by a child while they still have fingers under the block, there might be a nip/crush problem. Always be aware of the weight when making things – in this project, you could hollow out the underside of the blocks to lessen the weight.

To construct my wooden stacking-block lighthouse, I used high-quality, laminated birch-faced ply in combination with solid maple. I then added some decorative tricks to make it a convincing model.



PHOTOGRAPHY BY ANTHONY BAILEY/GMC PUBLICATIONS

“
A wonderfully iconic building whose tapering white-and-red ring structure works perfectly in the form of stacking blocks
”

Plans & equipment

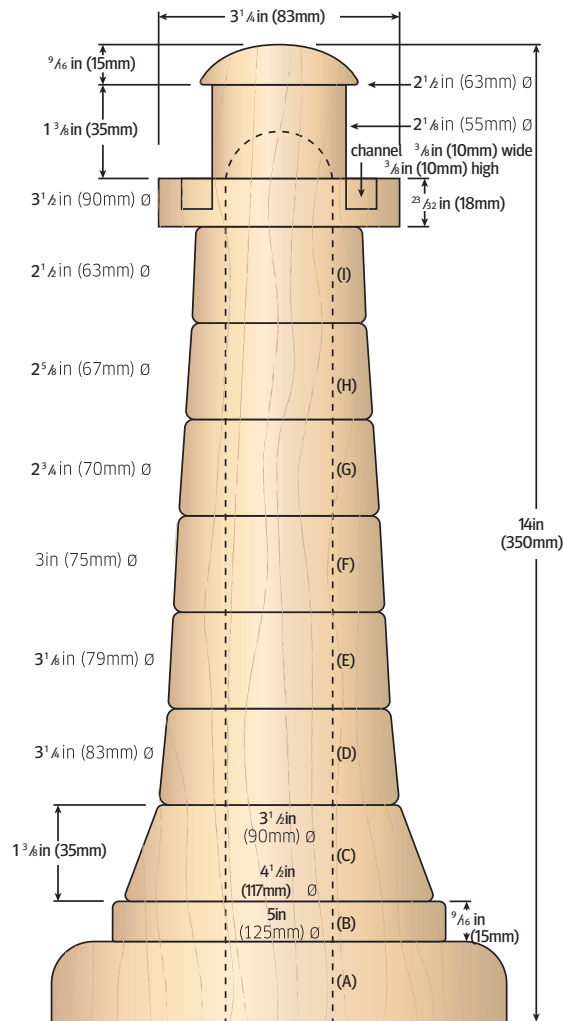
Tools & equipment

- PPE & RPE as appropriate
- Drive spur and revolving centre
- Chuck
- Drill chuck
- Drill bit, 1 $\frac{3}{8}$ in (35mm)
- Abrasives, 120–400 grit
- Callipers
- Bowl gouge
- Spindle roughing gouge
- Spindle gouge
- Skew chisel
- Beading and parting tool
- Thin parting tool
- Cordless drill and sanding arbor
- Glue
- Hammer
- Toy-safe paints
- Toy-safe pens

The making

1 I started off with a laminated ply block suitable for the bottom three parts (A, B, C). Mount this block between centres, true it up with a bowl gouge, and cut a recess in the lower section. At this point, remove the block from the lathe and mount it in the chuck. Now the block can be shaped. The lowest and widest of the three parts will form the base (A), into which you will later fit a central support post for the stacking blocks to slide down.

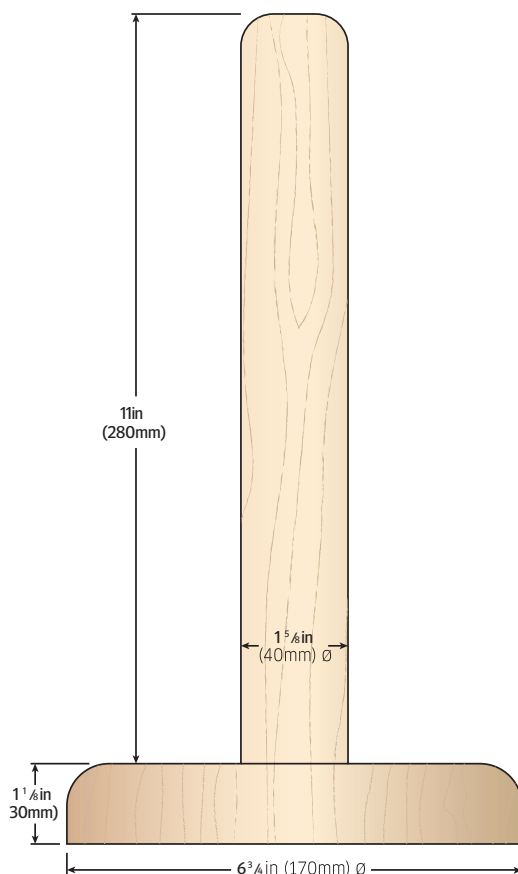
2 The diameter of the central support post is 1 $\frac{3}{8}$ in (35mm), and a hole needs to be drilled or turned to accommodate it. I chose to drill with the appropriately sized bit held in a drill chuck in the headstock. While this requires more expensive kit, it is simpler and removes the need to measure everything again and again. Eventually the hole will be bored all the way through the laminate block, but at this stage it need only be deep enough to clear the first parting cut.



STACKING BLOCKS PROFILE



PLINTH AND CENTRAL SUPPORT POST PROFILE



3 Once the piece is drilled, check you are happy with the shape. The top part of the block, which you are going to part off later with a thin parting tool, will form the lowest white band (C) of the lighthouse itself. It should have a wide base section and a gentle upward curve. Don't make this too steep, as the curve will run all the way to the top of the lighthouse and you don't want the top section so narrow that there is not enough wall thickness to fit on the central support post. Sand the top face and inner edge. Also, lightly sand inside the hole.

4 Clean up the face of the next part (B).

This is a narrow ring that will form the black plinth on which the lighthouse stands. Drill the central hole so that it is deeper than the next parting cut. Sand the accessible parts. The edge of this disc should be square with a slight chamfer top and bottom.

5 When you are happy with the shape, part this piece off with a thin parting tool, remembering to remove the blade every so often to clear the cut of shavings and suchlike to prevent the blade from binding in the cut.

6 Now shape the remaining part, which will become the base (A). This should have a rounded outer edge profile, which is tactile and easy to hold. The shaping can be done with either a bowl or spindle gouge. Complete the drilling of the central hole that you began in step 2. The chuck jaws themselves have expanded well past the $1\frac{3}{8}$ in (35mm) hole, so the drill cannot catch there. Between the ply block and the bottom of the chuck jaws, there is a 1in (25mm) gap. You can keep the piece on the lathe, slowly and gently moving the drill forward to cut just through but to stay clear of any metal parts. Alternatively, remove the piece and drill it off the lathe. Once it is drilled, sand all visible and safely accessible parts.

7 Create a waste-wood jam chuck that will lock into the hole drilled in the base. The spigot needs to be a tight enough fit to hold the base while you refine the recess underneath.

8 When you have created your jam chuck, mount the base on it with the underside outermost. Use a bowl or spindle gouge to clean up the underside, putting a chamfer on the recess section. Leave a $\frac{1}{8}$ in (3mm) dovetail or parallel side-wall section to lock in the chuck jaws later on. A parting tool can be used for this. Once shaped, sand to a smooth finish.

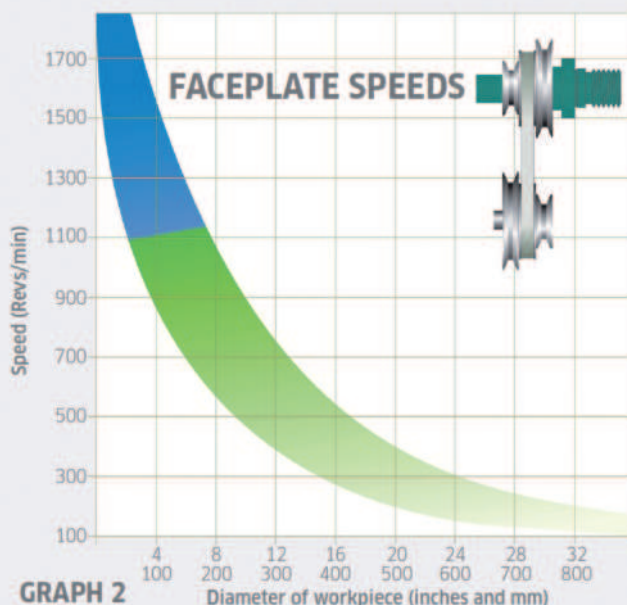
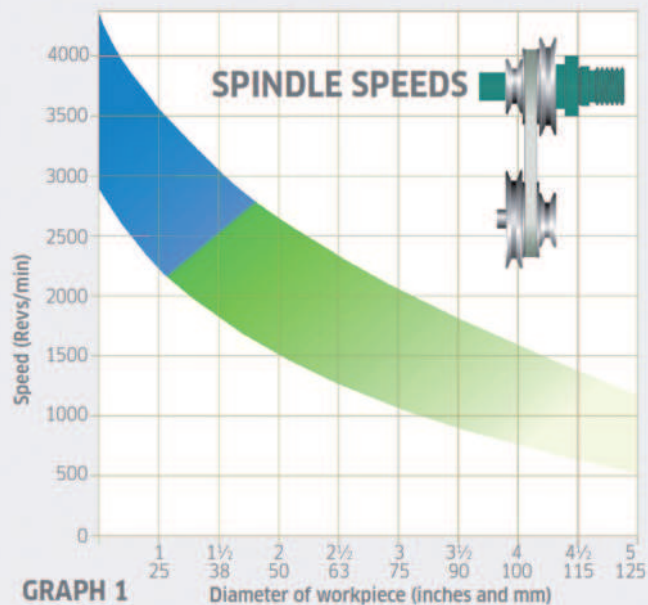
9 Next, create the central support post. I used a piece of maple (Acer sp.) for this. Mount between centres and roughly shape into a cylinder just over the $1\frac{3}{8}$ in (35mm) diameter required. I used callipers and a beading and parting tool to achieve the correct measurement of $1\frac{3}{8}$ in (35mm) at one end. This end will slot directly into the base, so it needs to be a good, tight fit.

10 Remove the post from the lathe and test for fit in the base section.



TOP TIP – REMEMBER YOUR SPEED GRAPHS

Select the appropriate one for the size and condition of the piece you are working on. If in doubt, slow things down.



11 Remount the central support post between centres. Take down to $1\frac{3}{8}$ in (35mm) with the spindle roughing gouge.

12 Cut a slot in the end of the central support post that fits into the base. Glue the post into the base, and fit a wedge in the slot to hold it all tightly in place. Don't worry about the excess part of the wedge at this point.

13 Remount the assembled piece on the lathe. Bringing up the tailstock will tell if everything is nicely centralised. I achieved this accurately by leaving a slight shoulder between the $1\frac{3}{8}$ in (35mm) tenon created at the end of the central support post and the majority of the post turned at $1\frac{1}{2}$ in (38mm). When you are happy with the fit, remove from the lathe and set aside to dry. When dry, cut off the excess of the wedge and sand that area. Remount it, and turn the central support post down to $1\frac{3}{8}$ in (35mm). Give it a good sand, so that the finished diameter is just smaller than $1\frac{3}{8}$ in (35mm). Then round off the end of the support column with the gouge.

14 Now for the rest of the lighthouse. I chose to use laminated ply again, because it is dimensionally stable so should work well with no movement. The downside is the potential grain tearout. Extra sanding, to avoid splinters, and an extra coat of undercoat should sort this out – well, it has so far for me. Mount the laminates to run lengthways on the spindle, like standard spindle-grain orientated wood. Turn a cylinder and form a spigot at one end to fit your chuck. Mount the piece in the chuck and drill a $1\frac{3}{8}$ in (35mm) hole to a comfortable depth: it must be deep enough to clear the next parting cut.



15 Bring up a revolving centre with a large enough head to fit and support the ply column in the hole drilled. Start shaping the rest of the lighthouse column. I used the bowl gouge for this. Remember, it should form a gentle, upsweeping curve. The tailstock end is the widest part now required, and the bottom of this part (D) should be the same diameter as the top of the lowest part of the lighthouse (C) cut in Step 3.



16 Stop short of the headstock end, which will be the top of the lighthouse. Prior to parting off, release the tailstock end and sand the inside and visible face. Then, measure the appropriate depth of the next required block, and part off this section. Note how the tailstock is in place while the initial parting cut is made. It is released to cut off the ring.



17 Repeat this phase for the rest of the lighthouse column (blocks E to I). Drill or turn the central hole deeper each time as you progress to the next block section. I almost forgot to sand this piece, so stopped the lathe and sanded it prior to cutting all the way through.



18 Keep working along the cylinder. When drilling, remember to remove the cutter often enough to remove debris and to make sure the cutter remains sharp. Otherwise, you can end up with burning – see the smoke here?



19 Note how the combination of a blunt bit, perhaps too high a speed of lathe rotation, and the bit not moving fast enough into the wood resulted in the inside being charred. A bit of sanding will remove this, but it should not happen in the first place. This is the last piece of the main column before we create the top of the lighthouse.



20 Now to create the top three parts of the lighthouse. The remaining piece of ply was deliberately left wider for this purpose. You need to create a collar, which represents a walking gallery; a faux glass area for the light; and, finally, a cap. You can drill or turn the central hole – it needs to be just deep enough to sit on the support column, but not too deep. Once cut, clean up the end and reduce the outer diameter to that required.



21 Stop the lathe, load up all the sections and check for fit. Everything needs to push together. You will need to sand the meeting faces of all the blocks. This is easily done with abrasive on a table or on a sanding disc, to ensure everything seats together properly.



22 To get the shape and form right, remove the pieces from the lathe and remount the base section with the support column in the chuck. Load up all the blocks and what will be the top of the lighthouse. Adjust the shape with the bowl gouge.





23 Once the lighthouse body shape is correct, use the corner of a skew in scraping mode to create a V-cut between every join. This will help with the look, and when painted the joins will look like real building block sections.

24 Use a combination of gouge, beading and parting tool, and thin parting tool to shape the top section.

25 You can see how the thin parting tool is used to make a plunge cut, creating the depth of the walking gallery area.

26 The faux glass area for the light is shaped with the gouge. You can see this area and the gallery clearly defined, while the top has a nice dome. The outer edge of this should be wider than the faux glass section. When you have finished shaping, sand the whole piece thoroughly until it is smooth and all parts look good and seat properly.

27 Use the thin parting tool to almost cut through the last remaining stub of ply near the tailstock. Stop the lathe and remove the lighthouse. Carve off the last stub of ply, and sand smooth. The final job is to prime and undercoat the whole piece, using two coats of undercoat before applying the gloss. I used red and white gloss for the main lighthouse; a silver pen to colour the light; and a white pen to create the diamonds of the glass. The base, plinth and gallery area were coated with black gloss. ●



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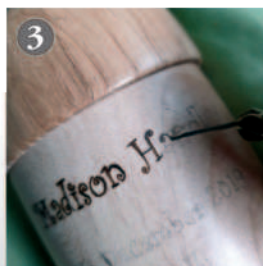
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Tazza with lid

John Hawkswell creates a piece inspired by a Venetian glass cup

Whenever I seek inspiration for a new project, I often find the answer in the shapes of classic glassware and ceramic artefacts. I have long been impressed by the design and delicacy of fine Venetian glassware and none more so than the glassware made using white or multicoloured threads of glass cunningly manipulated into the design (referred to as latticino work). I recently came across a tazza, or cup, in Venetian glass, made using this technique and thought I would see if I could at least replicate the shape in wood. It might not be as delicate as that 17th-century tazza but at least it doesn't have to stay in a locked display case as a condition of the insurance.

Design and choice of materials and working technique

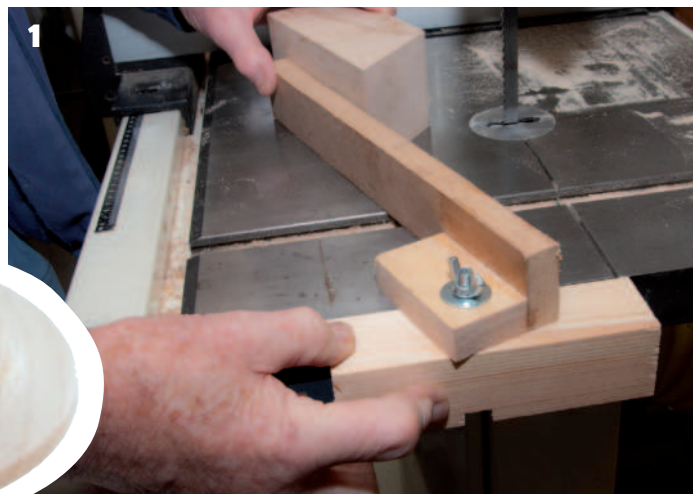
I opted to use commonly available and contrasting woods in a segmental project. As luck would have it, our woodturning club had a sale of wood recently and I acquired some nice pieces of sapele and sycamore.

The next decision was how many segments to use. I remembered the advice of an old woodturning guru and chose an odd number of segments, since this seems to be more satisfying to the eye.

While a good deal of preparation is required prior to turning segmental work, it does provide one significant advantage for the turner – namely the benefit of no end grain, provided that is, the segments are aligned in the right way. I started the project by producing a full-size drawing of the segments required. This helped ensure that the segments fitted together in a complete circle without gaps.

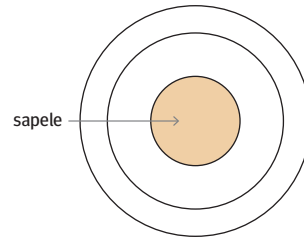
Preparing the blank

1 The segments need to be cut accurately. This is very difficult to achieve freehand and you may also discover, as I did, that the mitre fence supplied with the saw has an excessive amount of play. The homemade jig shown in the photo, which runs along the table edge cuts a consistent angle, which in this case needs to be 51.44°. A single bolt with wing nut provided all the adjustment required. The slot in the base of the wooden guide (by my right forefinger) holds the hexagonal bolt head captive. A plan of the seven segments required was used to check the accuracy of each piece.



PHOTOGRAPHY BY JOHN HAWKSWELL

Plans & equipment

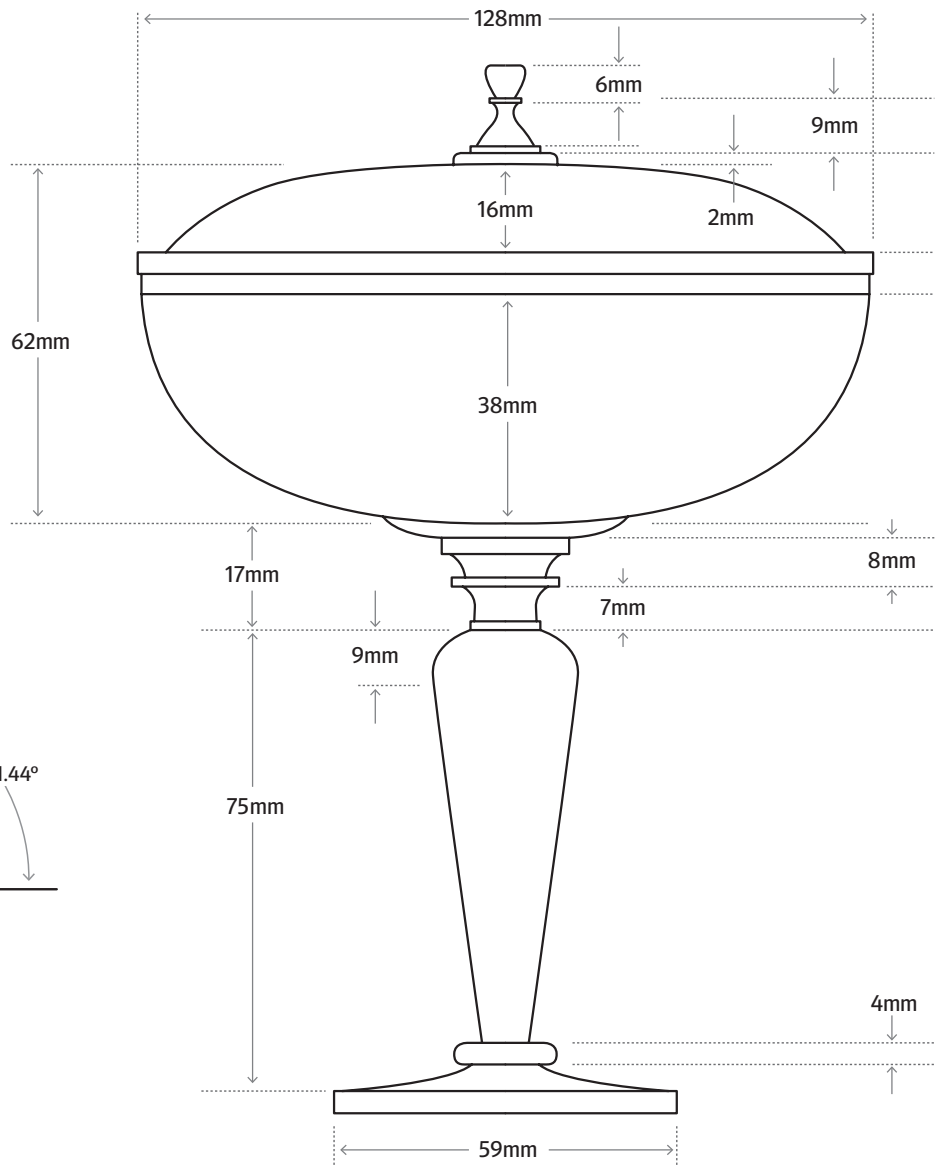
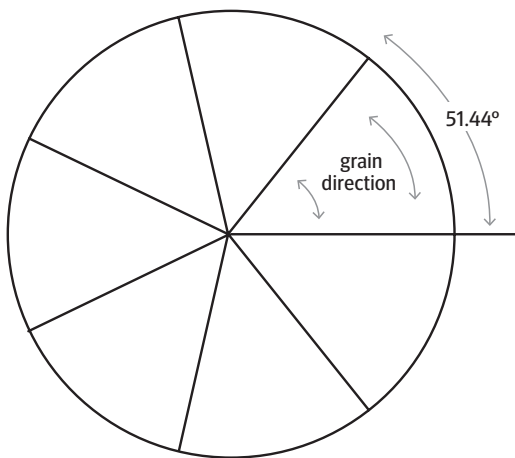


Tools & equipment

- PPE & RPE as appropriate
- Large rubber bands
- Cole jaws
- Homemade jig to cut the segments
- Spindle roughing gouge
- 6mm spindle gauge
- 13mm spindle gouge
- 10mm bowl gouge
- 13mm round skew
- 13mm continental gouge
- Beading and parting tool
- Narrow parting tool
- Diamond parting tool
- Vernier callipers

Timber used

- Sycamore spindle blank 75 x 75 x 600mm long
- Sapele spindle blank 150 x 150 x 60mm



2 In addition to the seven sycamore blanks, seven pieces of sapele were prepared. When it comes to assembly it is easier to glue up in two stages. The first stage is to glue a length of sapele to each piece of sycamore. Gorilla glue was used and this needs to be applied generously, especially as we are sticking end grain. A gloss paint roller was used to spread the glue evenly over both surfaces. They are clamped to ensure good adhesion.



3 After each section of sycamore has been bonded with a piece of sapele they can be glued together using some large rubber bands.



◀ The construction

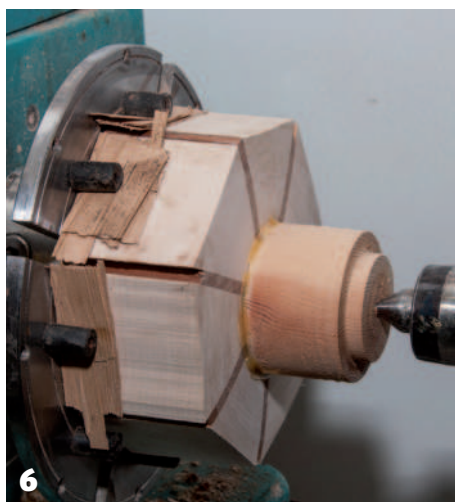
4 Once the glue is dry the blank can be mounted on the lathe. At this stage only one face is being trued up so Cole jaws can be used if available. Before turning, try to centre the blank as much as possible (hence the packing pieces shown in the photo)



5 Once the first face has been cleaned up it is time to drill a 25mm diameter hole in the centre to a depth of about 20mm.



6 We can now attach a sacrificial piece of softwood. Hot-melt glue is used to secure the softwood to the blank. Form a tenon at the other end that will fit the scroll chuck.



7 The work is now reversed and held in the scroll chuck. The tailstock is brought up for support as an extra precaution. Using a bowl gouge, the blank is made round and the second face is cleaned up. The centre is drilled on this second face in the same manner as Step 5.



8 Another sacrificial piece of softwood is employed for the second face and, as before, a tenon is formed to fit the scroll chuck. The blank is now divided between the section that will be used for the main body of the cup and that part which will form the lid. Although a parting tool could be used for this operation I prefer to use a saw, as I have found that with this method there is generally less drama and the waste is minimal.



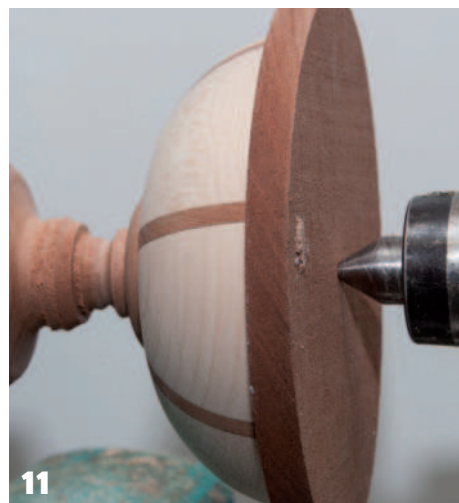
9 Start work on the main body of the vessel by forming the underside with a bowl gouge. This should be relatively straightforward due to the absence of end grain.



10 When you are happy with the underside of the cup, finish turning by taking a light skim with a negative rake scraper. This will deal with most of the tool marks prior to sanding. Once the underside of the vessel is sanded, we can commence work on the stem by forming a tenon to fit the hole drilled in the bottom of the tazza. Glue it in place and, once the glue is dry, make a tenon for the chuck to grip. Start to shape the stem. The stem is not fully formed at this stage because we want to leave plenty of support for the next stages.



11 Reverse the blank using the newly formed tenon and clean up the outer edge, then hollow out the vessel with a bowl gouge or a spindle gouge. When you are satisfied, sand ready for the finish to be applied. This is because once the rim has been fitted access near the inside edge of the vessel is restricted. With the bottom section of the tazza still in the lathe, glue a disc of matching sapele to the top edge.



Forming the rim and completing the bowl

12 Once the glue is dry, remove the centre of the disc with a parting tool and trim the edge to form a small recess to accommodate the lid. The circular waste can be saved for another project. The cup is now reversed and held in Cole jaws with tailstock support and the top of the stem is shaped and provided with an 8mm diameter tenon to fit the second section of the stem (see Step 17).

13 Leave the body section for the moment and mount the blank reserved for the lid on to the lathe. Start by turning the outside edge so that it will fit into the rim of the tazza. Now turn the outside surface and sand. Without pesky end grain to contend with you may be able to start with quite a fine grit, such as 240.

14 Leave the lid section in the chuck and remove from the lathe. Mount a spindle of sapele between centres. Turn a tenon to fit the recess in the lid and a half bead next to it. You may need to undercut this slightly to ensure there is no gap when the sapele is in position. Do not continue forming the finial at this stage because we need to maintain support for the next step. Glue the tenon in position on the lid. This piece of sapele was not wide enough to fit directly into the chuck, so a piece of sacrificial pine was used as a bridge between the scroll chuck and the sapele.

15 Inserting the sapele into the pine jam chuck allows the lid to be reversed in the scroll chuck so the inside of the lid can be shaped. The tool handle is held well down so light, controlled cuts can be taken. Then sand.

16 The lump of sapele on top of the lid can now be transformed into a finial. A piece of router mat is stuck to an MDF disc, and the tailstock is brought up to provide support. A 6mm spindle gouge is being used here to turn the fine detail.

17 To make the stem, first drill an 8mm diameter hole in the end of a suitable blank. Mount between centres, rough down to the approximate size and turn a bead near the base of the stem. Turn the body of the stem to the size required. A continental gouge with a shallow flute used here makes a great tool to turn a gentle taper.

18 Turn a 10mm diameter tenon below the bead. The photo shows the surface being refined with a skew chisel prior to sanding.

19 The base incorporates a central insert of sapele. As the base is quite thin it is best to drill the 10mm diameter central hole to take the stem before it is glued into the base as it is all too easy to go through the bottom. Don't ask me how I know.

Assembly

20 Glue up in two stages. First, glue the base to the stem and once that is dry glue the stem to the main body.



Finish

21 I experimented with different types of finish on some scrap pieces of wood and found that a hard wax finish, such as Osmo Polyx oil, best preserved the colour contrast between the two woods. ●

Kurt's clinic

Kurt Hertzog answers readers' questions

I have been turning for only a short time. I have been trying various woods to learn what I like. Are there woods that are your favourites? Why?

Over the years I have turned many different species. I try to pick the species specifically based on my planned result. That aside, I do have favourites that I like to turn. Where I live in Western NY, we are very near some of the finest cherry forests in the US. Not only is the Western Pennsylvania Cherry excellent but it is nearby. I find cherry an excellent wood for many of my turnings. It turns well, has a wonderful look and, depending on the application and UV exposure, it will take on marvellous patina over time. I am particularly fond of the pitch pockets that are often found in cherry – they add so much character. I try to use cherry when I can.

My other favourite wood is African blackwood. I use it almost exclusively for ornament finials. It turns well, holds excellent detail, sands to a mirror finish, and needs no additional finish. Unnoticed by many is the pretty grain and multitude of colours evident in African blackwood. Up close, it is a very well figured and multi-coloured wood.



PHOTOGRAPHY BY KURT HERTZOG

1 I'm a big fan of cherry. Available locally, it turns and finishes well. It often is attractively figured, interesting pitch pockets, and ages with a beautiful darkening patina **2** My go-to wood for finials, stands, and anything requiring crisp detail is African blackwood. Not only a great turning wood but it sands and finishes to a mirror requiring no added finish.

I saw your cover on WT381 which you guest edited. What a dramatic change from the normal covers. What prompted that and how did you get away with it?

Over the years, I've had a few covers from the various magazines I've written for. Most of the time, only I know it is my shot on the cover since it often shows my hands, turning chips, work in process, or the like. The guest editor covers have tended to be a headshot or candid of that guest editor in the shop making chips. I had a discussion with my editor to see if we might do something different. I had concocted several themes that were a departure from the norm. The one I really liked the best and which was ultimately selected with the 'Kilroy' concept looking through a few of my turnings. With no need to get my smiling face plastered all over the cover, it was a fun idea that I think lightens up things a bit. My next cover, *WT381*, wound up being a bit different but perhaps a bit less far out than I was trying for.



3 The selected cover for *WT374*. My creation along the lines of the age-old 'Kilroy' look that appears in unusual places **4** The *WT381* cover that illustrates my 'get outside and get some air'. When the weather cooperates, I roll the big Oneway out of the garage and on to the driveway **5** A shot that didn't make the cover but is the proverbial end of the dusty trail. Having a sit down and rest on a turning-outside afternoon **6** One of my favourites submitted for consideration. Some of my work being looked on by a photo of me looking out from the iPad **7** Another shot created for cover consideration. Me doing some one-on-one teaching in the shop. Just for chuckles I'm teaching a skeleton bought for Halloween decorations.

What is your take on the Zoom club meetings? They don't seem to be disappearing as quickly as I expected.

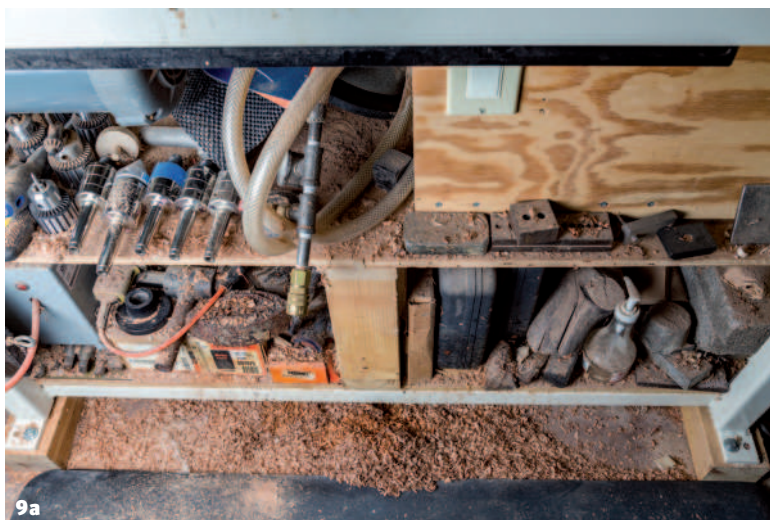
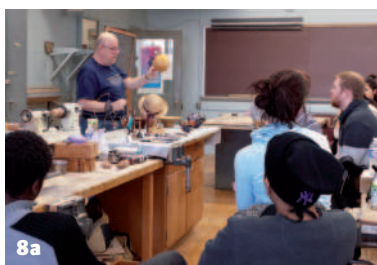
I accept that Zoom or other remote technology advances will continue impact face to face gatherings. Now that the virtual events are being done for convenience and cost rather than the prior lockdown reasons, I think we will enter a new meeting environment. I expect that we will morph into a hybrid model. We may see face-to-face events, totally virtual events, and a marriage of the two. The in-person events have their advantages of the social interactions, touching and feeling the various turnings, and direct feedback on instruction-type situations. The virtual events obviously are far more convenient and economical. Putting the two together provides the best of both worlds. Attendees get their enjoyment and benefits, as do those far away or unable to attend. Now you can have attendees and potential club members from far corners of the globe. You'll also have captured a version of the event for future reference or sharing. As I accept the inevitable, I still personally favour the getting-together events. Perhaps just because my first 25 years or so of woodturning were solely those types of club meeting, symposia, or other type of show.

I'm moving my lathe to the other side of the shop. My turning buddies are telling me that I should lag the lathe to the floor. I didn't do this originally and am torn about their advice. What do you recommend?

The fastening of your lathe to the floor is a controversial topic. Some say it should be anchored securely and that will prevent vibration. I'm of the opinion that lathes should be free of anchoring. If your work is causing the lathe to vibrate, I suggest that you take the time to adjust the speed up or down to find the correct rpm. Failing that, check for the best balance on the work and adjust as needed to put it in balance. Sometimes remounting or counterweights do the trick. I believe that lagging your lathe to the floor lets you turn with balance being way off. Using the floor of your shop as a huge weight sink seems to instill false security with a potentially unsafe condition. There is an extensive lathe setup article in my column in WT254 – Lathe Setup.

I need to ship wood to my buddies from my stockpile but am dismayed at the high cost of shipping. Any carriers, tricks, special rates, or other way to save a few bucks?

You think your wood is heavy? You should try shipping green wood. As you've noted, wood is usually heavy in the blank form. Since you seem to be shipping less than a pallet load, you are faced with the standard methods and the usual cast of shippers. You said 'bucks' so I'll assume you are in the US, only because I have little experience shipping anywhere else. The best value I have found is the flat rate USPS boxes. You can get the boxes for free at the post office. Once you pack it and seal it, don't deform it cramming in too much, the cost is the same regardless of the weight. I remember shipping a box of chucks for a class in Florida. If you have much more than will fit in their largest box, you are going to have to use the other carriers. UPS, Fedex, and perhaps others, but I avoid anyone but those two. Sorry that I don't have any real tricks. Ship only what you need, trim away any excess that will only get trimmed at the other end. Perhaps you can volunteer to hollow some of the turnings for your buddies. It will lighten the load.



8 Personally, I enjoy the in-person teaching and demonstrating. The interpersonal interactions between myself and the audience on hand is why I do any teaching or demonstrating **9** In my opinion, a lathe adjusted properly and weighted with ballast, tools, equipment, or material will stay put if properly loaded and used. Lagged only to the height adjustment woods **10** Some offcuts from a friend on the West Coast of the US. In one of the flat rate USPS boxes, anything fitting (up to 70#) into the 12 x 12 x 5³/₄in goes coast to coast in the US for \$22.

Community news

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

2023

Woodturning Connect
BIENNIAL EXHIBITION AND COMPETITIONS

THE TURNERS' COMPANY OF LONDON

**Call for entries to
Turners' Company Competitions 2023**

18th October | Judging day, and private view reception.
19th October | Public viewing and purchasing day.

Pewterers' Hall
Oat Lane,
London EC2V 7DE



Full details and online entry forms at
www.turnersco.com Closing date for entry
forms **Monday 18th September 2023.**

Many prizes to be won. Be seen by a London audience including curators from the V&A Museum. Try something new by merging pewter, leather or both into your piece.



#woodturningconnect
  

The Turners' Company | Saddler's House | 44 Gutter Lane | London EC2V 6BR
020 7236 3605 | clerk@turnersco.com | www.turnersco.com

Competitions

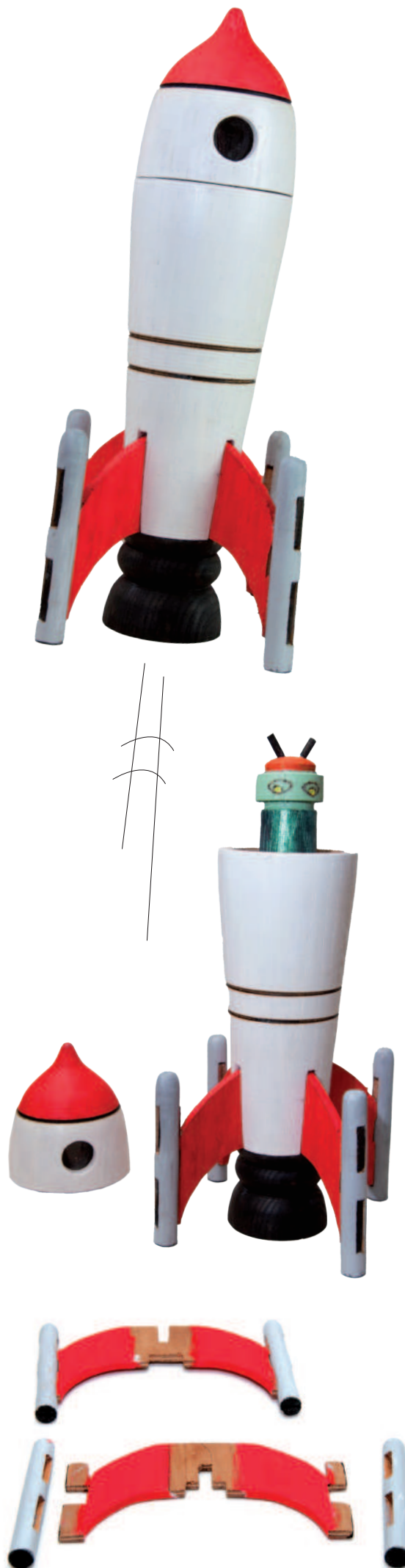
Call for entries

We have lift off!

I thought you might like to see a project I completed over the Christmas break. The rocket has a cabin with a perspex window. The cabin houses a light or an earthling or an alien life form as seen in the second photo. The nose cone is secured by means of a locating pin and earth magnet during 'flight'.

**Kind regards, John
Hawksell**





68

New Clarke woodturning lathes



Machine Mart’s range of expert woodworking equipment has been expanded with the addition of two new Clarke woodturning lathes

The two bench-top, variable speed models are ideal for woodturning in the DIY workshop. They are made of solid steel construction with a tough powder coated finish. Both models come with rubber feet for added stability and for use on bench tops.

The first model, the Clarke CWL435 370W woodturning lathe, has a 435mm distance between centres to allow for turning longer spindles. The 127mm height of centre from base also enables a large turning capacity of 254mm. This model has five turning speeds, ranging from 760rpm to 3200rpm, and has an 80mm faceplate diameter.

The bigger of the two models, the Clarke CWL460 550W woodturning lathe, offers a larger turning capacity than the CWL435 of 304mm, thanks to its 460mm distance between centres and 152mm height of centre from base. The CWL460 provides three speeds ranging from 650rpm up to 3800rpm and, unlike the CWL435, comes with a digital display for ease of use. Finally, this model is supplied with three Hex keys (3mm, 6mm, 8mm), a headstock spur, a tailstock cup centre and headstock locking.



	CWL435	CWL460
Distance Between Centres	435mm	460mm
Turning Capacity	254mm	304mm
Watts	370W	550W
Variable Speed	Yes	Yes
Number of Speeds	5 (760-3,200rpm)	3(650-3,800rpm)
Digital Display	No	Yes
Floor Stand	No	No
Weight	31kg	33kg

For more information go to <https://www.machinemart.co.uk>

CORRECTION TO WT381

In Matt Long’s article, issue 381, on page 88, step 8, a significant error appeared. A tool used in step 8 was described in the text as a ‘spindle roughing gouge’ instead of a ‘spindle gouge’. A spindle roughing gouge is not the correct tool for the technique described and should never be used in such a way. We apologise for this error and will ensure that it does not occur again.





AAW International Woodturning Symposium

Louisville, Kentucky – 1-4 June, 2023

Whether you are a new turner or a professional you will be challenged and inspired at the 2023 AAW International Symposium. Visit aawsymposium.org or call 877-595-9094 to register.

VENUE – Kentucky Exposition Center.

Home of the Kentucky State Fair, the venue is conveniently located near the interstate and airport. It's a great venue for AAW – lots of parking, RV camping available onsite, and the trade show and demonstration rooms all on the same level.

Kentucky Exposition Center
937 Phillips Lane, Louisville
KY 40209, US

The 2023 symposium is a family affair

- Bring the kids for high-quality woodturning instruction – at no extra charge. Children aged 10 and older have choices of 10 project rotations, ranging from brushes to yo-yos.
- Plan your all-star experience at the Louisville Slugger Museum & Factory with a guided factory tour and see Louisville Slugger bats made on lathes right in the factory.
- Don't forget the Derby. Churchill Downs offers unique experiences for all ages.
- For family fun just steps from the Expo Center, the Kentucky Kingdom offers theme park roller coasters and water park attractions. A fun outside adventure to add to your vacation.

New this year

- A hosted hospitality room for spouses and partners who come for the friendship rather than the demos. Bring a project to work on or just take it easy and make new friends.
- In the trade show, join the International Penturners and Midwest Penturners to turn a pen of your own.
- When space is available, join the Learn to Turn rotations in the Youth Room.

A virtual symposium

If you cannot join us in person, AAW will bring the Symposium to you. Select demonstrations will be broadcast to a live virtual audience during the event so that woodturners at home and around the world can be part of the action. Recordings will be available after the Symposium for virtual and in-person attendees for an extended period of 90 days. Registration for the virtual component of the Symposium will open in spring 2023. Visit woodturner.org to register and find the latest details.

Your first AAW symposium?

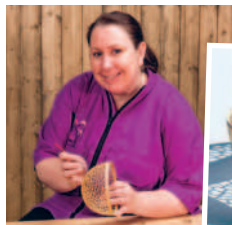
Don't worry, you'll fit right in. Symposium volunteers work hard to help you feel welcome and at home. Four of every 10 attendees are new to the Symposium and many have been turning wood for less than two years.



AAW volunteers 2022

PHOTOGRAPH BY ANDI WOLFE

Symposium demonstrators and their demonstrations



Helen Bailey, UK

- Pierced Thin-Wall Bowl
- Textured and Coloured Platter
- Three-Piece Natural-Edged Chalice
- Three-Legged Textured Pot



Jim Echter, New York

- 'Spindling' Your Way to Better Bowls
- The Sensational Skew!
- Turning Duplicates



Jason Breach, UK

- A Simple Box
- Orbital Arc – the Beginning
- Pagoda Box



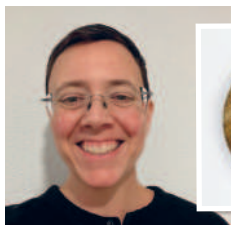
Roberto Ferrer, Illinois

- Embellishing Wall Sculptures and Conventional Turnings
- Turning and Carving Sculptural Wall Art



Pat Carroll, Ireland

- Square Box
- Beaded Trinket Box
- Brick Illusion
- Jo Sonja's Painting on Turned Items



Seri Robinson, Oregon

- Turning Spalted Wood
- The Science of Woodturning
- Spalting 101 (talk)



Lynne Hull, Washington State

- Adapting a Woodturning Lathe for Spinning Metal
- Spinning Aluminium, Copper, Brass, Pewter
- Brazing



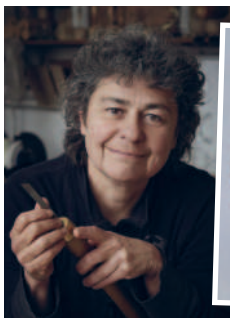
Phil Irons, UK

- Kintsugi for Wood



Kristin Levier, Idaho

- Introduction to Micromotor Power-Carving
- Adding Sculptural Elements to Your Turnings
- Bending Wood Without Steam: Introduction to Compressed Hardwood



Joss Naigeon, France

- Creative Lids
- Sphere and Lace
- Ukibori Technique
- Leftovers Are Treasures!
- Guardian Angel



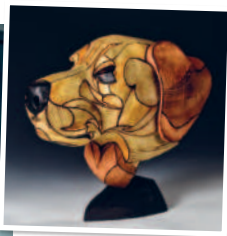
Jacques Vesery, Maine

- Concepts in Design and Form; Good Form over Pretty Wood
- How to Critique, Evolve, and Learn from Experience
- Textures for Colour Become Second Nature



Ulf Jansson, Sweden

- Designing the Pattern
- Tools, Sharpening and Materials
- Postprocessing
- Turning Thin Vessels
- The Tube Box



Derek Weidman, Pennsylvania

- Turn a Human Bust
- Lifespiral, a Love Story: When Chainsaw Meets a Lathe
- Turn Any Animal



Mauricio Kolenc, Uruguay

- The Ogee Curve
- Signature Salt Shaker
- The 'Magic Hammer'
- Mastering the Chaser



Laurent Niclot, Colorado

- Spiral Carving and Texturing
- The Sphere: Turning and Hollowing



Curt Theobald, Wyoming

- Look Closely: Elements of Design
- Beyond the Round
- Segmented Bowl Construction

2023 POP showcase artists

Each year the Professional Outreach Program (POP) showcases two wood artists at the AAW Annual Symposium. They are either experienced artists who have made significant contributions to the woodturning field but have not received appropriate recognition, or emerging artists who have the potential for making significant contributions to the field. The two artists each give two demonstrations, and their work is displayed prominently in the instant gallery.



Nicole MacDonald, Quebec, Canada

- Colour – Hues and Tints
- Unexpected Texture with Modelling Paste



Elizabeth Weber, Washington State

- Carving a Wave/Leaf Motif on to Your Turned Pieces
- Exploring Colours and Textures

Diary of a professional woodturner — part 23

Richard Findley talks us through some of his recent commissions

There was no diary last month as I took on the guest editor role for the second time. This gave me the chance to write a couple of different types of article and collaborate with another woodturner, which was something new and refreshing for me. I've often thought that a collaboration with another turner would be interesting to do but I'm not sure how my skill set can combine with the more artistic side of turning. I suppose much of my work is a collaboration

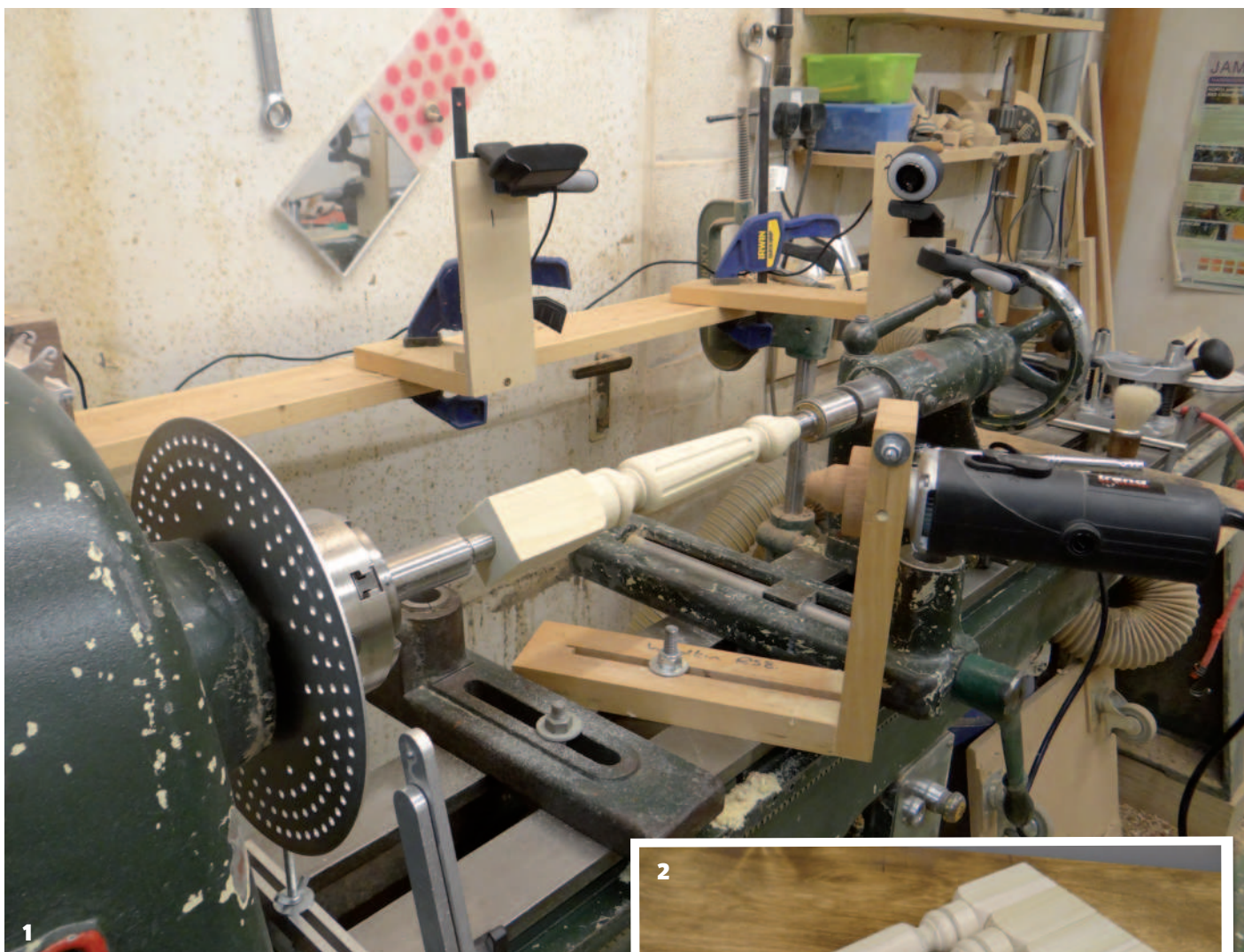
of sorts with other makers, but working with another turner is a little different. I hope you enjoyed the articles.

The break from the diary was helpful as many of my jobs in the early part of the year were either quite run-of-the-mill or repeat work that doesn't necessarily make for exciting reading, but there were just enough slightly 'different' jobs to make this diary interesting.

PDF NEWSPAPERS and
MAGAZINES:
WWW.XSAVA.XYZ



PHOTOS BY RICHARD FINDLEY



2



Woodturners Worldwide Symposium

February saw the third annual Woodturners Worldwide Online Symposium and I was invited to demonstrate again. Woodturners Worldwide is an online organisation that promotes the craft via social media. I know of it through Instagram and met Matt, the guy who runs it, when I demonstrated in Utah in 2018.

The first online symposium came about due to the pandemic and when the demonstrators were invited I wasn't quite ready with the appropriate tech to do a full demo. But I managed to produce a short recorded demo introducing the beading and parting tool, which I use daily but isn't that well known in the US. This was before I had my Signature version of the tool. I demonstrated at the second and was invited back for the third.

This year's demo was spindle turning with routed flutes. This is a variation of a demo I've been doing for years so I was very comfortable with the demo itself but I did have some nerves around the technology involved. I think most pre-demo nerves come from the possibility of things going wrong, but over the years, most things that can possibly go wrong in a demo have done so, from horrific traffic en route to the lathe breaking down, to forgetting a piece of equipment or having a piece of supplied equipment fail. Having dealt with all of this, it gives a certain level of confidence that I can deal with most eventualities, either through planning and organisation (leaving plenty of time for a journey or making lists and double and triple-checking that I have everything I need) to being able to blag my way out of a situation with woodturning chat.

- 1 The turned leg and camera set up from my demo for Woodturners Worldwide
- 2 The finished table leg with flutes and sample legs used during the demo

My nerves in the lead-up to the symposium came from the use of technology rather than the demo itself. Most IRDs are done via Zoom, which I and most turners offering IRDs are very familiar with. The Meet The Woodturner symposium in January was done using a slightly different format, but we had an in-depth meeting beforehand to go through it and, because it was pre-recorded and being beamed from the cloud, there was very little that could go wrong (at least if it did go wrong, it wouldn't be my fault!). This demo was to be live streamed using a variation of this technology and I had a video call with Matt the day before to familiarise myself with it, but with everything being live, there was a little more pressure for things to go right. I always feel that when technology is involved, there is always the chance that, even with all the good planning and blagging skills in the world, things can still go wrong and there's very little anyone can do about it. As it was, the streaming went without a hitch and the audience enjoyed my demo, giving some very kind feedback in the comments section.

“ ...how do I make a 60mm deep bowl from a 22mm thick piece of wood? ”

New demo

At this time of year, I am booked to do a demo for my local club and I like to try out something new. Last year I introduced my lidded bowl with finial demo, which I have been touring around the clubs and has been well received. I am always on the lookout for new demos that I can offer and this time my inspiration came from one of my editor's challenge articles. From that series, I have



3 The bowl from a board and the blank I used in the my new demo

several of the pieces around my home and one of my favourites is the bowl from a board that I made. This is not something I have ever seen demonstrated, so I thought it might be a good one to try. Having recently had my annual workshop deep-clean, I was very aware of what offcuts of wood I had in the timber stack, so glued up some strips of beech, oak and sapele that would otherwise sit around being too big to throw away, but ultimately useless as turning blanks. I made one in the workshop as a practice and felt confident enough that it should work as a demo. There's always that thought that when a topic isn't often seen being demonstrated, is it because it doesn't make for a good demo?

The most challenging thing about this demo is to clearly explain how I make a 60mm deep bowl from a 22mm thick piece of wood. The concept is very difficult to get your head around and I found that it is far easier to show how it works than to explain it. Because this bowl requires some glueing and drying time, I had to do a *Blue Peter* job and have some pre-prepared blanks, ready to turn. The demo went well and, although it needs a few slight tweaks before I take it to paying customers, I was happy with this first trial run of it.

Ball and socket

My workshop is part of a large building, divided up into smaller units. Each unit has a small, often one-man business running from it and the range of businesses never fails to surprise me. I had a guy knock on my door a few weeks ago and introduced himself as 'Tom from 10a'. He had not been in his unit for long and someone had told him about 'the woodturner in 13' who might be able to help him with a problem. Tom, it turns out, makes dragons. Not little model dragons but massive full-sized dragons (I'm assuming dragons are massive, but as mythical beasts I guess they could be any size?). These dragons (and other creatures) are used in stage productions and for shows and celebrations such as Chinese new year. They are operated by several people with a combination of long sticks and handles to make them move. Movement was

the focus of his current little problem, in that he wanted a joint, or several joints, to move in more than one direction and he'd come up with a ball and socket joint to do this but his efforts, although proof of concept, weren't quite up to the quality he wanted. He had a sketch of what he needed and wondered if I could help. Essentially it was a ball around 60mm in diameter, hollowed to accept a pipe in one end and with a hole and a tapered opening

on the other side to allow a bungee cord to pass through and give the socket its range of movement. After some discussion I suggested that it would be cheaper for him to buy pre-turned spheres as these are available online for less than I can buy the wood and I could just adapt them to suit his needs.

The balls came a couple of weeks later and he dropped them round with his sketch and a sample of the pipe he needed them to fit. The balls were poorly made but would suit the job at hand. They were pre-drilled through the centre with an 8mm hole, which is ideal for my screw chuck. Initially my idea was to mount them on the screw chuck and drill the hole for the pipe but it quickly became clear this wasn't going to work because an 11½ in Forstner bit is quite aggressive and, despite my careful



4 Turning the inside of the balls

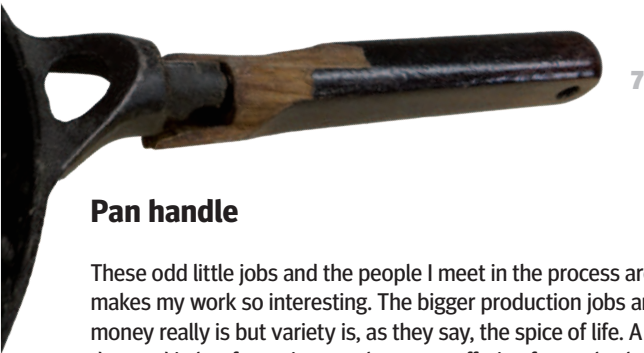
5 The finished balls

attempt at drilling, quickly stripped the thread and made the ball spin. Plan B was to simply turn the recess to fit the pipe, which was far more successful. With the ten spheres hollowed, I was able to mount them on my small chuck jaws by the recess to drill the hole and taper the other side.

With a bag of balls and an invoice I called into Tom's unit to see one of his dragons. He was pleased with my work and showed me the beast he was currently working on. I find it fascinating that such niche businesses exist. Woodturning is a niche business, but this takes the word to an entirely new level of niche-ness. He uses various lightweight materials to construct the creatures and fantastic paint effects to create scales and texture on the surface. When I called in, he had just been building a fitting using red bicycle lights to make its eyes glow. The photo shows the head of the beast he was working on. You can see more of Tom's work at www.mrcleaversmonsters.com



6 The dragon head Tom is currently working on



Pan handle

These odd little jobs and the people I meet in the process are part of what makes my work so interesting. The bigger production jobs are where the money really is but variety is, as they say, the spice of life. A customer dropped in her favourite pan that was suffering from a broken handle and wondered if I might be able to fix it. The handle was a simple shape but it was immediately clear to me that it would need more than just turning. Of course, I said I could do it and she left the heavy cast iron pan with me.

The old handle detached easily with a long Allen head bolt running through its centre. The new handle was to be the same as the original but in oak. Essentially it was a simple cylinder, drilled and counter-bored for the bolt, but the sides had flats machined into them, making the sides of the handle narrower than the cylinder profile, tapering to a full cylinder before coming into contact with the pan.



7 The pan with the original damaged handle
8 Using the planer to shape the sides of the handle
9 Turning the handle **10** Refining the handle on the sander **11** The pan with its new handle

There were a couple of ways I could form the flat sections on each side. I guess the original would have been done on a spindle moulder, which I don't have, but I do have a router mounted under a table and a good cutter with skewed blades that produces a very clean shear cut.

It was clear I would need to leave the piece of wood considerably longer than I actually need to keep my fingers away from the cutter. I planed it square and drilled the required holes and was then ready to shape the sides. I set up my fence on the router and after the first cut it became clear that this wouldn't be the best way to do it. I use a simple piece of wood, clamped on to the router table to form a straight fence. The problem was that, because the cutter removed wood from the blank, there was a gap between the work and the out-feed side of the fence. If the work twisted, the cutter could dig in and either spoil the work or, at worst, grab it and throw it across the workshop. I needed a Plan B.

Plan B was to use my planer. Technically, this might be bending some of the safe usage guidelines but as I ran the idea through my head, I couldn't see any real problems with it. In a large organisation it would be at this point that I would have to fill in reams of risk assessment forms. In the reality of a small business, I do the equivalent but in my head, running through all possible outcomes and potential pitfalls. As it was, my planned operation would allow the correct guarding to be in place and, because of how the machine works, the in-feed and out-feed tables would support the work at all times, with the fence keeping it square to the cutter. The only real hazard is that I would fix a stop to the fence so the cutter block would form the tapered shoulder in the correct place. Normally the work should pass right through the cutter block, continually moving forward in a smooth motion – my plan was to push it to the stop and then lift it up, away from the cutter block. This should be safe because of the length of the wood, keeping my fingers well away from the sharp knives. I could adjust the depth of the cut incrementally, creeping up on the final size so never taking too big a cut and achieving a clean surface. The only risk is at the point of stopping, I must ensure I don't pull the wood back toward me because then the cutter could grab the wood and throw it back at me.

I set the stop, using a clamp to hold a piece of wood to the fence of the planer, and took my first tentative cut. The wood touched the stop and I lifted the wood up, keeping it tight against the fence, and removed it from the machine bed. It went well and I felt comfortable at all times. I gradually dropped the in-feed table a millimetre at a time until I reached the desired size and I was very pleased with the shaping on the handle.

The next stage was to mount it on the lathe and turn the cylinder. Turning doesn't get much more simple than this. The handle was held between centres using the holes drilled earlier and I used a spindle roughing gouge and my Signature tool to take a final planing cut and to form the rounded end of the handle before lightly sanding to 320.

There was a tiny amount of tear-out on the curve of the shoulder, but this was to be expected as the cutter block was working against the grain here. I set up my belt sander in the jig, which transforms it into an edge sander, and used it to refine the curve and further smooth the flats of the handle. Four coats of my favourite hardwax oil later and the pan had a new handle ready for more years of use.



◀ Side tables

I was asked by a cabinetmaker who follows me on Instagram to make a pair of turned oak side tables for him. He sent me a drawing and it was immediately clear that these were small side tables but large turnings. Standing 490mm high and 310mm in diameter, they would fit on my lathe, just, but not in my press, so from the outset I told him that he would need to supply the blanks because my policy is to only do glue-ups that fit in my press as I know I can achieve excellent results that way. He was happy to do this so my job was just the turning.

He dropped off two large cuboids of laminated oak. Chunks this big are heavy but just about manageable. My first job was to take the corners off on the saw. The tilting blade on my saw bench makes this easy to do and quickly reduces the weight and bulk, making them a little more easy to handle. I decided to hold them between centres, using a four-prong drive and live ring centre. The blanks were over-long so allowed for some waste for the drive centres.

The blanks spun over the bed at a slow speed but there wasn't space for the banjo to fit between the work and the bed until they were fully cylindrical. Once they were fully turned and in balance I could slowly increase the speed and turn them to shape. They were

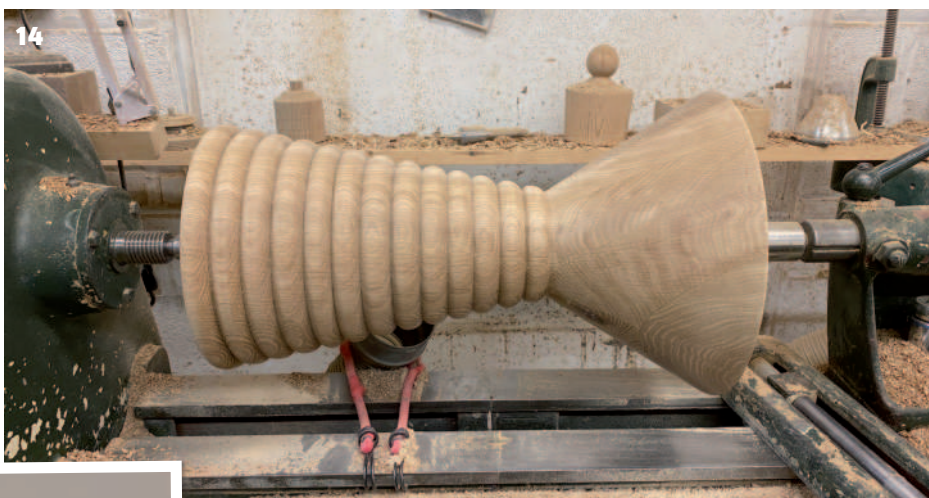


12



13

12 One of the large chunks of laminated oak with the corners removed **13** There was little space between the bed and the wood until they were turned to a cylinder **14** The beaded table on the lathe



14



15

roughly diabolo shaped, with the centre slightly higher than halfway. One was plain and the other had turned beads along the stem, which I think I preferred, although both looked good. I sent some pictures over for approval and once he confirmed that he was happy with them I turned the remaining drive areas down as small as I felt comfortable before sawing them off and sanding the tops flat with my belt and orbital sanders. The undersides were cut slightly hollow so they would sit flat, and sanded smooth. These were made as samples for my customer's online shop and he is hoping to collect some orders for them, so hopefully I'll be making more in the future.



16

15 The tables before the drive areas were cleaned off **16** The finished beaded table

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by gallery owner Larisa Safaryan and has become a major event in the wood art world by presenting to the public the finest selection of contemporary wood art from around the world. We take a look at some of the finest pieces here.

For more information about the exhibition and the Wood Symphony Gallery, visit: www.woodsymphony.com



1 Untitled in assamela, by Satoshi Fujinuma **2** Iris Vase in maple with lightfast trans tint dyes, by Jodi Clark
3 Burgundy Twist in white oak, by Andy DiPietro

PHOTOGRAPHS COURTESY OF WOOD SYMPHONY GALLERY

4



6



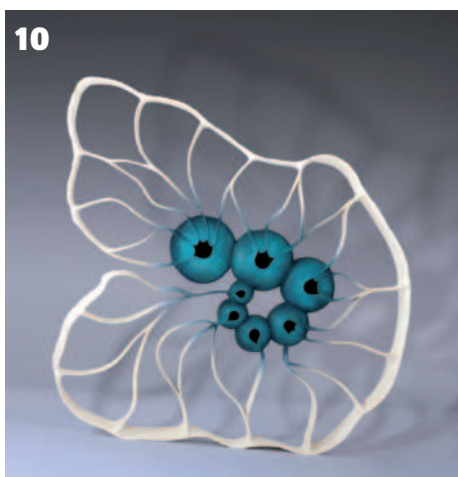
5



7



4 Easing Along in sourwood with milk paint and pyrography, by Holland Van Gores **5** Form and Content in claro walnut, by Nairi Safaryan
6 River of Daydreams in cherry with steel hanging brackets, by Dave Bowers **7** Murmuration of Stars in buckeye burl, by Mike and Georgianne Jackofsky



8 Rising of the Sphere in basswood with lacquer, by Tom Eckert **9** Peaking Twist in birch with egg-oil-tempera and oil, by Ulf Jansson **10** Musique des Sphères in hackberry with acrylic paint, colour pencils and pigments, by Alain Mailland **11** Yew Bowl, by Angus Clyne **12** Foyer in yew, by Renaud Robin

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Ferment masher

Kevin Alviti turns another useful kitchen implement

Fermented food is in fashion at the moment, and for good reason – it tastes amazing. Gone are the days of thinking sauerkraut is something to be endured on a holiday in Europe, now there are so many different types of fermented food to try it's easy to find one you like. It's also filled with goodness and is great for our gut health.



PHOTOGRAPHS BY KEVIN ALVITI

Fermented food isn't a new thing, it's been around for thousands of years (estimated to be 6000BC) and was a great way for our ancestors to preserve food and calories, from times of plenty to leaner periods. It also had taste and health benefits.

We have a smallholding here and grow as much of our own produce as possible. This means we're left with the inevitable glut of certain crops. We preserve in many different ways – dehydrating, canning and freezing are some of the main ones – but fermenting seems to add another level to some foods.

We ferment different things, like crunchy carrot sticks that are just fermented in a brine,

but when we make our beetroot, carrot and red cabbage sauerkraut, lifted with a bit of ginger and garlic, it's unlike any you've ever experienced. I'm also a little bit addicted to kimchi and have a five-litre fermentation crock which I use to make half a dozen jars at a time.

It can be a little labour-intensive though, as some things are a bit more involved than others, and although I have the benefit of my children's labour it can be hard to mash or beat it all up enough as is required with some recipes with some ferments. For a while I've been using the end of a rolling pin, but I have decided it's time to make a proper masher as the rounded bottom just won't get into the edges.

The making

1 Dimension the blank to size. I started with a blank of beech 50 x 50mm and just cut it down to 350mm on the mitre saw. I then marked the centres.

2 Mount the piece on the lathe – I used my four-prong drive centre and a standard rotating tailstock drive. Tighten it up. (You can see here a picture of my workshop where I'm lucky enough to have some natural light behind the lathe. I have added mesh to the window after too many near misses.)

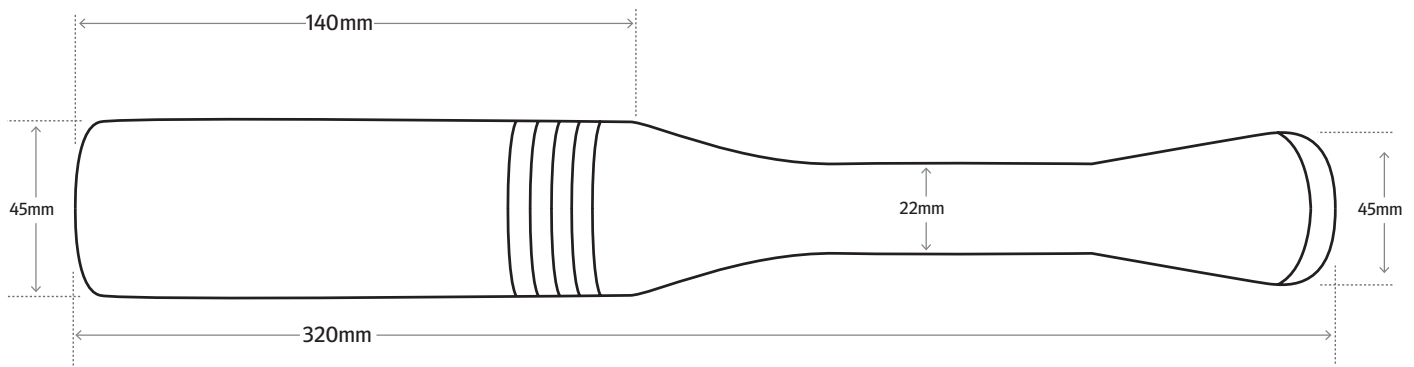
Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- Lathe
- Spindle roughing gouge
- Skew chisel
- Spindle gouge
- Parting tool
- Narrow parting tool
- Sandpaper

Materials

Whatever wood you use for this project make sure it's food safe. I chose beech as it's very hard and not very absorbent, but there are plenty of other woods that would be ideal for this – fruit wood or hawthorn for example.



3 Use the spindle roughing gouge to turn the blank so it is round. I love this part of hogging off the waste and creating some shavings. Remember to work off the ends of the blank. When you get to the other end, reverse the tool to work off that end.

4 I then run the skew over it to leave it a smooth cylinder. Stop the lathe and check the wood is sound and free from defects as the bottom section wants to be as smooth as possible to aid cleaning when in use.



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5 Mark up the blank at the points where there will be changes in diameter. I used a parting tool in my dominant hand and a gauge in the other to reduce down the middle of the handle. This gave me a depth to work to and get to easily.

6 I then used a combination of the skew and a spindle gouge to form the convex shape of the handle, always working with the grain, from both sides down into the middle.

7 Shape the handle end of the masher with either the spindle gouge or a skew chisel. If using the spindle gouge, remember to keep the cutting edge in contact and follow the curve around as smoothly as possible. Practising on simple things like this reduces the risks of catches.



8 Add a little detail with some grooves. Cut these with the tip of the skew chisel. Approach at about 60° to your workpiece and let the tip of the tool just engage, then lift the handle to cut deeper. Move this across and cut all one side of the grooves. Then approach from the other side and do the same. This cuts the grooves nice and evenly.

9 Work up through the grits of sandpaper – It is worth going up to around 600 grit. Stop at every step and hand sand with the grain to make sure you've removed all the scratches of the previous grit. Change your sandpaper regularly to make sure it is cutting well.



10 I then used some of the beech shavings that had come off the project and burnished the piece with them, holding a handful in my hand and pressing it into the rotating work piece. It brings up a great shine.

11 Using a narrow parting tool, reduce both ends as much as you dare then part from the lathe – use a strong, one-handed grip and catch with the other. Make sure not to part off tight up to the workpiece as it can tear out the end grain, which would wreck the piece.



12 Finish both ends to the same grit as everything else then treat with a few coats of your chosen finish. I have been using pure tung oil for my kitchen items lately as it seems to leave a good finish and is completely food safe. ●

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What a scorcher!

Les Symonds turns a pair of hefty candlestands with scorched oak columns

I have pitched this project such that it is suitable for relative novice turners and should provide a finished item rather different to those most novice turners tackle. If you don't feel up to making a pair of well-matched candlestands, just make a single one, which will be sufficient for most modern homes. You can always have a go at making a second, matching candlestand when your skills improve.

There is enough information in Steps 5-10 for anyone who hasn't scorched timber to safely have a go, but if you want further information this process was covered in depth in issues 320 and 321 of this magazine. If you wish to learn more about scorching in general, simply search the internet for terms such as 'shou sugi ban', which is a traditional Japanese process of controlled burning for decorative and even for preservative results. Also, if you've not scorched timber before, work on a scrap piece first to get a feel for the process before you start scorching your finished columns.

Please note it is most important that any form of candlestand, candlestick or even tealight holder should have a suitable interface between the candle and the timber to avoid accidental scorching of the timber. In this project, a UK-manufactured, spiked candle dish has been used and dimensions on the drawings are based on this, therefore you might need to make adjustments for the type of interface that you choose to use.



PHOTOGRAPHY BY LES SYMONDS

SHOU SUGI BAN

Shou sugi ban was originally the Japanese process of scorching structural timbers and timber cladding for buildings. The process provides a surface which is rendered safe against fungal and insect attack, although in more recent years it has become popular as a decorative effect. When suitably applied to open-grained timbers from lands with a temperate climate, such as ash and oak, the surface of the softer summer growth is burnt and brushed away somewhat more readily than that of the narrower bands of winter growth. Thus, the grain pattern becomes both visually apparent and highly tactile.



A selection of scorched pots by the author

Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- Screw-chuck with 10mm machined-thread screw
- Chuck with 35mm and 70mm jaws
- Bowl gouge
- Spindle gouge
- Skew chisel
- Parting tool
- Blow torch
- Wire brush
- Paper towel
- 6mm beading tool
- Steel rules/calipers

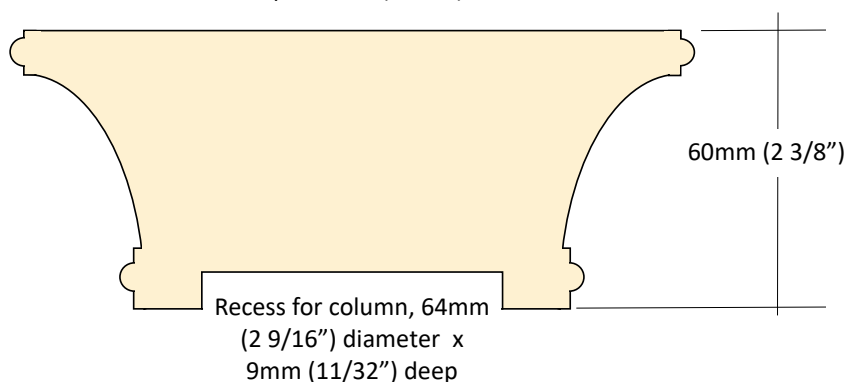
Materials

- Columns 2 @ 260 x 70 x 70mm oak
- Bases 2 @ 200 x 200 x 70mm beech
- Tops 2 @ 150 x 150 x 70mm beech
- Abrasives
- Cellulose sanding sealer
- Microcrystalline wax
- Lime wax & applicator pad (Nylon pad)
- Two-part epoxy adhesive
- 4 No. 70 x 4 brass or nickel-plated screws

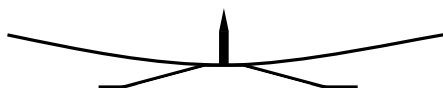
Overall diameters...

Base 175mm (7")

Top 140mm (5 5/8")



Scorched and lime-waxed oak column,
250mm (10") x 64mm (2 9/16") diameter, square ends.



Cross-section through candle-dish used
(As supplied by www.candlecavern.co.uk)

The making

1 Set one of the blanks for the columns between centres and reduce it to a cylinder of 65mm diameter, then refine its surface with a skew chisel down to 64mm diameter. Abrading should not be necessary, but if you feel you need to it is important that you do not create surface scratches running across the grain, as these can show through the scorched surface.

2 Using either a skew chisel or a parting tool, square off the end nearest to the tailstock, working as close to the live centre as you can. Once assembled, neither end of the column will be visible, so you don't have to work unduly to achieve a good finish on the end grain, but it is important that the end is either flat or slightly hollow/concave – it must not bulge outwards.

3 Remove from the lathe, turn around so that the other end can be worked on. This will work best if you have a steb-type drive in the headstock, otherwise you will need to take great care to properly centre the headstock end of the workpiece. Mark a pencil line around the workpiece, 250mm along from the headstock end.

4 As in Step 2, again using either a skew chisel or parting tool, square off the end, cutting as close to the live centre as possible. Repeat Steps 1-4 for the second column.



5 Remove from the lathe and set up a safe place in which you can carry out the scorching process. I regularly use something like a pair of paving stones in my garden, one lying flat and the other placed upright behind it to act as a screen. Note that scorching timber on the lathe or even just in the workshop, where there is inevitably wood dust present, is not to be recommended. Using a gas torch such as plumber's or even a chef's brul e torch, scorch the wood slowly and evenly, working along the lines of the grain where possible.



6 Carefully examine the surface of the columns. What you need to achieve is an equal depth of burn throughout by working until you begin to see a dark silver/grey surface which starts to reflect light. If this is not uniform, continue scorching until it is. If you proceed somewhat further with the scorching, you will notice a chequered pattern on the surface; this is fine as long as you scorch down to this texture throughout the whole of the two columns.



7 Allow to cool down thoroughly (otherwise the lime wax can melt excessively and form a grey sludge on the surface). Set one of the columns on the lathe and gently brush away as much of the loose soot and carbon as you can. Work along the pattern of the grain and use dust extraction if you have it. Wear a suitable face mask (see Health & Safety panel).



8 After wire-brushing, rub the surface vigorously with paper towel to continue to remove the remaining soot, then use a nylon web pad or an old toothbrush to rub lime wax into the grain. Take care to penetrate all open pores – these will show through as black flecks if you have not flooded the surface with sufficient wax.



9 Use paper towel to remove as much of the excess lime wax as possible. Your aim should be to make the scorched surface visible again, with the lime wax visible in the open pores and cracks on the surface. At this point there is still likely to be a lot of excess lime wax on the columns.



10 Start up the lathe at about 1000rpm and again use paper towel to thoroughly clean the surface of all excess lime wax. This will result in not only a tactile grain texture, but also a highly visible grain pattern. Repeat for the second column and set aside for now.



11 Set a blank for one of the column-tops on to a suitable screw chuck, having taken care to drill a pilot hole for the screw only a millimetre or two deeper than the screw itself – it is essential that you do not drill this hole any deeper. Skim its outer edge down to 140mm diameter, clean off the face adjacent to the tailstock and then mark two pencil rings on that surface, at diameters to suit your candle cups. Note that the inner ring will be used not only to house the foot of the candle cup, but also as a recess for your chuck jaws at a later stage.



12 Use a parting tool to plunge-cut a groove just inside the inner pencil ring – it will prove necessary to also make a second plunge-cut, opening up the width of the groove to prevent the parting tool binding in the cut. Remove all the excess material from the recess such that it becomes flat bottomed. The overall depth of this recess will be that which suits your candle cup.

13 As in the previous step, plunge-cut a groove just inside the outer pencil ring and remove all the waste from this recess. Start to form a shape in the recess that the cup will settle into without rocking.

14 Try the candle cup for a fit into it. Adjust as necessary and make the two recesses an easy fit for the candle cup. If you make this a tight fit and there is any subsequent shrinkage in the timber, the cups could distort or pop out of the timber. It is essential that the cups sit well without any rocking. Abrade the remainder of this surface in preparation for applying your chosen finish.

15 Use a 6mm beading tool to cut a bead with a 4mm shoulder on the outer edge of the workpiece. As you will be cutting across the grain with a tool, which will essentially be scraping a bead into shape, it is important that the tool is freshly honed for each bead and that you progress slowly and gently, otherwise tear-out will be inevitable.

16 Use a freshly sharpened parting tool to reduce the diameter of a shoulder to either side of the bead. Cut to such a depth that the tiny grooves previously cut by the spurs of the beading tool are still visible as you will need these two grooves for a later step in which they are scorched to highlight them.

17 Remove from the screw chuck and place the workpiece back on to a chuck, using a set of jaws which fit into the deeper of the two recesses formerly made so that the underside of the workpiece can be worked on. Skim the surface facing the tailstock off such that the workpiece is now 60mm thick, drill a central 4mm hole as a clearance hole for a screw which will eventually be used to fix the workpiece down on to the column, and then mark two pencil rings on it, one at 64mm diameter and one at 94mm diameter.

18 Working just inside the inner pencil ring, form a flat-bottomed recess that the top of one of the columns fits comfortably into. Note that the scorching process can reduce the diameter of the columns slightly, so use all measurements given here as a guide only. When the column fits well, make an identifying mark on it and in the recess (I used the letters A, B, C and D) to ensure that you keep to the same combination of parts.





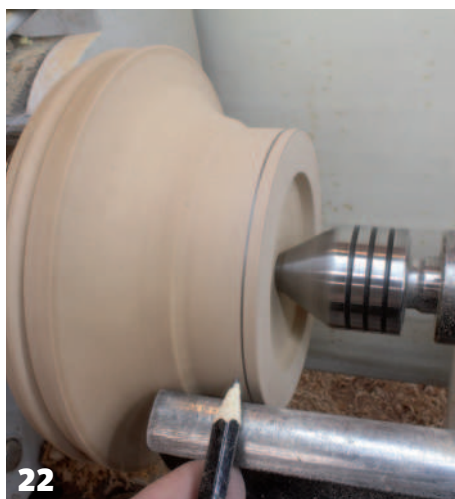
19 On the edge of the workpiece, at the right-hand corner, make a deep cut with a parting tool, down to within a millimetre of the outer of the two pencil rings



20 Note the bead previously cut in Step 15... With a bowl gouge or large spindle gouge, cut away the bulk of the waste wood from several millimetres to the right of the bead, down to the level of the cut made in the previous step, thus beginning to form the large, sweeping concave shape under the head of the candle-stand (see drawings). At this stage you will just be roughing-out the shape to make room to cut the second bead, not cutting the shape to its finished dimensions.



21 Use a sharp bowl gouge or spindle gouge to refine the surface at the bottom of the cut made in Step 19, forming a flat surface, about 20mm wide, on which to cut the second bead.



22 Mark a pencil ring on the surface just cut, 4mm in from the end of the workpiece.



23 Cut the bead at this position, noting the text in Step 15 – it is definitely worth honing the bead tool before each subsequent bead is cut.



24 Mark a pencil ring 4mm to the left of the bead.



25 With a freshly sharpened parting tool, cut a shallow groove immediately to the left of the pencil ring, to a depth of 4mm. Proceed slowly with the tool handle low down to create a shearing cut rather than a scrape.



26 Mark a pencil ring 4mm to the right of the bead at the headstock end of the workpiece.



27 Now refine the concave curve between the two beads. As this is quite a large, open curve, a bowl gouge works well but you will probably need a spindle gouge to cut right into the corner adjacent to the second bead detail.

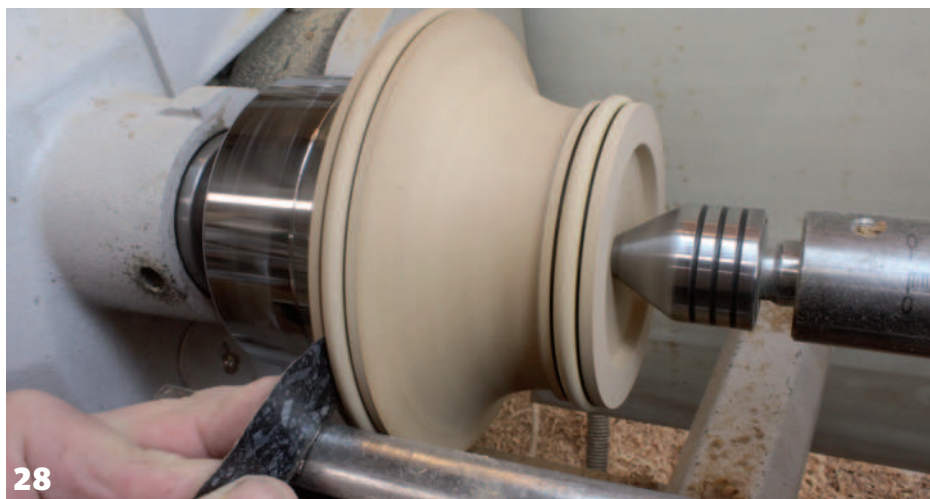
28 Use a piece of plastic laminate or other suitable material to create fine scorch lines, one either side of each bead, using the tiny grooves created by the spurs of the bead tool to set the plastic laminate into. Burn all four lines to an equal depth/colour. Abrade the whole surface down to 400 grit and apply cellulose sanding sealer. Repeat Steps 11-28 for the second column top.

29 Set a workpiece for a base on to a screw chuck (refer to notes in Step 11 regarding the depth of pilot holes). Skim its outer edge down to 175mm diameter then skim off the surface facing the tailstock before cutting a 6mm-deep groove with a parting tool, 20mm in from the outer edge.

30 From the groove just cut, hollow out a recess of equal depth, right through to the centre of the surface.

31 At the centre of that recess, cut a further recess to fit your chuck jaws.

32 Repeat Steps 15-28 to create the column base, noting the dimensions stated in the drawings, and when complete, reverse-turn the workpiece, using the recess for the bottom end of the column as a chuck recess. Clean up the underside, removing all traces of the chuck recess. Assembly is simply a matter of screwing through the bases and tops, into the columns, and gluing the candle cups into place with two part epoxy adhesive. Finally, apply a suitable wax (such as microcrystalline wax) over the whole surface. ●



HEALTH & SAFETY

While this project involves only fairly basic tool techniques, the scorching process clearly needs careful consideration before you start.

Essentially, you must have somewhere safe to do the scorching and we recommend that you work outdoors in a sheltered place, with such extra precautions as having a fire blanket and a bucket of water at the ready. The use of paper towels has been mentioned a few times for cleaning up the excessive lime wax, and this is an important point to note – never use woven cloth when working on the lathe and, just as when you are abrading on the lathe, always move the toolrest out of the way.

When wire brushing the excess soot away, a suitable face mask must be worn. In the UK this would be an FFP3 type, but check to see what types are relevant if you are not UK-based.

The Oak Fabrykant

This historic Polish oak was voted European Tree of the Year 2023

The Oak Fabrykant, a 180-year-old tree in Łódź, Poland, was announced as the European Tree of the Year in March after winning the public vote. The Dragon Oak in Slovakia finished in second place and the Apple Tree Colony in Ukraine was third. The UK's entry, the Waverley Abbey Yew tree (inset, right), was seventh.

The king of oaks in a sea of flowers (1)

The beautiful Oak Fabrykant is one of the most distinctive trees in Poland, and is seen by local people as a symbol of longevity and wisdom. Its unique shape attracts visitors to the Klepacz park in Łódź where it grows. One of its branches is s-shaped and is over 20m long. Its canopy reaches an impressive 33m. In the spring, visitors to the park can admire meadows of blue flowers around the oak.

Przemysław Bartos, who first nominated the tree for the contest said: 'I am very happy that Fabrykant won the title of Tree of the Year. It shows that respect and admiration for nature have no limits ... Fabrykant is a majestic tree that became a symbol of unity, fight for the environment and friendship of people from different parts of Poland and the world.'

The Dragon Oak (2)

The Dragon Oak, a 700-year-old tree in Bratislava, Slovakia, took second place in the contest. The tree is situated in a forest by the village of Lozorno and takes its name from its resemblance to a seated dragon. Although its bark is rough

and scarred, the Dragon Oak makes everyone feel safe around it. Hidden in the forest, it has protected the locals for centuries. Logging is currently taking place in its vicinity but, hopefully, the Dragon Oak will be saved for future generations as well.

The Apple Tree Colony (3)

The Apple Tree Colony in Krolevets, Ukraine, was voted into third place. The tree is over 220 years old and covers an area of 0.1ha. The tree lost its main trunk a long time ago but there are now 15 smaller trunks that make up the colony. This ability to re-root itself when one trunk dies has led the tree to be seen as a symbol of Ukrainian indomitability.

About the competition

The European Tree of the Year is a contest that highlights the significance of trees in the natural and cultural heritage of Europe and the importance of the ecosystem services trees provide. The contest is not looking for the most beautiful tree, but for a tree with a story, a tree rooted in the lives and work of the people and the community that surround it.

www.treeoftheyear.org



3

APPLE TREE... PHOTOGRAPH BY SHUTTERSTOCK.COM | (TOP) YEW... BABELSTONE - WIKIMEDIA - CREATIVE COMMONS



Reproduction antique stethoscopes

Mike Stafford researches the designs of historic stethoscopes and recreates two popular styles

Inspiration for a turning project can come from some of the most unlikely places. All turners find inspiration at symposia, watching demonstrations and by touring the instant gallery. Club show-and-tell presentations often inspire us to try different things. And, of course, websites offering turning discussions and pictures provide many ideas. YouTube is filled with hundreds of turning videos.

Sometimes inspiration can come from the vast electronic wasteland we call television. I was watching the Travel Channel and happened upon a show entitled *Mysteries at the Museum*, which has become a favourite in our house. In one episode the 'mystery' at the museum was a small wooden cylinder with a hole down the centre. This wooden cylinder was the first stethoscope, created by French physician René Laennec. Laennec's stethoscope was essentially a wooden cylinder about 1½in diameter with a small-diameter hole running the length of the 12in-long device.

Laennec happened upon the idea for a stethoscope in an attempt to better hear the heart of a young woman described in his medical article, *De l'Auscultation Médiate*, published in August 1819 as being 'of the great degree of fatness'.

Laennec had discovered that the new stethoscope was superior to the normally used method of placing the ear directly on the chest (immediate auscultation) and coined the phrase 'mediate auscultation' (indirect listening). He named his instrument the stethoscope, from the Greek words *stethos* (chest) and *skopos* (examination).

Here are some pictures of my reproduction of an early Laennec monaural stethoscope. This reproduction was turned from oak and the beads simulating joints where the 10in long piece was put together were ebonised. Photo A shows the 'ear trumpet or horn' end that was placed against the body of the patient. Photo B shows the end placed against the ear of the physician.

Many of the varied shapes and sizes of these instruments were developed as physicians modified Laennec's original design either for improved auscultation or for aesthetic design reasons. I discovered there were myriad shapes, although they all had some things in common: a wooden tube of varying lengths and shapes with a hole down the centre running the length of the tube, an end of various diameters with most having an ear trumpet or similar shape which is placed against the patient's body, and an ear plate or cup which seats against the physician's ear.



PHOTOGRAPHY BY MIKE STAFFORD



A



B

During my research I found a copy of an 1869 advertisement by the Maw & Son Medical Instrument Company (C) showing a wide variety of stethoscopes from which physicians of the day could choose.

With my curiosity amply engaged, information and dimensions in hand I decided to try to turn some of these interesting devices. It turned out that they were not as easy as I thought. Of course that is an indictment of my turning skills. The craftsmen who made the original antique instruments did so without electrically powered lathes and modern turning chisels.



IMAGE COURTESY OF THE NATIONAL LIBRARY OF MEDICINE

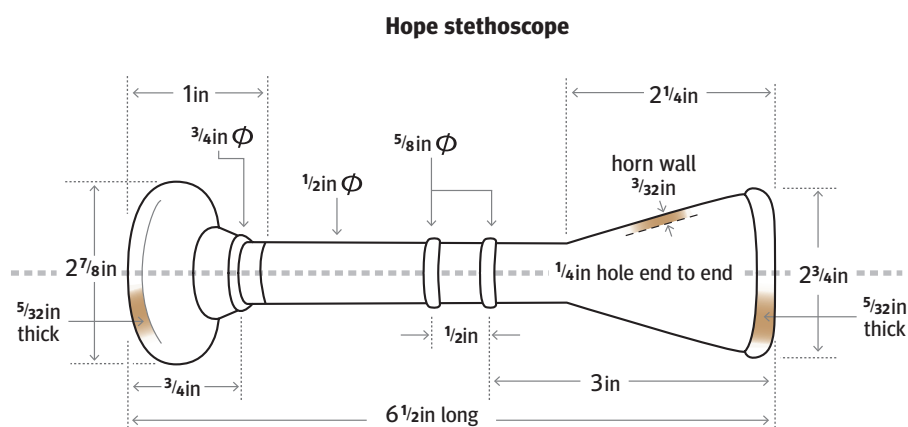
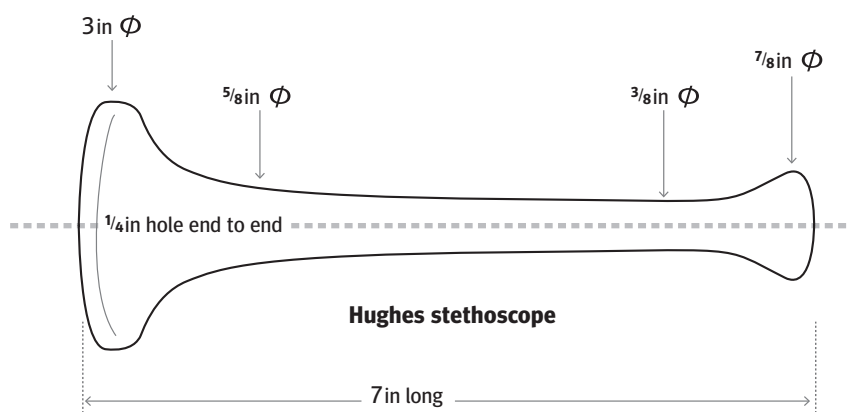
Plans & equipment

Tools & equipment

- PPE & RPE as appropriate
- Spindle roughing gouge
- Parting tool
- Drill chuck
- 1/4in carbide-tipped brad point drill bit
- 12in long 1/4in brad point drill bit
- Assorted sizes Forstner bits
- Chuck and jaws
- Live centre with 1/4in cup centre
- 1/2in, 3/8in and 1/4in spindle gouges
- Long grind 3/8in and 1/4in detail gouges
- No.2 Hunter Osprey
- Assorted beading tools
- Sanding stick/rod with self-adhesive sandpaper in assorted grits

Materials

- The **Hughes** stethoscope: walnut blank 8in long and 3in in diameter.
- The **Hope** stethoscope: cherry blank 5 1/4in long by 3in diameter for the body. Maple 1in long and 2in long, both 3in diameter, glued to the ends (to simulate the ivory used that was used for the horn and ear plate).



◀ How to begin – the Hughes monaural stethoscope reproduction

1 For my first attempt I chose what I thought was a simple design, the Hughes monaural stethoscope. I found little information about the Hughes monaural stethoscope other than the name and a picture, but it appeared to be a fairly simple piece to turn.

I thought about what was necessary to make this stethoscope. First was a suitable piece of wood appropriately sized. According to my research, many of these medical instruments were made from fruit woods. I don't have an endless inventory of fruit wood blanks so I chose to turn my reproductions from whatever I could find in my scrap pile or wood racks that was large enough for the stethoscope. Some of my wood choices were better than others.

Using the information on size I had extrapolated from a close examination of the picture, I cut a blank to length and mounted it between centres. Next, I turned it round and formed a tenon on each end.

2 How do I get a long, skinny hole down the middle of these turning blanks? The obvious answer is with a drill. I had some 12in long brad point drill bits and I also had some shorter and stiffer carbide drill bits. So, do I drill from each end and hope that the hole meets in the middle?

I tried drilling from each end with my ¼in carbide brad point bit and the holes do meet somewhere near the middle but not necessarily in alignment with each other, as I found out during my first try. I don't know if this misalignment is due to bit-wander or run-out or some other reason.

While turning the stethoscope, I thinned the shaft down to make the tube as small as practical around the ¼in hole that I drilled and I went through the side where the bits did not meet in perfect alignment. These long, skinny bits, even brad point bits, have a tendency to wander as they follow the grain down the length of the blank.

So I decided to change my strategy and rather than drill two holes hoping they would meet in the middle I decided to drill the hole from the ear plate end towards the ear trumpet or larger end. I started this process using the shorter, more stiff carbide bit which allowed me to advance the quill and drill almost 4in into the blank.

3 Once the shorter carbide brad point bit had reached its limit, I switched to the 12in brad point bit to slowly drill the remainder of the hole until the bit exited the opposite end. By using the shorter, stiffer bit to create a 'guide' hole, the longer, more flexible bit was able to complete the job with less wandering.

Note: With both bits it is important to slow down both the rpm of the lathe and the speed at which the quill is advanced in the headstock so that the bit has time to cut. It is also necessary to frequently back the bit all the way out to remove the chips it creates.

If smoke starts exiting the hole the bit could end up stuck with its flutes packed with chips. This is particularly true with the longer bit.

Turning the stethoscope

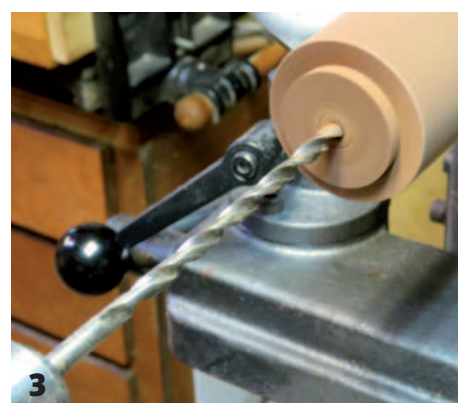
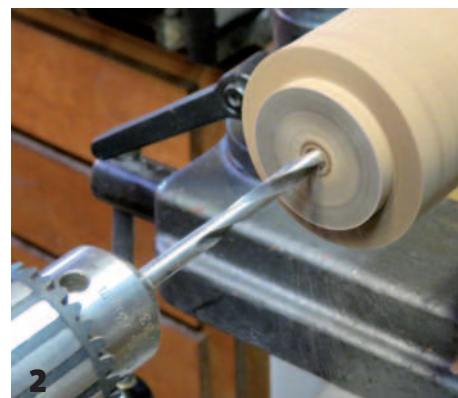
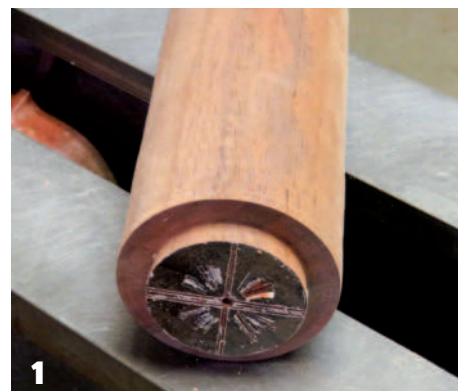
4 With a hole all the way through the length of the blank it was now time to turn the stethoscope to shape. First I turned the blank end for end, putting the ear plate end into the chuck. I did not tighten the chuck until I could align the blank with a live centre. I used a ¼in diameter cup centre which had a shaft that fit perfectly in the bored hole in the blank. Once the live centre was in place I thoroughly tightened the jaws of my chuck. By aligning the blank with live centre in the bored hole I felt as if I was less likely to be off centre and turn through the small diameter tube I was going to create. This proved to be the case and once I started this procedure I had no more mishaps going through the side of the stethoscope tube. The live centre was used to provide resistance for the pressures exerted while turning the thin tube and only minimal pressure was applied toward the headstock.

5 Now that both ends of the blank are supported I could turn away the excess wood along the length of the stethoscope blank. The end being held in the chuck would become the ear plate and the end being supported by the ¼in cup centre would become the horn/trumpet that is placed against the patient's body. I quickly removed a lot of wood with the spindle roughing gouge.

Forming the horn/trumpet

6 I could not find any definitive information on the size of the Hughes stethoscope. But I extrapolated its approximate dimensions using an educated guess that the tube hole was ¼in. That led me to believe the overall length of the finished stethoscope would be around 7in. I measured and marked that length allowing a little excess for clean-up on the ends. Once the length was established, I made a shallow parting cut on the headstock end of the blank to establish the location of the ear plate.

Nearly all of the antique stethoscopes used a horn or trumpet shape mimicking the ear trumpet hearing aid of the day. This horn or trumpet shape varied in size and shape depending on the maker.



7 The Hughes stethoscope had a relatively small horn, the interior shape of which had to be formed before the blank was thinned much more to avoid vibration since the hollowing cuts were going to be made over 7in from where the blank was being held.

Because of the relatively small size of the horn shape, I decided to form it by hollowing with a long point detail gouge applied directly into the end grain using a technique much like when one is starting the hollowing for a bowl. Light cuts are necessary for avoiding vibration/chatter or, worse, knocking the blank out of the chuck.

8 As the depth of the cut progressed it became increasingly difficult to avoid chatter/vibration, so I switched to a very light pull/scraping cut with the wing of a smaller detail gouge, which allowed me to finish the depth and refine the interior shape of the horn.

9 Now that the interior of the horn of the stethoscope was formed my next task was to sand the inside before I reduced the diameter of the tube around it.

So how do you sand inside the horn? I searched through my sanding tool drawer looking for a metal tool to hold sandpaper, given to me by my friend, Hugh Buttrum of California. It is an 8in long, $\frac{3}{8}$ in diameter steel rod with a slot cut in one end that allows the user to insert a strip of sandpaper and wrap it around the metal rod. I found it works best with self-adhesive sandpaper but it allows the user to safely sand into small areas and can be mounted in a drill if so desired. Sanding was easily and safely accomplished using the tool and strips of self-adhesive paper.

10 Once the horn is sanded and polished on the inside, I was able to begin shaping the exterior of the horn and the body of the reproduction Hughes stethoscope.

Turning the body of the stethoscope

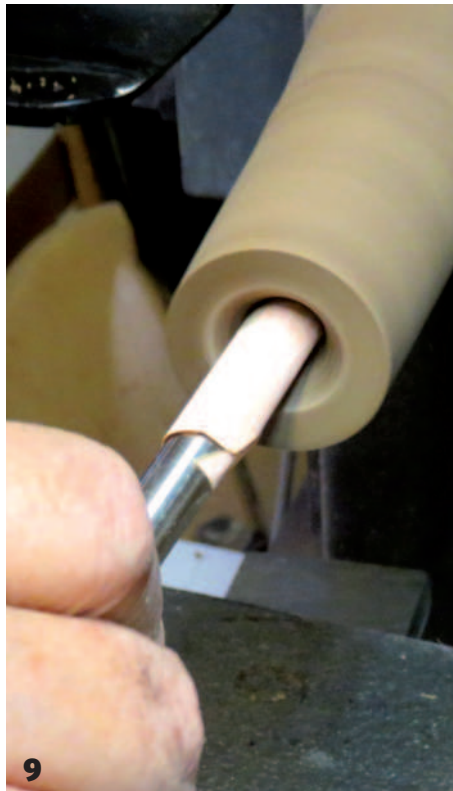
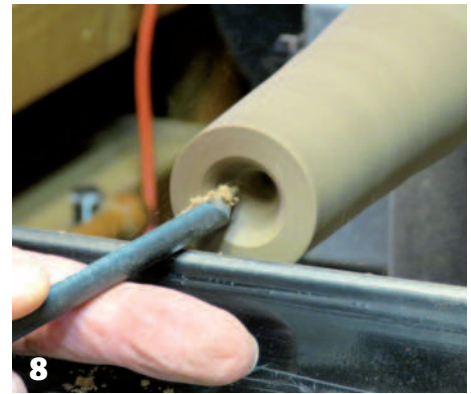
11 This long, skinny tube needs to be supported as it is turned, particularly the areas which are farthest from the chuck where the blank is being supported. Rather than drag out my steady rest, which is too large for these small-diameter tubes, I decided to support the turning on both ends by continuing to use a $\frac{1}{4}$ in cup centre. I could insert the $\frac{1}{4}$ in shaft of the live centre into the tube and support the end of the turning.

I started turning the body by forming the outside of the horn first with a spindle gouge.

12 With a small spindle roughing gouge, I hogged off the excess wood around the tube.

13 Once the bulk of the waste material was removed, I switched to a spindle gouge to further refine the shape.

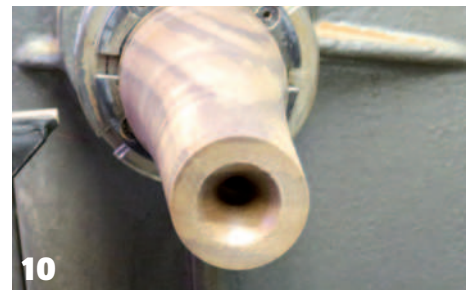
14 As I proceeded with thinning down the tube, which I wanted to be less than $\frac{1}{2}$ in diameter I switched to a Hunter Osprey tool, which allowed me to take very fine cuts with minimal pressure on the turning.



HEALTH & SAFETY

WARNING! Do not be tempted to use your finger to sand inside the horn of one of these small-diameter turnings (or any other for that matter).

Injury from inserting a finger into a small tapered hole such as the horn on this turning or other similarly shaped turnings can be catastrophic and painful. The injuries resulting from such an accident can include loss of the fingernail, spiral fractures of the finger bones or worse. You have been warned.



15 After getting the shape of the stethoscope like I wanted it was just a matter of sanding the finished turning in preparation for finishing.

16 I applied finish and polished the result. With a thin parting tool, I parted off my reproduction Hughes stethoscope and hand sanded the parted end using hook and loop discs mounted in a drill. I applied finish and polished the ear plate end.

17 The finished stethoscope.

The Hope Presentation Stethoscope reproduction

The Hope Presentation Stethoscope was so named because Dr James Hope (1801-1841), an English physician and professor of medicine, commissioned and presented the Hope stethoscope to one of his exceptional medical students in 1839. The original stethoscope was made from cherry wood and ivory and was constructed by James Grumbridge, a woodturner and medical instrument maker in London. The ivory was used for the ear plate and horn tip and was threaded on to the cherry body. The original stethoscope bore a silver band between the two beads in the centre of the instrument that was engraved and read: 'Prize for auscultation awarded to C Freeman by Dr Hope, 1839.' Hope was recognised as 'the first cardiologist in the modern sense' by PR Fleming in his 1997 book *A Short History of Cardiology*.

My reproduction of this famous stethoscope was turned from cherry wood but I substituted maple to simulate the ivory, which is in very short supply in my shop. I also did not include a silver band between the beads.

Turning the reproduction Hope stethoscope

18 I constructed a glued-up blank from cherry and maple with the maple on the ends where the ear plate and horn tip would be located. This blank was sized so I could end up with a reproduction 6½in long.

Drilling the blank for this project was done in the same manner as the Hughes stethoscope reproduction, so I am not going to repeat the description for drilling the hole that is bored the length of the blank.

19 After drilling the tube hole I flipped the blank end for end and located the blank in the chuck jaws using a live centre to assure that the tailstock and chuck were in alignment for the next operation – step drilling. Once aligned I securely tightened the chuck jaws.

Forming the horn/trumpet

The trumpet end of the Hope stethoscope is much broader and extends deeper into the instrument than the relatively narrow and shallow horn of the Hughes instrument. The broader and deeper internal shape necessitated a different strategy to obtain the correct form. I decided that step drilling was the easiest and quickest way to remove the waste wood.



20 It was very difficult to use a gouge to hollow the end of the blank to the shape and depth required to create the horn shape required for this stethoscope design. But by drilling a series of steps using bits of different diameters I was able to remove the bulk of the waste wood. I started with a 1¼in diameter Forstner bit and drilled about ⅛in deep into the end of the blank.

21 Next, I switched bits and used 1⅞in Forstner and drilled another ⅛in deeper. I continued switching to smaller and smaller bits while drilling deeper until my next step would be to use a ¼in bit, which is the size of the original tube. After drilling all the steps, the interior of the horn/trumpet began to take shape.



◀ **22** With the bulk of the waste wood removed and the shape started I could now use light pull-scraping cuts with long ground detail gouges to remove the steps and refine the shape of the interior of the horn.

23 When the interior of the horn was shaped I sanded the inside with my metal sanding mandrel.

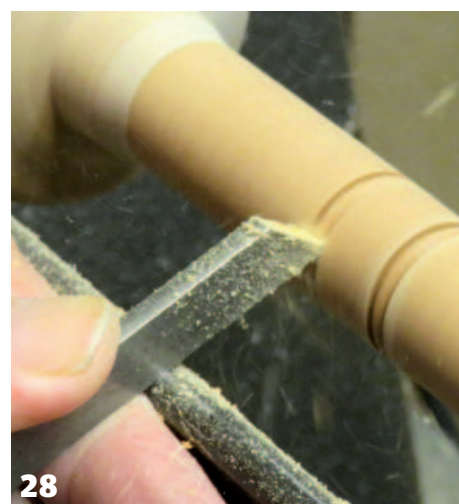
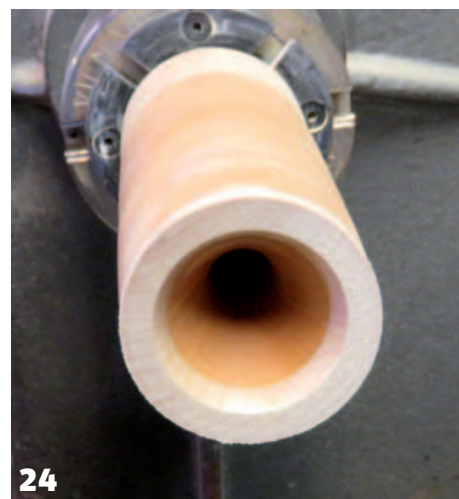
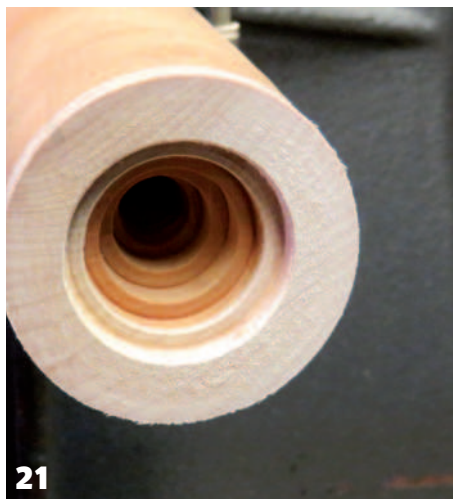
24 After sanding I applied finish and polished the interior of the horn.

25 Before I began shaping the body of the blank I decided to form the edges of the ear plate and the horn with D-Way beading tools.

26 After completing the beads on the horn and ear plate, I quickly removed a lot of waste wood between the ends with a spindle roughing gouge to begin refining the shape of the body of the stethoscope.

27 With the centre of the blank reduced in diameter I could now begin to refine the exterior shapes of the horn and ear plate to blend both into the thinner cylinder of the body.

28 After turning the horn and the ear plate close to finished shape and thinning down the body tube, I turned the decorative beads on the stethoscope. Once again the D-Way beading tool was my tool of choice.





29

29 Once the beads were formed, all that remained was to thin down the body tube to finished diameter. After that finishing and sanding followed.

30 The finished Hope stethoscope reproduction.



30

Laennec's improvements

31 After Laennec's article on stethoscopes was in circulation, many physicians and medical instrument manufacturers worked on improving his basic design. Laennec himself made numerous improvements to his original design. His second stethoscope design reduced the weight of the instrument somewhat while increasing the diameter and depth of the horn and ear plate to improve auscultation. This reproduction is 8in long and is turned from Osage orange. He retained the original internal horn shape while increasing the diameter of the end to be placed against the ear.

32 Laennec continued to work to improve his stethoscope design and finally came up with a much lighter instrument which incorporated the larger, deeper horn and ear plate but greatly reduced the diameter of the tube. This reproduction is turned in maple and is 8in long.

33 As more emphasis was placed on the value of foetal auscultation, Laennec developed his own model of foetal stethoscope. Laennec reverted to his original beaded design but shortened the stethoscope to less than 4in long while including a larger diameter ear plate. This reproduction is turned from sapele.

Conclusions

I conclude by saying I enjoyed my foray into the world of turning antique reproduction stethoscopes. It was an interesting and somewhat challenging exercise for my turning and hollowing skills. I enjoyed figuring out how to make some of these instruments. Of course, some of my reproductions would have been more historically accurate had I had the skills to form threads so the parts could screw together as the original versions did.

I also found it fascinating to actually use my reproductions and see how well they worked. Certain versions provided much clearer sounds than others. I don't know if the improved sound transmission is the result of the design or if certain timbers are better suited for the task. I didn't use fruit woods exclusively, from which most of the originals were turned, but some of the other timbers I used seemed to work just as well.

So, if you are looking for an opportunity to play doctor, I suggest you go to your scrap pile and turn a few monaural stethoscopes. You never know what you will hear. ●

31a



31b



32a



32b



33



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Young turners needed

Pete Moncrieff-Jury looks to the next generation of turners

One of the questions that crops up a lot at clubs, galleries etc. is how do we attract young people to woodturning and, indeed, other crafts? Certainly, in the UK crafts are often seen as the domain of predominantly older men and women and, until recently, ones that were seen as 'trades' usually of men. Fortunately, there is now a good number of highly talented lady turners (is that the PC way of putting it?) who are often at the forefront of innovative and highly skilled work. Younger people, however, are needed to continue the skills and the crafts.

In our club the average age is probably well over 60, as many of the turners have taken up the craft as a hobby on retirement. This isn't a problem per se, but when you see the seminars, conventions etc., with so many mainly older attendees as well, you have to ask yourself: 'How do we get young people interested?'

I am one of those who believes everyone has creative abilities, but in the world in which we live being creative isn't something that is promoted in schools or colleges. It is knowledge, the intellectual aspect, that is promoted and even, dare I say it, forced on young people with the attendant failure of those who would be far better served learning a skill. I learned to turn at a time when schools taught art, woodwork, metalwork and other practical skills and crafts. Today few schools seem to have the facilities, having sold off the machinery and equipment and instead focused on making children and teenagers into fodder for universities.

With all this in mind, how do we encourage young people to get involved in crafts, in our case woodturning? I don't have the answers apart from trying to get them making, doing things.

One idea is that each of us reaches out to the young people in our families and to those we have contact with. In other words, take on the responsibility of being an ambassador for our craft.

Obviously, health and safety can be an issue, but we should be looking out for that anyway. There is something special in creating something. It doesn't have to be a great decorative work of art, just something that the person can feel proud of. Having been in the teaching profession myself I can also say that watching someone learn a skill and the look on their face when they hold something they have made is a special privilege in itself. Many young people have never experienced the thrill of holding something that they have made, never thought that they could actually create something themselves. Often it is a case of experimenting, getting to see what the young person is good at – there are so many ways to encourage people but it needs people to do the encouraging.

I suspect that most, if not all, those who read this magazine are enthusiastic about their craft. Think how great it would be to have young up-and-coming turners in our clubs and seminars; to have their work in our galleries. To happen it will need us to reach out; to be prepared to share our workshops and our skills with youngsters.

Just a thought, really, it is up to us to promote our craft. Maybe you already do – if so, that's great, if not think about it.



PHOTOGRAPH BY KEVIN ALVITI

Kevin Alviti's son Al – starting young

“
How do we encourage young people to get involved in crafts, in our case woodturning? I don't have the answers apart from trying to get them making, doing things
”

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Contact your nearest stockist for availability!

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