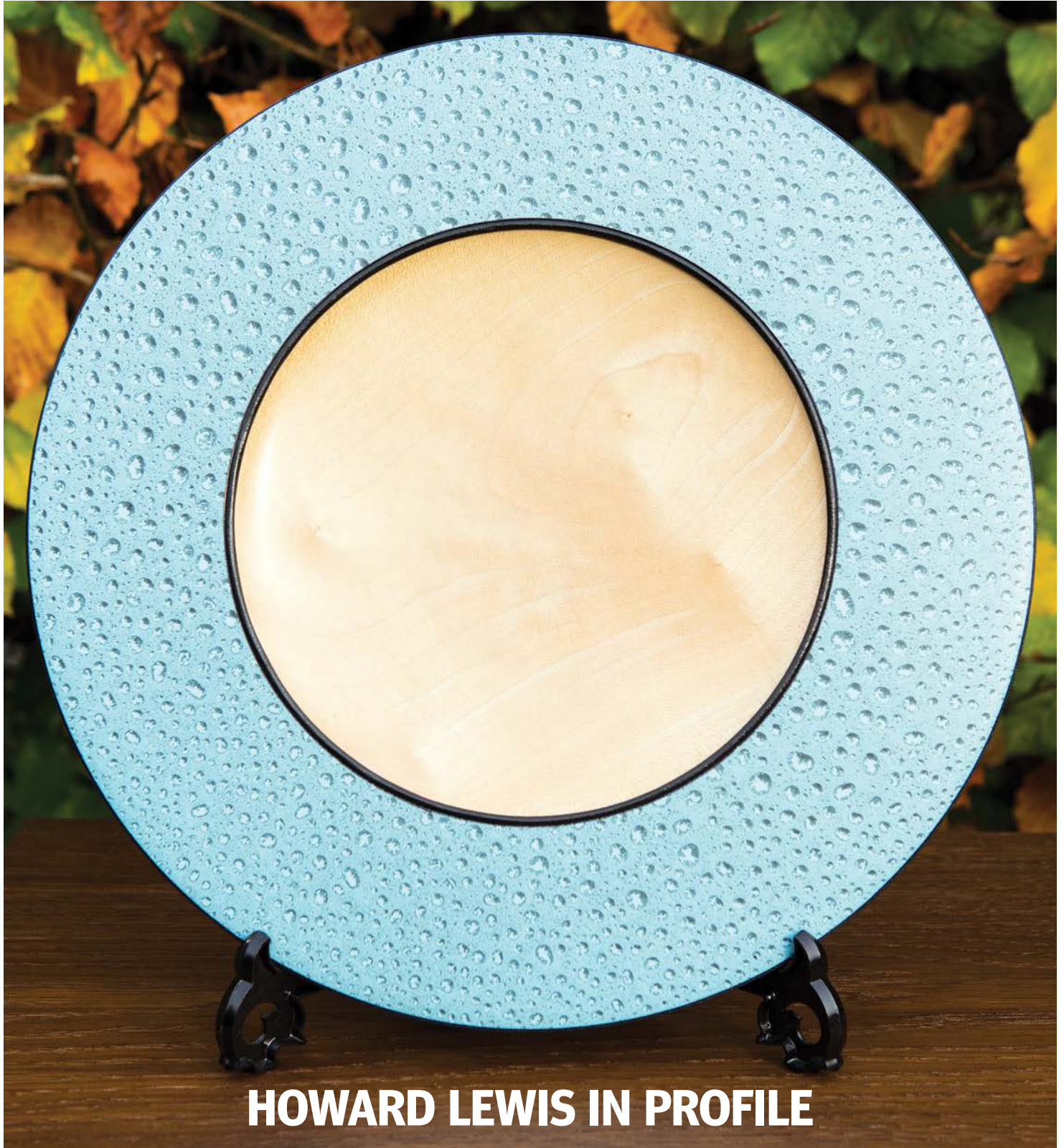


Woodturning

THE WORLD'S LEADING MAGAZINE FOR WOODTURNERS



HOWARD LEWIS IN PROFILE

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Online Review



"The new Herald - Sets a new standard"

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Creative desire



PHOTOGRAPH BY ANTHONY BAILEY

I have commented many times that people have an innate desire to create something with their hands and mind and many never really find their perfect fit as far as what medium they want to use. That is a shame. The ability to build, make, craft, create, or whatever other name you choose to use, something is the most wonderful experience. That said, people who express a desire to explore or make things often do not seem to know where to start. I have found many are reticent about asking for fear that it might be deemed a 'silly question'. Others have expressed a fear of showing themselves up as having no ability. Fear of hurting themselves is often expressed when it comes to hobbies that involve sharp objects and machinery, but most just express a fear or apprehension of trying something new. Others say they would like to try something but don't know what's available to try.

That is an interesting one. People not knowing what is about is due to us and other crafts and arts not being very good at marketing. I recently checked on a national association of a specific craft yesterday and, of the clubs mentioned as members, I could only find a third of them with websites. They were listed as clubs on that association's website

and had contact details, but how many people realise there might be national associations for something and go searching for one? Also, making a phone call to someone can be quite daunting too. Surely having a readily available 'window' into what a club is doing is very important? People comment that many sites they find did not say they provided come along and try/taster sessions, or that they would be holding events at which people could find out more.

We cannot bemoan a lack of members or interest if we as individuals and collectively do not do something to help ourselves. Hobbies of all kinds depend on people practising them and being willing to share. I know there is more than one way to share information, but surely a mixture of approaches is best? It does take time, but marketing is a fundamental aspect of letting people know what companies, organisations or people sell or are doing.

There are many complaints about the lack of this or that, or not getting people to come along, but sometimes the faults in many areas are collectively ours. We often are just not good enough at letting people know things. I know it takes resources and time. That is a perennial issue and every company

and organisation battles as to what resourcing to allocate where and when, but if none is allocated and things are not done, then don't moan when things don't happen.

If we do not collectively get better at marketing ourselves people will never know about us other than seeing the nice things made on the internet and so on. They will not necessarily see a relevance to them or realise that there are a lot of crafts and hobbies for them to try, in a non-judgemental environment on a no-commitment basis with people who just want to introduce others to the fun they can have.

There are many articles about hobbies being extremely beneficial to people. Most comment that social interaction is one of the major benefits – and, let's face it, this is one of the key reasons many people belong to clubs, along with the learning side and interest in the other aspects.

Let me know what you and your club are doing to promote turning.

markb@thegmcgroup.com



Cover image: Howard Lewis (see page 28)

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HEALTH AND SAFETY

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



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Fun-to-make owls

Paul Howard shows how to create these delightful creatures

PHOTOGRAPHS BY MARK BAKER/GMC PUBLICATIONS ILLUSTRATIONS BY PAUL HOWARD

These owls are fun to make but do require a systematic approach. I make three, a family of them. The sizes I use are 95mm for the father owl, 75mm for the mother owl and 60mm for the baby owl.

For this project, based on ideas from Andrew Hall and a German turner by the name of Gunther, I will explain the processes involved in making the largest of the owls.

The processes are identical for each size and many people find working on a larger item first is easier and more forgiving of mistakes than working on a smaller item. It is important that you build in wiggle room for error. No one knows what size

you intended something to be except you. To be honest, the sizes are irrelevant as long as you have them proportionate to each other if you are making a family of owls.

This project requires that you turn a sphere about 100mm in diameter. This is a good starting size to learn to turn spheres and gives a bit of room for adjustment and errors so you end up with a sphere of 95mm or close to it.

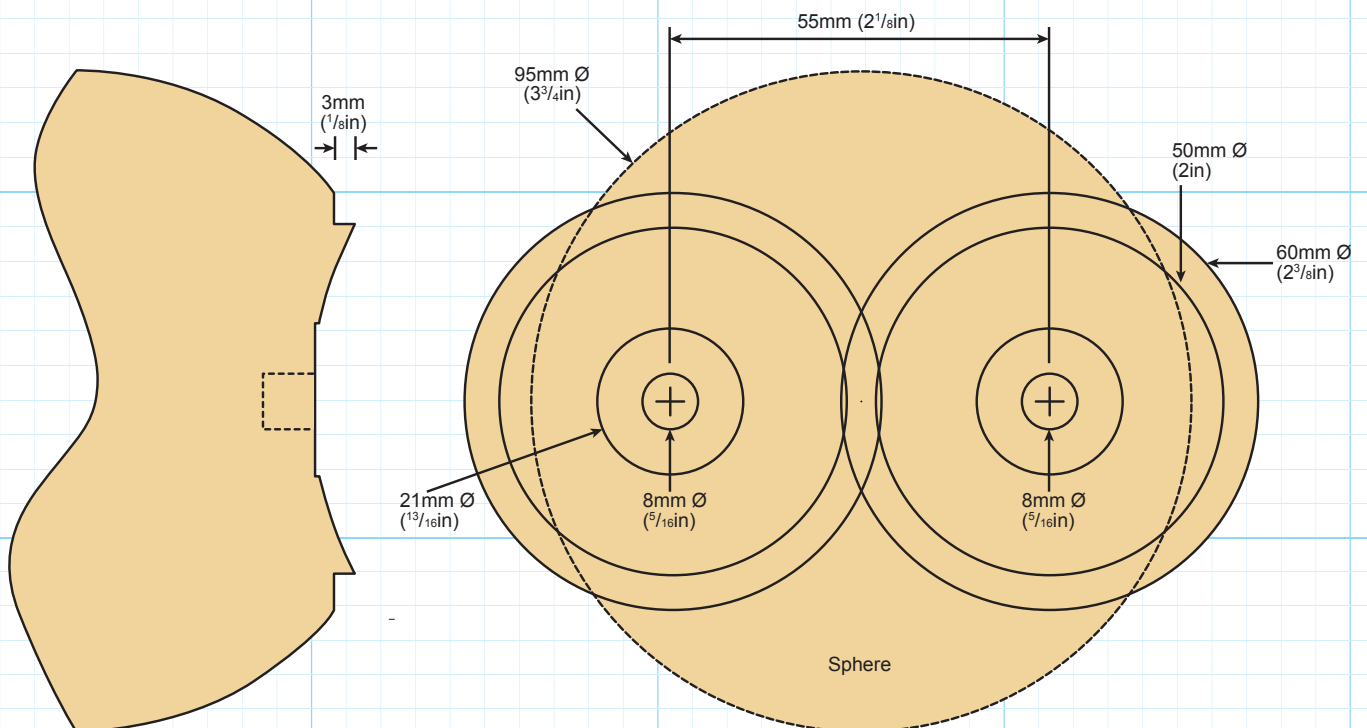
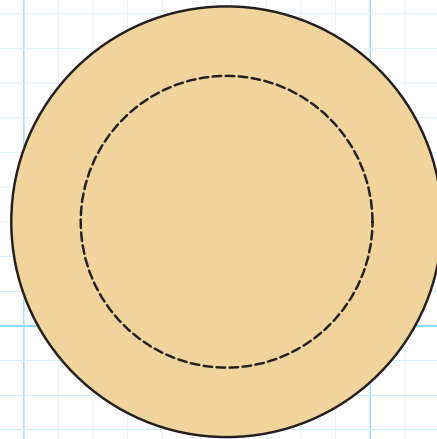
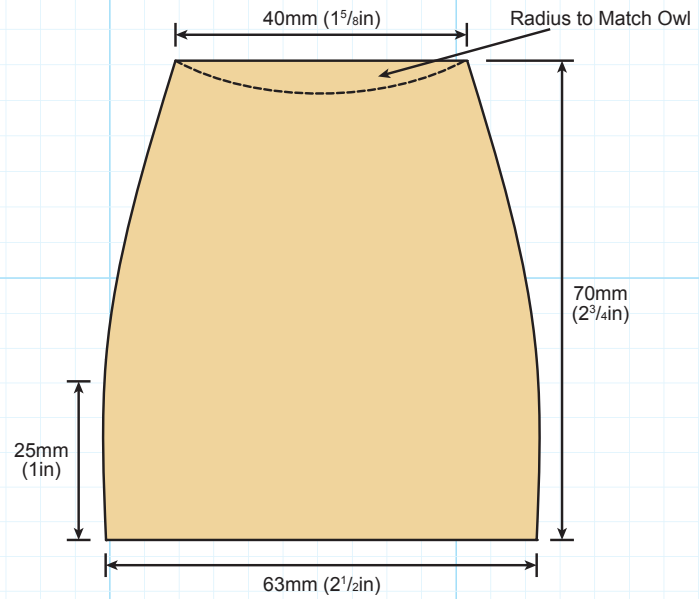
I will show some simple and effective chucking methods to help refine the shape of the sphere and also for holding the sphere when decorating the eyes. I hope you have fun making these.

Top tips

- Always check lathe speed before turning and err on the side of caution speed-wise, particularly when using jigs on the lathe.
- I make a plug gauge the same diameter as the eyes being used to test the fit after drilling.
- Do all the finishing before fitting the eyes.
- Adding hats adds a new dimension.
- Sharp tools are very important with any project, so remember to sharpen frequently.

TOOLS AND MATERIALS

- Personal and respiratory protective equipment
- Spindle roughing gouge
- Spindle gouge
- Scraper
- Beading and parting tool
- Dividers
- Chuck
- Drive spur
- Revolving tailstock centre
- Ruler
- V carving tool or router and V bit
- Router support
- Indexing system
- Disc sander with table
- Drill chuck
- Drill bit to suit eye insert
- Epoxy resin
- Finish of your choice
- Abrasive down to 600 grit
- 21mm Trimits Safety toy eye – amber
- 6mm thread inserts and roofing bolts
- Cup support for headstock and tailstock
- Timber of your choice:
- Owl head: 100 x 100 x 125mm long
- Owl body: 70mm x 70mm x 80mm long
- Beak: 20mm x 20mm x 70mm long



Geometry of a 100mm (4in) Sphere enclosed by an Octagon

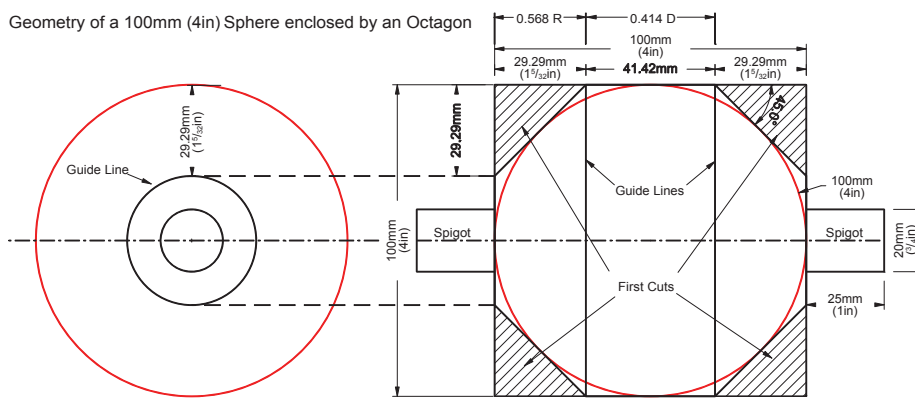
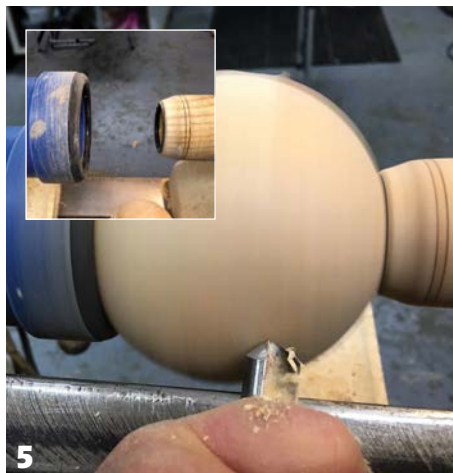
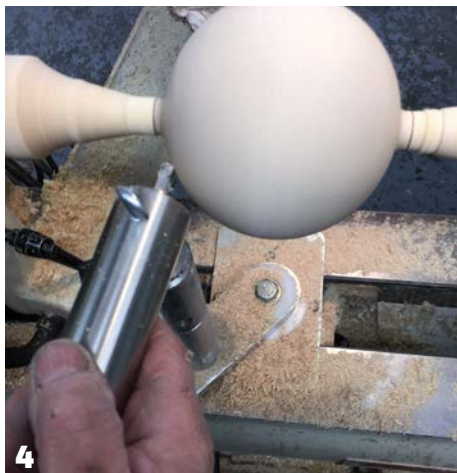


Fig 1

Marking out a 100mm (4in) Diameter Sphere
Starting with a 100mm (4in) Diameter Cylinder by 100mm (4in) long



Turning a sphere

1 Select timber just a little larger than the overall size required and cut to an approximate length of 125mm. Alternatively, cut a piece of wood 112mm long and glue on scrap blocks with hot-melt adhesive at each end, so you do not waste expensive timber. If you are using a jig to turn the sphere, the latter method is better as you have more space to manoeuvre the jig in. For this method I would use scrap blocks 40mm x 40mm x 70mm in size. Ensure the hot-melt glue is at the correct temperature, apply glue in the middle of the marked section and then push the scrap block into place. Repeat for the other end.

Mount the wood in the lathe with the speed set at about 800rpm or a comfortable turning speed for you. To turn a 100mm sphere, measure and mark a 100mm-long section and mark the centreline of this around the cylinder. Turn down the waste ends at the end of the cylinder to cylinders of about 30mm diameter or to give you clearance to cut most of the sphere form shape. Now, multiply the diameter by 0.292 which equals 29mm approximately. Mark a line in from each end and down on each side face so you can turn between these lines to remove the waste on each side of the sphere.

2 Gradually remove the timber using a gouge and scraper until you are close to the partial sphere shape required, but leave the centreline in place. Now turn the spigots to a slightly smaller diameter, tapering towards the sphere from each end.

3 Refine the sphere as much as you can using a combination of gouge and scraper and, if required, refine the shape further by taking a holesaw mounted on a handle. The holesaw should have teeth ground off so you have a flat edge at the opening, of the right size to suit your sphere, then manoeuvre this across the surface to highlight any anomalies to help you achieve an even shape.

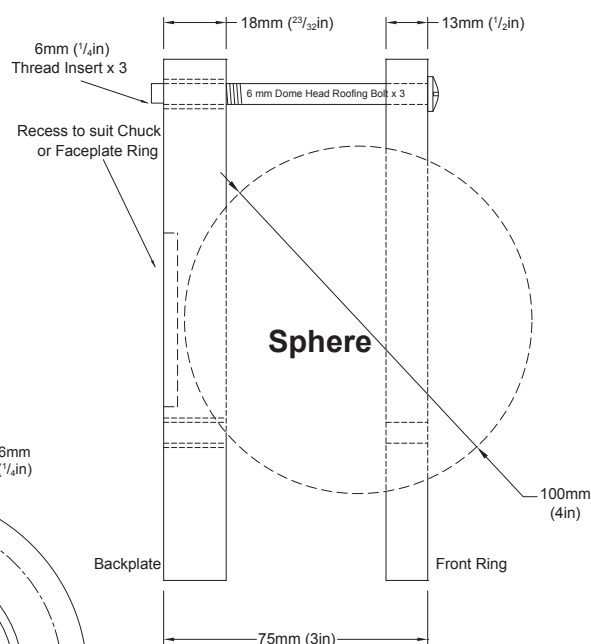
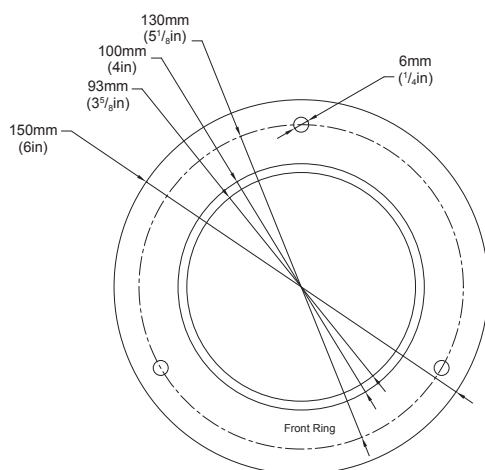
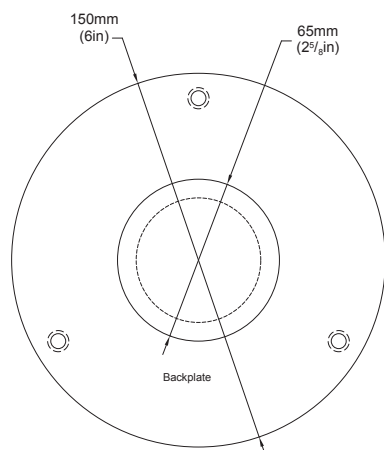
4 You can use a jig instead of hand-cutting a sphere.

5 Once you have shaped the sphere as far as you can, remove it from the lathe. Mount a cup-shaped friction drive, with at least the radius of the sphere in the end, on the headstock end of the lathe. This can be held in a chuck or on a faceplate. Now, fit a cup chuck on to a revolving centre too. If you have a threaded front end on your revolving ring centre you can screw on a homemade or readymade support. Alternatively make one to slide over your revolving centre or create one to fit in front of your revolving ring centre and between the sphere. Once everything is in place, secure the sphere between the supports with the sphere end projections clear of the cup supports. Cut off excess length of the ends and continue to refine the sphere.

You will see a shadow area as the ball spins. Use a gouge or jig to cut down to the solid ball outline. Once shaped, stop the lathe and move the ball a little and then re-clamp and cut away the shadow line. Repeat until you have a neat sphere and then sand it all over to a smooth surface.

◀ Marking out the eyes

1 Set a pair of dividers to just over the radius of the sphere, 55mm, and mark two points on the sphere. Take into account any interesting grain of features. Draw two intersecting circles approx. 60mm diameter on the centre points so they overlap by about 5-6mm. Next draw two more circles about 50mm diameter for the fluted or decorated part of the eye.



Turning and decorating eyes

2 To turn the eyes the sphere can be held in a vacuum chuck or a simple doughnut chuck. Making your own doughnut chuck is a simple and easy method to hold spheres, but you will need to make extra front rings with different hole diameters to suit different diameter spheres. Follow the diagram to create one of your own. I will use a doughnut chuck which is mounted on a chuck via a recess in the backplate. If making your own doughnut chuck, remember to round off all edges.

3 With the sphere loose in the doughnut chuck, centre the sphere on one of the centre marks made when marking the eye locations with the dividers and lock the sphere in place. The roof bolts and nuts project past the backplate. Place a hi-vis parcel of duct tape over them to remind you to keep fingers and body parts clear of this area. Be mindful of the bolt heads at the front of the plate when turning.

4 Now mount a drill chuck in the tailstock and drill a hole, 8mm in this case, to suit the tenon on the back of your owl eyes being used.

5 Now, using a bowl or spindle gouge, turn the first concaved eye surround section, cutting only on the inner marked ring. Then use a parting tool to make a 3mm-deep cut at the edge of inner marked circle down to the outer marked circle to create a flat area which causes the eye area to stand proud of the main sphere body. Once one eye is cut, rotate the sphere to turn the second one, taking care to make them the same size. Some experimentation may be needed to get the best finish because, depending on the position of the eyes to the grain, it could be a mixture of end and side grain.

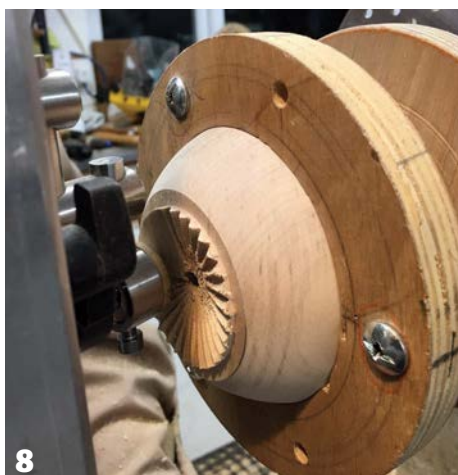




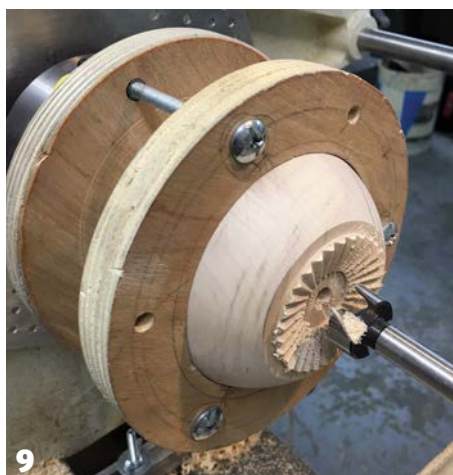
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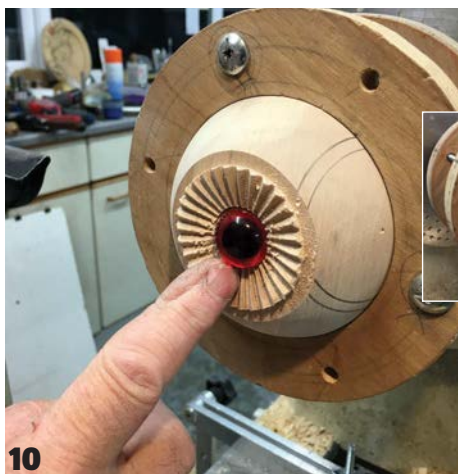
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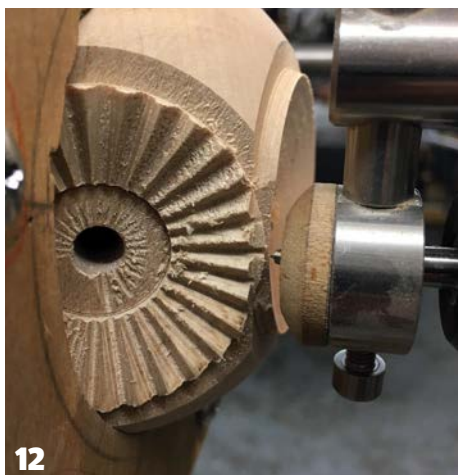
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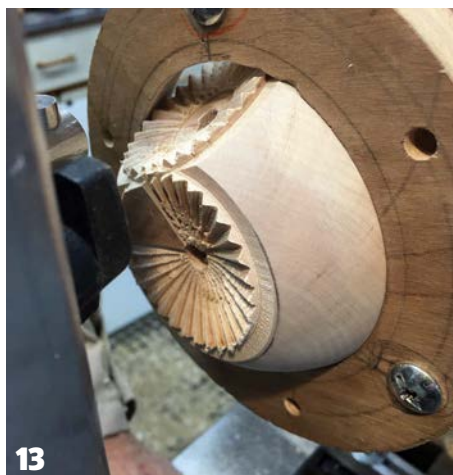
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12



13

Decorating the eyes

6 The decoration of the eyes can take any form – even being left plain, but I like a textured eye surround. I typically create V-cuts using a router held in a jig and an index system to hold the work in specific positions while I cut 30 V-shaped flutes. You can have more or less flutes and while I cut mine on the centre line, you can cut just above or below centre to create a different effect. Experiment to see if you like V, U or other cutter shape decoration.

7 You can carve the eye decoration by hand with a V-gouge, have shallow or deep U-flutes, turn beads, or any other type of decoration you choose or even leave the eye surround plain. The router and jig create a regimented effect which some like, but others prefer a hand-cut effect which is not so orderly. If you decide to create hand-carved/cut decoration it is important the work is stable, so use an indexing unit to hold everything steady while you cut.

8 Whatever method you use, be gentle when cutting and keep the cutters sharp to minimise any tear-out. The poorer the surface you create now the more cleaning up you have to do later, and with carved or routed decoration, it is tricky to clean up without losing detail.

9 Once you have the eye surround decorated as you want it, drill a hole of a size that will allow a homemade or bought eye to be fitted into it. I like the eye to sit in just below the depth of the V-cuts just created.

10 Go gentle with the drilling and check the eyes being used in the hole every so often to make sure you get it to the right depth. The size of the eyes I use is 21mm.

11 Once the first eye area is finished, slacken off the doughnut chuck, move the sphere to the right position for eye two and lock it in place. Now repeat the processes just done on the first eye area. Don't rush. Take care to ensure both eye area and surrounds are of the same size and shape. Any disparity ruins the piece.

12 The other aspect to think about is the alignment of any pattern you have created. Since I used V-cuts, I need to make sure the cuts made on the second eye surround align perfectly with the ones on the first eye. A bit of adjustment of the ball in the doughnut chuck in conjunction with the indexing unit might be required, but it is a relatively simple process to ensure alignment prior to cutting. Even if you are cutting the decoration by eye, close alignment of the detail on the eye surround is desirable.

13 Gently cut the decoration until the whole eye surround is done.

◀ The beak and cleaning up

1 The next item to make is the beak. You could just carve one on to the surface of the sphere, but I prefer to have a beak which is proud of the sphere. For this I add another piece of wood of a different colour, or in this case, I used beech (*Fagus* spp.) which I later painted black to create visual contrast to the timber used for the body. To make the beak I set up a 150mm sanding disc on my lathe with a table mounted in the banjo. The table is created from MDF and has a lip of aluminium at the sanding edge sitting just proud of the top of the MDF. This is a guide to move any jigs against. Note also the extractor hose is close to extract any dust. You can use a bench mount disc or belt sander. The chosen timber is cut to 20mm square by 100mm long.

2 I use a V-block to support the timber with an angle cut across the end of about 35-40°. If using a jig like this, run the V-jig along the aluminium guide and, using a slow lathe speed, sand the projecting section of the timber supported in the jig. Sand one side until it meets the opposite corner then turn the timber over and sand the opposite side to form the end of the beak.

3 Cut the beak shape off on bandsaw or with a hand saw (the overall length needs to be about 10mm). The first beaks I fitted to the owl were fitted to a flat carved surface of the sphere, but I found this difficult to get a good fit. Now I use a set of pen jaws in my chuck and turn the back of the beak to get a curved back area to create a perfect fit on the sphere.

4 The next stage is to sand the eye area and surround to a fine finish. You might be able to hand-sand this area or, if heavily carved or textured, you might be better off cleaning up using a combination of hand-sanding and a radial bristle brush held in a hand drill or on the lathe. You need to have a fine surface finish with no damage. The focal point of the owl is the eye area. Once sanded, glue the beak in place with fast-setting epoxy glue. Then apply your chosen finish – a spray lacquer works well – before fitting the eyes with a suitable adhesive.

Turning the body

5 The body is a simple turning job. I start with a spindle blank 65mm square 80mm long, mount it between centres and turn it to a cylinder. Turn a chuck spigot on the bottom and mount the piece in a chuck. Turn a concave shape in the top to match the shape of the sphere then turn the body shape to your chosen profile. For this project, the top is about 43mm diameter and the base 60mm. The middle of the body will be 64mm. Once shaped, sand and finish the body, part off from the lathe, clean up the base and apply your finish. Then you are free to orientate the head on the base at whichever position you choose. ●



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PHOTOGRAPHS BY STUART THOMAS

Pocket corkscrews

Stuart Thomas creates pocket corkscrews using both push-fit and screw-threaded tops

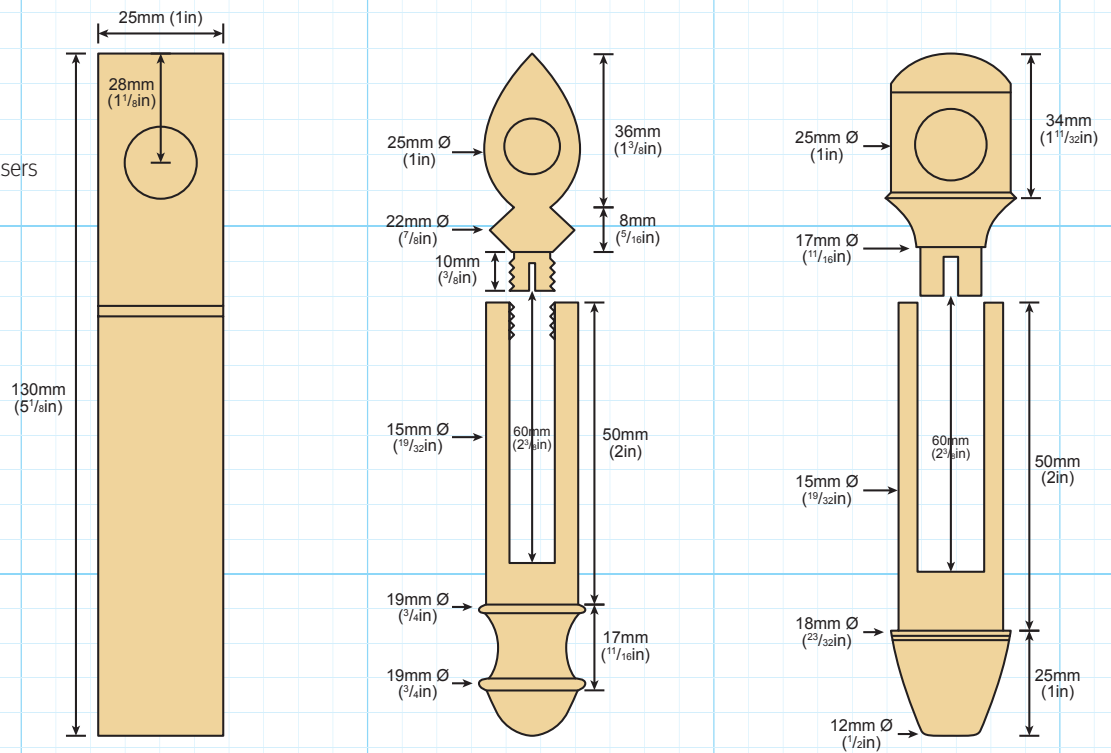
Some time ago an aunt of mine gave me one of these pocket corkscrews. I'd never seen one before and thought it an ingenious little gadget. This particular one was advertising Bistro Vino with an address in Bognor Regis, a phone number and stated proudly that it was 'open Sundays'. Apparently these were a frequently used form of advertising

and all the old ones I have seen have been threaded. Here I have also shown one with a push-fit top for those turners who would prefer not to chase threads. Making these corkscrews with push-fit tops means a greater choice of woods is available. If chasing threads, a close-grained hardwood needs to be used such as box wood (*Buxus sempervirens*)

or similar that are known to take a good thread. Some of the colourful acrylic pen blanks might work well too and could make very attractive corkscrews, although I have not used any myself. This is a great spindle-turning project and an ideal way to use smaller pieces of wood to create small gifts or for selling at craft shows.

TOOLS AND MATERIALS

- Personal and respiratory protective equipment
- 20mm spindle roughing gouge
- 10mm three-point tool
- 13mm skew chisel
- 20tpi male and female thread-chasers
- 3, 10 and 15mm drill bits
- Four-jaw chuck with pin jaws
- Boxwood (*Buxus sempervirens*)
- Abrasives
- Cellulose sanding sealer
- Three buffing wheels loaded with a fine, ultra-fine and wax finish respectively
- Epoxy resin adhesive
- Corkscrew insert

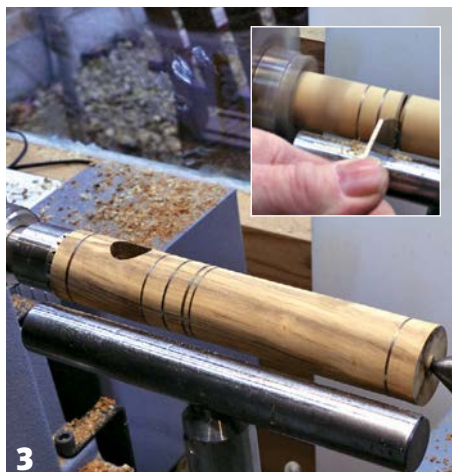


1 Cut a blank 28mm x 28mm x 145mm long. Mark out and drill a 15mm hole straight through it, 28mm from one end. It is important that the measurements are accurate and that the hole is straight within the blank. This end will be called the top. Do make sure that the 15mm hole that goes through from one side to the other is in the centre of the blank to avoid having more wood on one side than the other once turned.

2 Mount the blank on the lathe between centres and turn to a round with a 20mm spindle gouge.

3 Mark out the blank as shown in the drawing. The two lines which are close together indicate where the top and bottom will be parted off. Use a thin parting tool, taking care to make the parting cut a little wider than the tool to prevent jamming.

4 Having parted the bottom off, the top is still held in the chuck and a small amount of shaping can be done. Bring the tailstock up and use the point to make a reference mark for later.





5 Hold the bottom of the corkscrew in the chuck. Use a low lathe speed to drill a 10mm diameter hole 60mm deep and then round off the inner edge.

6 Now, set the lathe at 350-500rpm and chase a 20tpi female thread. There is no need to turn a groove to release the chaser as the hole is very deep and the thread only needs to be 12mm long. It is a small hole and, to prevent the underside rear edge of the chaser from catching the upcoming work, grind that corner edge round. NB: For those who do not want to chase threads, turn a push-fit spigot instead. If doing this, it is advisable to make the spigot longer and ensure it is a snug fit.



7 Return to the top of the corkscrew. Turn the spigot to size, then reduce the lathe speed to 300rpm and chase a 20tpi male thread to fit the completed female thread. A chaser release groove will be needed on this section at the shoulder.

Once cut, set the lathe speed at 500rpm and drill a hole of the right size to suit your corkscrew insert, 12mm deep into the top section.

8 Screw the bottom section on to the top and bring up the tailstock for support. Now shape the piece as required. Shape the bottom section but take care that the straight part is a good fit for the 15mm hole in the top, neither too tight nor too slack. Also, remember when turning the bottom section that there is a 10mm hole down the centre. With the bottom section completed sand to 600 grit.



9 Hold a small piece of boxwood in the chuck. Drill out a 10mm diameter hole and chase a 20tpi female thread.

10 Screw the top into a threaded jam chuck ready for final shaping. Complete the shaping ready for sanding.



11 Polish the completed corkscrew as you choose. I use a series of three buffing wheels. The first is loaded with a fine abrasive compound, the second with an ultra-fine abrasive compound and the third has fine carnuba wax to give the final glossy finish. If using buffing wheels, remember to keep a firm hold on the piece and always keep the piece below centre.

12 Remove the top from the main body and secure the metal corkscrew into the top using epoxy resin. ●

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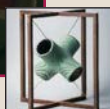
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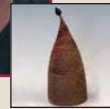
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Ireland



Asmund Vignes
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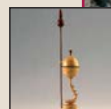
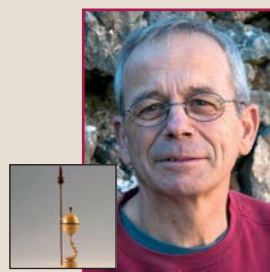
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Lots of demonstrations – you choose who you want to see, these are in individual rooms with full audio/visual equipment so you don't miss a "cut". New for this seminar - masterclasses. Refreshment breaks and lunch provided through the weekend. Saturday evening, an informal dinner and the auction of donated pieces to raise funds for AWGB development. Throughout the event we have trade stands to visit, a raffle and of course the instant gallery where we encourage everyone to bring up to 3 pieces of their best work to display.

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Saturday attendance & lunch only no dinner	£135.00	£125.00
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Processing green timber for woodturning projects

Mark Sanger looks at how to process timber



One of the main passions in my work is the finding, selecting and processing of my own turning blanks from unseasoned, homegrown timbers. For me this involves going to the timber yard, selecting a whole trunk for slabbing by the sawyer, along with branch wood for further processing by myself. Often, I process small to large logs and other sections such as crotch wood that I have been given or bought at a fraction of the cost of seasoned timber. Often it is even cheaper than firewood due to there having been minimum handling other than cutting of the tree.

Processing and turning our own stock

can seem a daunting task, especially with the misconception often associated with the need for a deep knowledge of wood and expensive and dangerous machines. To get started all you need is a sawhorse, bowsaw, a few metal wedges for splitting, sledge hammer and foundation knowledge of wood. A bandsaw is a useful addition but by no means a requirement to getting started. I will include the use of one later in the article. The one tool I will not be showing is the chainsaw as, frankly, I am not trained to demonstrate its use. Chainsaws are extremely dangerous if used incorrectly but I acknowledge

they are very effective if one follows the correct procedures and wears appropriate protective equipment.

My own favourite methods are that of the bowsaw, wedges and bandsaw and they have the added bonus of keeping me warm through good old-fashioned exercise. On the point of protective equipment, a faceshield, leather gloves and steel-toecapped shoes are good things to wear when converting the logs down to smaller sections ready to take into the workshop. Also, observe proper lifting and moving procedures to minimise back and hand injuries.

Wood choice

There are many books available on the subject of wood technology and, if you want to develop your skills of preparing and working with wood further, I would recommend you read some of them. The information is invaluable.

In this article I am going to discuss the foundation elements required to achieve consistent results in turning for processing and turning your own blanks. That is not to say you will not have failures – you will, working with wood is just that way – but those failures, with knowledge and

experience, will become less and less. Wood technology is a huge subject – here I am keeping it to the bare minimum that I use in my own work. When I started processing wood I probably lost 50% or more of my projects due to cracking and excessive movement. By using the methods I mention in this article I only lose one or two pieces a year and those failures I can trace back to either being impatient in seasoning or less than optimum initial wood selection.



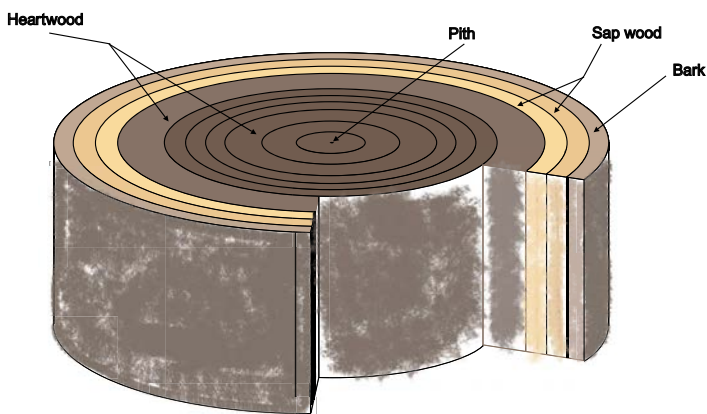
Picture of felled trees ready for conversion

Below the bark

Wood is made up of various layers that grow in direct relation to the conditions within the local environment, which in turn has an effect on the quality or not of the usable timber that can be obtained from it. Indeed, take the same species of tree grown in a variety of conditions, such as a windswept coast, waterlogged river bank, or middle of a well-drained, nutrient-

rich field, and all will produce different timber – some higher-coloured and figured, some with rippled grain and others stable and straight-grained. All can be preferred by the individual user for a specific project, but each can come with its unique workability and traits when seasoned.

Cross section of Log 2



ABOVE: A cross-section of a trunk with the layers making up the tree. We can see the sapwood, generally lighter in colour than the heartwood, the latter often being the preferred part of the tree to work, although both can be turned to striking effect as shown

RIGHT: A cherry (*Prunus* spp.) lidded form that was turned with the pith central slightly off-centre so that parts of the heartwood start to show through the side of the form



A natural-edge walnut (*Juglans* spp.) bowl from wood cut in the late season

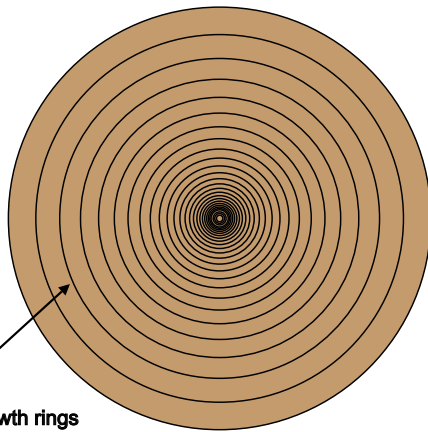
Seasonal considerations

The season in which a tree is felled has an effect on its characteristics when turning and dried due to the amount of water it will contain. Two seasons in the year cycle of a tree are the growing season, early growth being spring, summer into autumn when the temperature is warmest with the sap and moisture levels being higher in the tree and when much of the growing occurs, and late growth occurs from late autumn, winter to early spring when the temperatures are colder and growth minimal. The depths of winter are a dormant time for the tree.

The relevance is that if a tree is felled during the growing season the water levels are high, making it more susceptible to cracking if seasoning is rushed, as well as making it problematic if we want to turn, say, a natural-edge vessel as the bark is far more liable to come away from the wood than stock turned from a tree felled in the late season.

◀ Normal wood and reaction wood

Normal Wood



Concentric growth rings

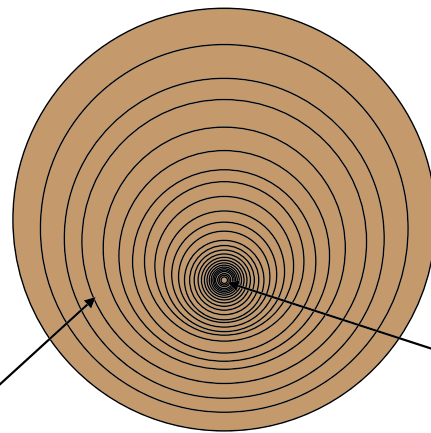
Diagram of normal and reaction wood

For best results we select wood that is stable during turning and seasoning, so here I am concentrating on wood that is void of cracks, shakes, inclusions, knots or rotting sections. All, with experience, can be turned to good effect but to start with we select stock that, when dried, will shrink and move consistently, thus minimising failure through cracking. For this we need to understand about and select normal wood.

You can see in the diagrams that normal wood is where the pith is central with concentric growth rings. This type of growth is achieved in conditions that are consistent, such as the main vertical trunk, and avails us stock that, when seasoned, will move and shrink consistently so we can gauge with some confidence how it will react when drying.

The second example is of reaction wood, where the pith is markedly off-

Reaction Wood



Pith offset

Eccentric growth rings produce inconsistent shrinkage and movement during seasoning

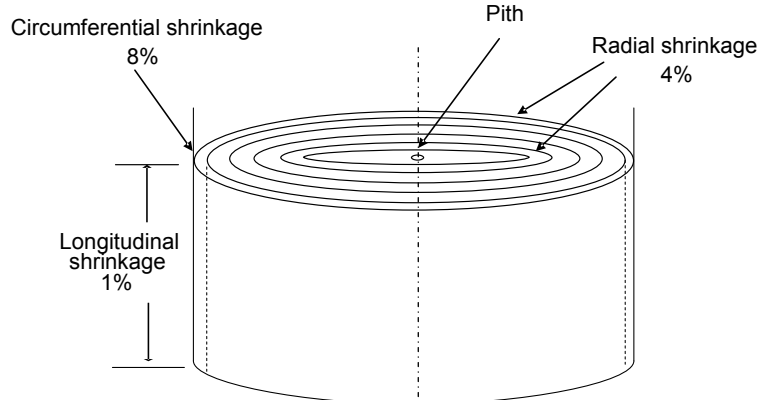
centre and growth rings are eccentric due to forces such as compression through weight, such as a sideways-growing branch, or resistant to movement, such as a tree on the coast that grows leaning to resist the strong winds it is subjected to. The latter results in uneven distortion during seasoning and greatly raises the risks of failure through cracking so, to start with, we steer clear of it.

Shrinkage

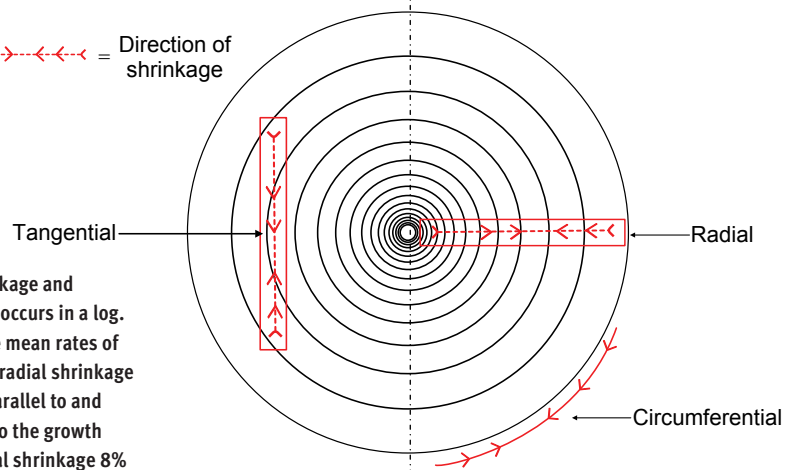
We now have our normal wood so let's look at shrinkage. As a simplistic explanation, as wood grows, water and nutrients are sent from the roots up around its layers from the ground with the leaves being where sunlight, water and carbon dioxide are converted to food and oxygen. Once the tree is felled the moisture in the wood escapes, first from the outside layers, causing these to shrink while moisture deep inside remains, causing outward stresses often resulting in cracking. So, if you are to use unseasoned wood, you must understand about shrinkage and the direction in



Cracking due to internal stresses created by uneven drying



Direction of shrinkage



The mean shrinkage and movement that occurs in a log. Here we see the mean rates of shrinkage with radial shrinkage 4% occurring parallel to and perpendicular to the growth rings, tangential shrinkage 8% seen readily in the seasoning of a roughed cross-grain bowl blank

and amount by which it will occur, or we cannot hope to gauge how it will react.

Wood is hygroscopic, meaning it absorbs and expels moisture directly in relation to the moisture in the atmosphere. The classic back door jamming in the wet weather due to moisture swelling the fibres is a prime example, while the same door will shut easily in a hot, dry summer as the moisture is drawn out. It is worth pointing out that all different timbers have different shrinkage and movement rates. I have shown the mean rate in the diagram, but there are many books, resource websites and charts online that give you information about movement shrinkage rates, workability, what the timber can be used for and so on. Please do explore further for yourselves the specific timber you are wanting to convert or use.



Roughed-out ash (*Fraxinus* spp.) bowl showing how it has been cut – the centre area of the tree is uppermost – and how the wood has moved as it dries

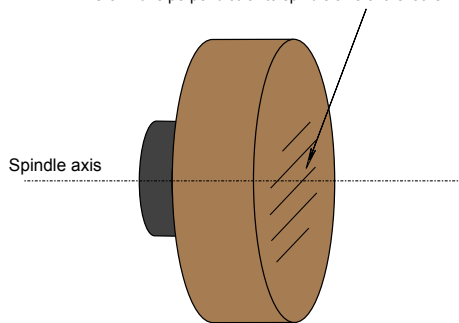
Blank orientation

So we have a suitable section of wood, but what are the options when processing for our projects? Wood is oriented on the lathe in two main ways – cross grain, where the grain of the wood runs perpendicular to the spindle axis of the lathe as for standard bowls and large platters, and parallel grain, also

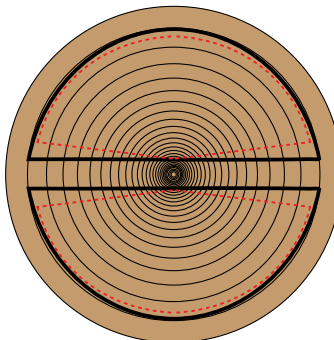
known as spindle/end grain turning, where the grain of the blank runs parallel to the spindle axis of the lathe as for turning stair spindles, goblets, end grain boxes and bowls, to name a few. From these two orientations we can process our blanks depending on the desired project.

Cross grain orientation

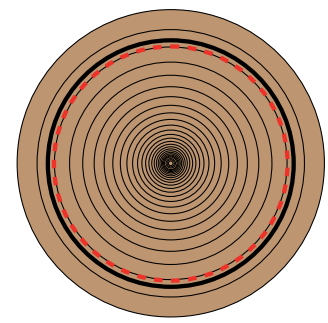
Grain runs perpendicular to spindle axis of the lathe



Small Log

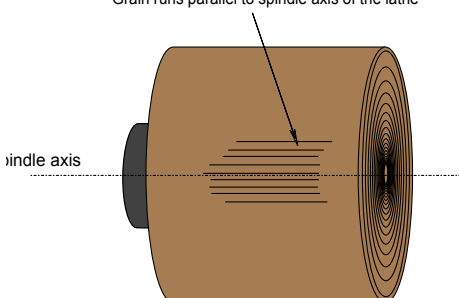


Log

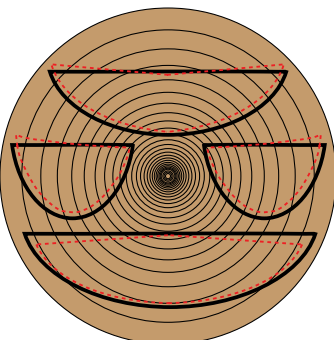


Parallel grain orientation

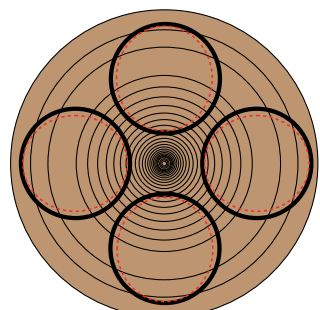
Grain runs parallel to spindle axis of the lathe



Trunk



Trunk



— = Bowl

- - - = Shrinkage

Grain orientation for typical turned work

Possible cross-grain bowl blanks in a log or large trunk indicating the likely movement that will occur during seasoning

How end-grain bowls and similar projects could be processed with the anticipated shrinkage of the blanks during seasoning

TOOLS FOR PROCESSING



Tools for processing timber

The number of tools required to process turning blanks is small and reasonably low in price. Faceshield, sawhorse, chalk, lump or sledge hammer, splitting wedges. To this I will add an electric planer. These tools alone are enough to get started for processing blanks.

Also shown here is the most used machine in my workshop after the lathe – the bandsaw. The bandsaw is efficient and accurate when used correctly and is well worth investing in as it saves time and material. For me, it is commercially indispensable. When

using hammers, wedges, axes and machines of any kind always wear full face protection and follow all manufacturers' safety guidance. I will also add to this list a power planer. This helps with flattening a face for good registration.

The simplest method to process a blank for a cross-grain bowl/blank using hand tools is to just cut a log to the same length as diameter split down the middle, cut off the corners and mount on a faceplate, making sure the face is flat enough for good registration. This can be simply achieved by planing the face flat using a hand planer with blank physically clamped.

Processing logs

Let's look at the stages of processing a large cherry log that has been felled for a couple of years and was cracked in several places prior to sealing with PVA.



Using these cracks, a wedge is used in the log to split down through its length



Turning it on to its side and supporting with wood wedges to stop it rolling, I then work along the splits



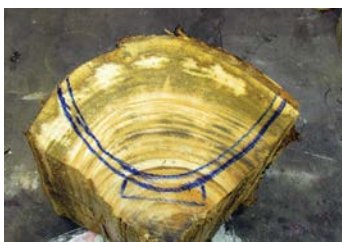
Ending up with three sections to work with



Next the sections are cut to a more manageable length on a sawhorse with bowsaw. You can use these sections for spindle grain or bowl-grain oriented blanks

CROSS-GRAIN WORK

If you want faceplate work, these sections will yield both natural edge or flat-topped items, depending on how one orientates the section of wood



A natural-edge bowl



Flat-rim bowl. Note: you will also get a couple of spindle blanks from this section



If you don't have a bandsaw a simple option is to clamp the blank as shown and, with a mallet and hatchet, cut down the line



Once complete, the blank is clamped into a vice and an electric hand plane used to flatten the face. Note use of the quick-release clamp to hold larger sections



You can now continue by cutting off the corners with a handsaw, but here the bandsaw comes into its own for further processing to cut the corners off to produce an octagon. Cutting tight circles on a bandsaw can wear one side of the blade set, making it difficult to cut accurate straight sections

Spindle and end-grain blank processing/jigs

Stock for parallel/end-grain blanks can also be processed by hand with the hatchet, but here I am also showing how various homemade jigs used on the bandsaw can be used to support rough-cut and round sections for cutting.



For round logs I use a V-block jig that has teeth by way of nails inserted into the face of the V-sections to grip the round or odd-shaped sections for cutting



Next a re-saw jig is used to hold the stock for cutting in half or flat on one side



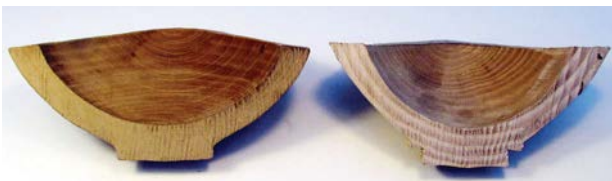
Cutting the remaining sides and finally a third V-block jig is used for cutting the corners off the blank prior to turning, which saves time when turning them later

Storing blanks

The next process is to either rough-turn, turn to finish or to seal the blanks. To leave solid for seasoning, I simply seal the end grain areas of the blanks with PVA and store them in a cool, draft-free location until dry. The picture shows the cherry blanks and others sealed with PVA, separated with sticks until the PVA is dry, after which they are stored in a cool place in the workshop. Seasoning time relates to the thickness and density of the wood as well as the atmosphere it is dried in, a rough guide being one-year air drying for every 25mm thickness, plus a year. Check the blanks periodically for cracking and any sign of worm or infestation. If cracks appear, move the wood to a cooler location and/or make sure draughts are kept to a minimum.



Sealed blanks with sticks to allow airflow during the drying process



Rough-turned bowls showing the wall thickness and movement

Speeding up the process

Seasoning can be speeded up by using kilns, chemicals/osmosis and microwaves, to name a few methods. I keep processes simple and either rough-turn a piece leaving the form over-size to allow for movement and return it to finished shape once seasoned, or take a wet blank and turn it to completion in one go, leaving an even thin wall thickness, accepting that the piece will distort as it dries.

A cross-grain blank has tangential shrinkage/movement of 8% as a mean of most timbers. So when rough turning, leave the wall thickness about 15% of the vessel diameter. This speeds up the seasoning time due to most of the material being turned away, but also leaves enough material for turning to final shape once seasoned. A 300mm-diameter bowl needs a wall thickness of 45mm. The wall thickness needs to be consistent from rim to the base or the wood can dry at different rates, raising the risk of cracking. The pictures of the two bowls cut in half above show cross-sections of seasoned rough turns. The warping is shown in the rim. If there is a slight variation in thickness in the wall, as in the rim of the bowl on the right, it will be OK if the seasoning is slow.

Seasoning roughed and thin-wall bowls

To season a rough-turned thin-walled, finish-turned bowl/vessel without using PVA, place the item into a plastic bag and weigh it using kitchen scales, then write the weight on a piece of card. Scrunch up the bag, leaving some space inside, and attach the card for reference. Every two to three days remove the bowl and reverse the bag so the moisture condensate on the inside can dry. Place the bowl bag into the dry bag and scrunch up, repeating until the inside of the bag remains dry. Then leave the top open, keep weighing until it remains the same for two weeks – the percentage of moisture in the bowl is now in equilibrium with its surroundings. Take into a cool place in your home and allow to settle for a couple more weeks, at which time it can be finish turned.

For a vessel turned thin to finish I use an almost identical technique with the addition of soaking the vessel with a very thin finishing oil or one thinned down to be

an almost water-like consistency. The bag on this occasion is left open at the top with all other procedures being repeated as before. Once dry, a Danish oil finish is applied, allowed to dry and buffed.

Processing sections of wood we obtain or are given is a useful skill to have. It minimises wastage and costs. I hope that this short introduction to the sourcing and processing of unseasoned wood will start you on your own journey. ●



Paint the end grain of blanks with PVA glue, so they dry more evenly without cracking

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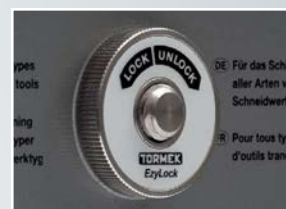
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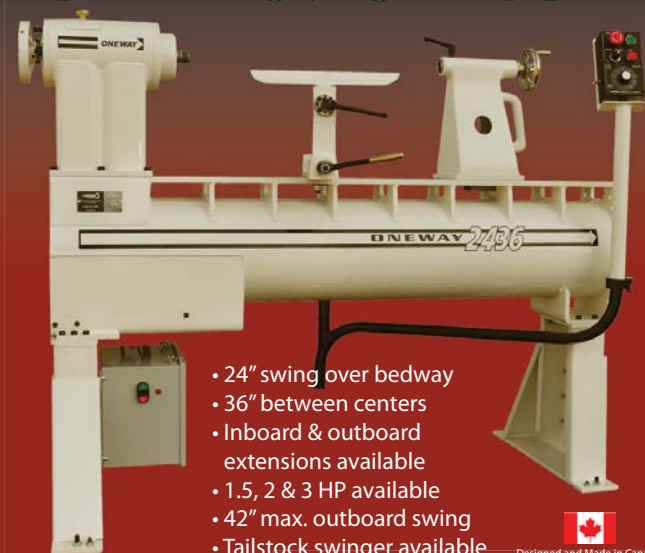


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We try to give accurate details on forthcoming events. Please check with organisers for up-to-date information if you are planning to attend any of the events mentioned.

Art by Women Woodturners Featured in Travelling Exhibition

'Turnabout: Women at the Lathe' celebrates both known and new women's voices in the traditionally male-dominated field of woodturning. The twenty-seven sculptural pieces in the exhibition were created on the wood lathe by artists from the United States, England, Wales, Canada, and Taiwan, ranging in age from their early twenties to their 80s. The show will run at three respected craft institutions: The Appalachian Center for Craft, Smithville, Tennessee; the AAW Gallery of Wood Art in St. Paul, Minnesota; and The Arrowmont School of Arts and Craft in Gatlinburg, Tennessee.

The exhibition was organized and funded by the Women in Turning committee of the AAW, and curated by artists Dixie Biggs and Sharon Doughtie, and AAW curator, Tib Shaw. The show features work by women with everything from a few years to more three decades of experience. Pioneers of the field include Indianapolis sculptor and former American Woodturner editor, Betty Scarpino, and Washington State painter, textile artist and sculptor Helga Winter, whose work appears next that of young artists Janine Wang, Kailee Bosch, and Katie Mae Adams, who are students in BFA and MFA programs.

The work in the show is created all or in part on the lathe, a specialized woodworking machine that holds and spins material while it is carved with sharp tools.

Although still a small percentage, the number of women turners has been steadily increasing. A number of women-centred woodworking courses and workshops have opened in the last few years, offering a non-intimidating 'jumpstart' for beginners who may not have been exposed to tool use before. Facebook groups like 'Women in Turning' also offer technical support, feedback, and a sense of community to members, and regional face-to-face get-togethers are increasingly popular. Katie Mae Adams, an MFA student at the University of Alabama, who notes "I



Grabbable Table by Janine Wang

PHOTOGRAPH COURTESY OF JANINE WANG



Letting The Light In by Helga Winter

PHOTOGRAPH COURTESY OF HELGA WINTER



Green Dragon by Liz Kent

PHOTOGRAPH COURTESY OF LIZ KENT

think that it is the perfect time to be an artist, especially a female one. Artistic communities are being created between people from around the world and technology allows us to share information, videos, advice, etc. with each other. Being an artist is no longer a solitary profession unless you want it to be."

Venues:

Appalachian Center for Craft (ACC)
in Smithville, Tennessee,
15 January – 12 March 2018
www.tntech.edu/craftcenter/exhibitions/
Contact: Debra Rusinsky, druzinsky@tntech.edu

AAW Gallery of Wood Art, St. Paul
Minnesota, 3 June – 29 July
www.galleryofwoodart.org
Contact: Tib Shaw, tib@woodturner.org

Arrowmont School of Arts and Crafts
August 10 October
www.arrowmont.org/visit/galleries/
Contact: Kelsey Dillow, kdillow@arrowmont.org

For further information about the AAW
visit: www.woodturner.org

20th anniversary

In March 1998, Teesside Woodturners' Association was founded by two friends, Jon Woddy and Eric Hansell. After advertising in the local newspaper, an initial meeting was held in a hall in Middlesbrough and was attended by over 20 people and Eric elected as Chairman and Secretary respectively. Jon moved house to Cumbria where I believe he is still a member of the local club there.

Eric continued as a TWA committee member until about 2008 and sadly passed away in 2016. We still have a handful of members who joined within the first two years and are still regular attenders, including the author of this article, who joined in October 1998.

In May 2010 H.R.H. Prince Charles, during a tour of Teesside, visited us and we were invited to put on a short demonstration and exhibition.

We meet in Hemlington Recreation centre, in North Yorkshire, and our current membership is 105. We average about 55 members per night. We meet every Wednesday evening, most of them 'hands on' evenings where we have ten lathes in operation by experienced turners



or learners receiving help from more experienced members. During the summer months members attend numerous country shows with a display of work and demonstrate to show people what turning is and hopefully encourage them to have a go.

Web: www.teessidewoodturners.com

AWGB Revolutions Woodturners Newsletter Archive

Most people are interested in the history of clubs and organisations and the Association of Woodturners of Great Britain has uploaded to their website all of the AWGB newsletters from issue 1 – created in 1984 to issue

119 December 2016. This is a rich archive seeing what people were commenting on, what was happening and how the newsletter has changed since it launched. Issue 44, published in February 1998, has an interesting article by Peter Hemsley about the internet and how it can be helpful to the AWGB and turners.



Web: www.awgb.co.uk

SHOWS AND EVENTS

Midlands Woodworking & Power Tool Show

When: 23-24 March 2018
Where: Newark Showground, Nottinghamshire, NG24 2NY
Web: www.nelton.co.uk/midlands-woodworking-power-tool-show.html

Yandles & Sons woodworking show

When: 13-14 April 2018
Where: Hurst Works, Hurst, Martock, Somerset, TA12 6JU
Web: www.yandles.co.uk/event/1-yandles-woodworking-show

Makers Central

When: 5-6 May 2018
Where: National Exhibition Centre, Marston Green, Birmingham, B40 1NT
Web: www.makerscentral.co.uk

Utah Woodturning Symposium

When: 10-12 May 2018
Where: UCCU Events Centre, 800 W University Parkway Orem, UT
Web: utahwoodturning.com

Woodworks@Daventry 2018

When: 11-12 May 2018
Where: Daventry Leisure Centre,

Lodge Road, Daventry, NN11 4FP
Web: www.tudor-rose-turners.co.uk

Weird & Wonderful Wood

When: 19-20 May 2018
Where: Haughley Park, Wetherden, Nr Stowmarket, Suffolk, IP14 3JY
Web: www.weirdandwonderfulwood.co.uk

The Toolpost Open House

When: 2-3 June 2018
Where: Unit 7, Hawksworth, Southmead Industrial Park, Didcot, Oxfordshire, OX11 7HR
Web: www.toolpost.co.uk

UK & Ireland Woodturning Symposium (UKIWS)

When: 30 June-1 July 2018
Where: Doubletree by Hilton hotel, Paradise Way, Walsgrave Triangle, Coventry, CV2 2ST
Web: www.ukiws.co.uk

Woodfest Wales

When: 28-29 July 2018
Where: Caerwys, North Wales CH7 5BP (A55, J31, signposted from J31)
Web: <http://bit.ly/2FRTu8S>

Norwegian Woodturning Cruise

When: 20 August-1 September 2018
Where: Starting at Stavanger, Norway
Web: www.woodturningcruise.com

Yandles & Sons woodworking show

When: 7-8 September 2018
Where: Hurst Works, Hurst, Martock, Somerset, TA12 6JU
Web: www.yandles.co.uk

Bentley Woodfair

When: 28-30 September 2018
Where: Bentley, Halland, East Sussex, BN8 5AF
Web: www.bentley.org.uk

AWGB Seminar

When: 5-7 October 2018
Where: Yarnfield Park Training & Conference Centre, Stone, Staffordshire
Web: www.awgbwoodturningseminar.co.uk

Woodworking and Powertool show

When: 26-27 October 2018
Where: Westpoint Centre, Clyst St Mary, Exeter EX5 1DJ
Web: www.wptwest.co.uk



From organic farmer to turner

Mark Baker talks to Howard Lewis about what made him take up turning

I live in the beautiful mid-Wales countryside with my wife Helen and unruly West Highland terrier, Tommy. I was part of a family organic farm for many years until I decided to take a different path. I now spend most of my time working with wood.

I began turning around 2008. The reason for my starting was mainly due to stressful circumstances. I worked on a livestock farm and cattle in our area had regular TB inspections and had always tested clear. Sadly, that year, a significant number of our herd tested positive and, as a result, had to be culled. The stress on people and cattle alike was shocking. That unfortunate experience changed me as a person in many ways, none

more so than by making me question whether farming was the occupation I wanted to have for the rest of my life.

I was aged about 40 at this time and it was during this period that a particular conversation with a close friend made me realise that my interests probably lay elsewhere. I wanted to continue to work within nature albeit in a slightly different way. To that end I explored woodworking as a natural progression.

My love of trees made me think about working with wood. I opted to explore woodturning because I had seen other turned work and was inspired by it. This decision caused me to gradually reduce my time on the farm and move into turning, also, more recently,

woodwork over the intervening years.

TURNING

My only previous experience of woodturning was making the customary bowl in school during the late '70s. I wanted to learn quickly, so I bought a few books, DVDs, etc., to glean as much knowledge as possible. I found the DVDs in particular very helpful because it was like having a personal demo in your home.

I have built up my turning workshop over time, but I spent a lot of money on four major things to start with. They were a lathe, bandsaw, sharpening set-up and dust extraction. These would be doing a lot of work so I opted to buy well straight away. The tools, chucking and so on



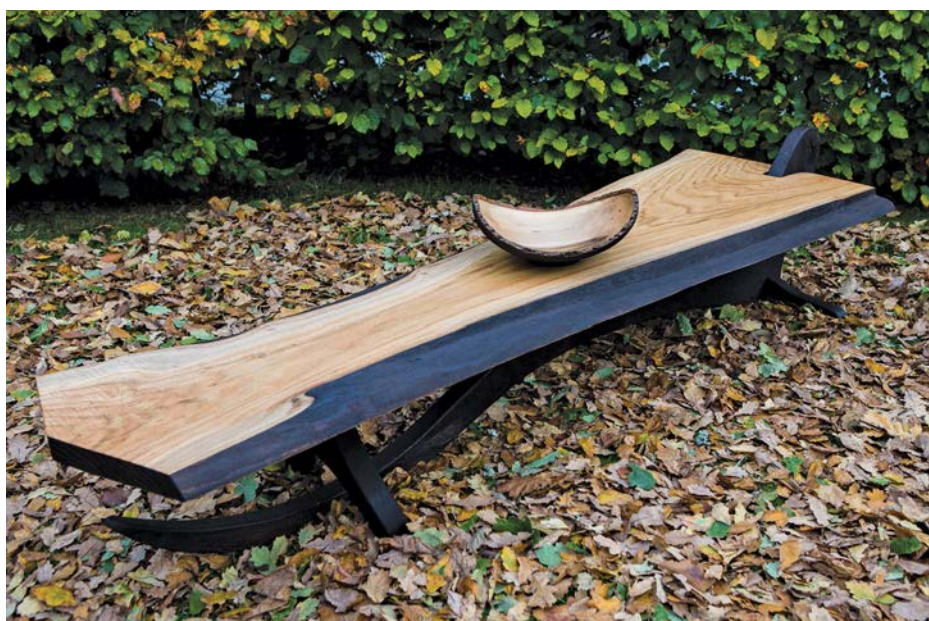
Turning one of my latest bowls

have continued to be built up over time.

The first thing I turned on my own was a bowl. I developed my skills quickly while still having an income from the farm job so I was able to develop some financial security.

I continued to learn from the DVDs and books and a few months after I started I joined a local turning club and watched many gifted turners give excellent demonstrations.

The person who has, without doubt, made the biggest impression on me was Tobias Kaye. His use of the traditional ground bowl gouge was a revelation. The man's a true master. I also really admire the work of Nick Agar and Mark Sanger. I recently saw

Scorched ash (*Fraxinus excelsior*) bowl with stud decorationScorched-edge red oak (*Quercus robur*) table with sculpted supportsWater droplets in sycamore (*Acer pseudoplatanus*) with secret coloured decorative effect

the work of French artist Pascal Oudet and all I could think was, wow!

MISTAKES

Mistakes do unfortunately happen. Like most people I've made my fair share, but so long as you learn from them and do your best not to repeat them, just put it down to experience and move on. The one incident that springs to mind was early on in my turning journey. I had a large, out of balance bowl blank on the lathe and switched it on without first checking that the variable speed switch was turned down. B****y hell – I thought a new rocket launch pad had been set up in my workshop. Needless to say, I didn't make that mistake again.

ARTISTIC INSPIRATION

I've always been far more interested in the artistic aspect of turning than the utilitarian, practical side. I like to experiment with textures and colours, plus other materials such as leather, nails, metal etc. I particularly like the effect of scorching, fuming and bleaching on native woods such as oak and ash, and often incorporate one or more of these techniques into my work. In terms of future projects, I'd like to turn large wall hangings, sculptural pieces and pretty much do what I'm doing now. I enjoy bespoke work and welcome the challenge of designing and making a one-off piece.



Scorched natural edge bowl sitting on a burr oak (*Quercus robur*) table

No one likes to accept defeat, but with so much experimentation there are times when the only course of action for a project is to walk away. Spalted beech (*Fagus sylvatica*) is the species of wood that I find is responsible for more obscurities in the workshop than any other. Sometimes no amount of cellulose sanding sealer or the like can rescue a particularly soft, punky area, so I just leave it and move on to the next project. I know when to quit.

Large bowls and platters are the types of turning that I most enjoy, so mainly faceplate work. I do some spindle turning, (usually vases and lamps), but so far have

found it difficult to acquire the necessary patience required to make hollow forms. All that cleaning out of shavings and constant measuring, at this time, is not for me, but maybe in the future I will try some more. It does, however, make me appreciate even more the work of other turners who specialise in this field.

CHALLENGES AND DIVERSITY

During the past 12 months or so, I've begun making furniture – mainly bespoke tables and the occasional sculptural pieces alongside my turned work. I did this because I love working with wood and I am a realist and understand that



Oak table with 'walking feet' supports



Jarrah burr (*Eucalyptus marginata*) bowl, 700mm wide x 75mm deep

one has to be adaptable in order to create work for sale. I also do some metalwork.

I enjoy both the woodworking and woodturning aspect of making, and intend to pursue both in future projects. This, combined with the possibility of including other materials and textures in my work, means that the design options are virtually limitless. It also opens up more options for me to sell work. It's quite exciting really. I also intend to offer woodturning tuition in the near future.

LIKES

- I really enjoy seeing a pleasing form appear before my eyes as the bowl gouge traverses the toolrest.
- The distinctive whistling noise shavings make as they exit the flute of a freshly sharpened bowl gouge.
- The transformation of a finished piece of wood as oil makes contact with it for the first time.
- The sense of accomplishment when a troublesome project turns out even better than expected.

DISLIKES:

As with most other turners, I dislike dust with a capital D. It is an absolute pain in the proverbial, but a necessary evil. I've suffered with allergic rhinitis, probably

as a consequence of farming for years, and as a result my nose is very sensitive. Therefore I would advise all turners new to the craft, irrespective of the budget they have, to not cut corners on dust extraction and PPE in the shop. After all, what price is a new pair of lungs?

My one major bugbear in the turning world regarding tools is scrapers. I've lost count of how many pro turners I've heard criticising the use of scrapers. I personally don't agree. I think it stems from the thought process that, if someone isn't very proficient with a bowl gouge, then what sort of a mess will they make with a scraper. I agree with this to a point, especially with a traditional scraper where you have to hold the handle up in the air for it to work, thus ending up fighting gravity which can create all sorts of tear-out.

However, when it comes to negative rake scrapers, I disagree. In my experience of turning large, deep bowls, I've frequently found that once the final shape has been achieved with a bowl gouge, heavy negative rake scrapers come into their own. This is especially true on timber such as spalted beech, where the structure of the wood may vary greatly due to punky areas etc. I've found that so long as the toolrest is smooth, the scraper is

regularly sharpened with a discernible burr and it is held horizontally with a firm, but light grip, the results are great. No tear-out in sight – sometimes even a finer finish than the bowl gouge can achieve and fine wisps of angel hair. They are invaluable tools that bridge the gap between bevel rubbing marks and sanding. What's not to like?

RECOMMENDATIONS

As I've already said, for those who intend getting into turning, I would suggest their first priority, without doubt, should be good dust extraction and PPE. Next join a club, get some books and DVDs, take tuition if the budget allows and study.

When it comes to YouTube videos, proceed with a bit of caution. There are some good turners out there, and some not so good. Just remember that the vast majority of top turners are not demoing on the internet. Buy a few decent quality tools from the main manufacturers and learn how to use them proficiently. Also, and this is something I often see overlooked, get a decent sharpening system with jigs and learn how to sharpen your tools properly. The only thing you'll make with a blunt tool is a mess.

I would say that the best tip I've seen

was from Irish turner, Glenn Lucas. I think it was in a previous edition of this magazine, though I'm not sure. In a nutshell, he explained how to cut an extremely precise spigot or recess using a bedan tool and an old scraper ground to match the exact profile of your dovetail jaws. Its significance on small bowls/platters wasn't that noticeable, but the almost engineering style accuracy it provided on large forms meant that it really came into its own. Without a doubt it was, and still is, the best method of cutting a spigot/recess I've seen and used.

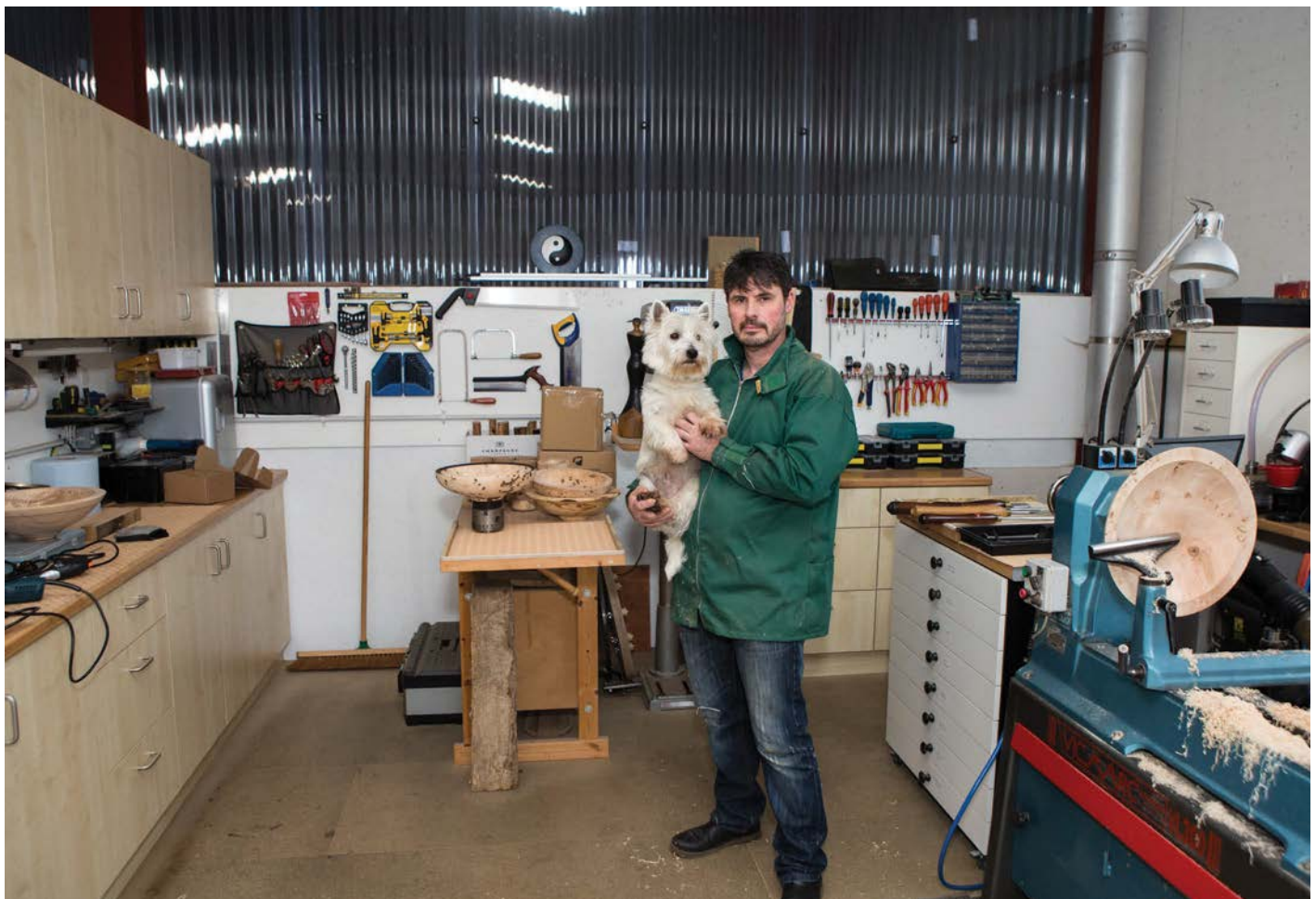
THE FUTURE

To make a success of my new venture I know I need to be better at marketing myself and my work and using every available opportunity to do so. I know some luck comes into play, but you can make your own. It also helps to be a bit of an opportunist and be prepared to seize the moment as and when it arrives. I do think one needs to keep an open mind when it comes to willingness to adapt and consider more diversification as far as what to make in order for this new venture to succeed. I will certainly give it my best attempt.

Web: howardlewis-maker.com ●



Oak vase with scorched rim



In the workshop with Tommy the Westie

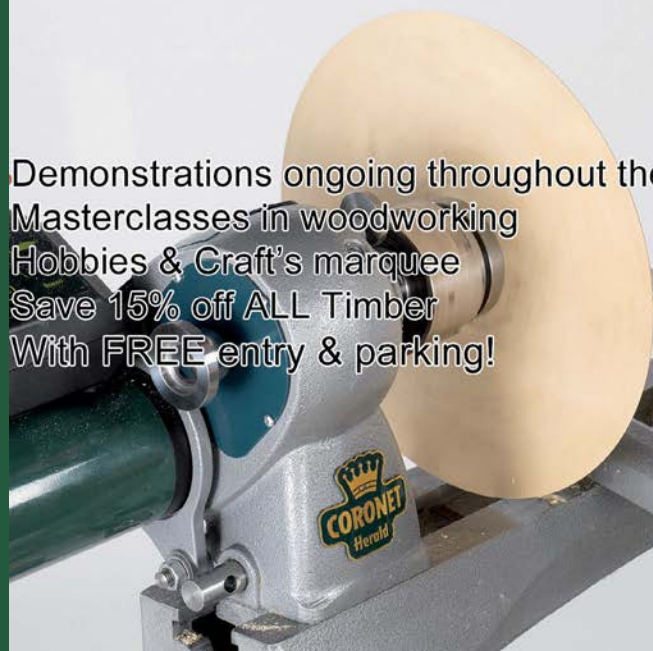
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Pedestal bowl

Pat Carroll makes this textured, elevated bowl



Many woodturning tools have been designed and developed over the years.

Some are efficient because of their design and ability to help increase productivity, then there are the tools that save wood – ‘coring systems’. The aim of this project was to core the centre of the bowl and use it for the pedestal to elevate the bowl. I wanted to add some tactile elements so opted to use a texturing tool for the rim, centre bead and foot. Using the same texture on three areas creates the illusion that the bowl is all one piece.

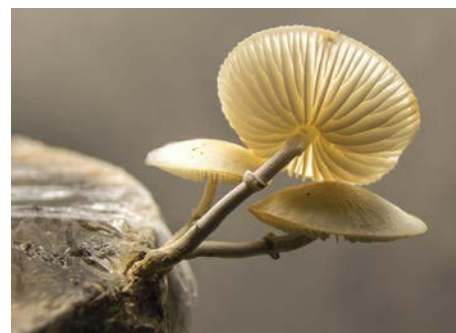
When I received this beech (*Fagus* spp.) it had minimal spalting, so I used a method that has been very successful for me in encouraging spalting. I wrap wet pieces loosely in shrinkwrap and store them in a cool, dark area to encourage the spalting process. For health and safety reasons this is not done in the home or main working environment. I leave space between the pieces and this help any spores to

circulate to do their job of creating the spalted areas woodturners yearn for.

As time went by these pieces needed to be turned or they ran the risk of being lost by developing rot rather than the coloured effects I needed. There is a fine line between achieving colour and reasonably solid wood or ending up with punky, soft, rotten areas.

For this project a section of beech I had in the pile seemed a good choice. The first thing to catch my eye was the beautiful mushroom growing from a small area uncovered, but my main concern was that I had left it too long. On examining the wood, I had areas of soft wood – not big areas, but some – and some cracks to deal with.

This was a rather substantial piece of wood and I had to decide whether it should be dumped or could be worked with carefully without breaking apart when turning. After carefully checking and probing, I decided that there was enough structural integrity to give this piece a try.

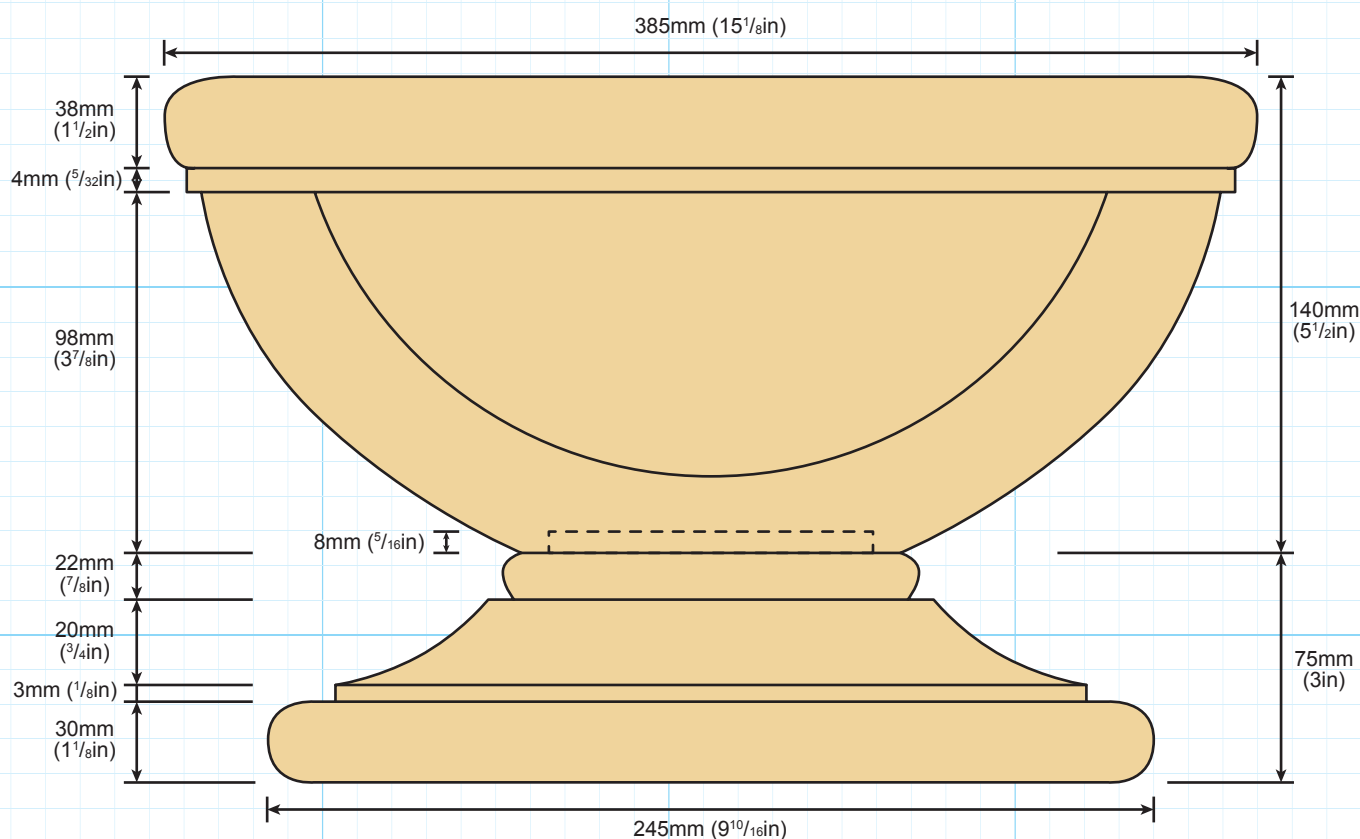


The blank with fungus growing from it

I decided to mount the wood on a faceplate using screws thick enough to provide a good hold without snapping and not so long as to penetrate the wood too far. The screws held well in the timber.

Sharp tools are always a must, but for this piece sharpening was carried out at far more regular intervals to minimise grain tear-out. Remember to use the tailstock revolving centre for support as long as you can when turning.

PHOTOGRAPHS BY PAT CARROLL



TOOLS AND MATERIALS

- Personal and respiratory protective equipment
- Bowl gouge
- Parting tool
- Faceplate
- Chuck
- Revolving ring centre
- Texturing tool
- Coring tool/system
- Drill and sanding arbor
- Abrasives
- Adhesive
- Black spray finish
- Clear finish of your choice.
- Timber size 400mm x 150mm

1 Mount your faceplate-oriented bowl blank on the lathe. When affixed check the piece is secure.

2 Bring up the tailstock revolving centre for support. Check your blank again for any faults missed that might cause problems. Once happy, set a low lathe speed, about 450rpm, and rough shape the wood with a bowl gouge. My blank had a higher moisture content than I would have liked for one-hit turning to finished piece. I would usually rough turn it and let it dry before finishing, but this shape allows for some movement without it looking wrong.





3 Once the blank is balanced and roughly shaped, cut a spigot that is more than a third of the overall diameter of the blank then refine the shape some more, leaving enough timber at the top area to create the rounded-over rim later. Work from the lowest tailstock end towards the rim to ensure you are cutting with the grain to help minimise tear-out. Stop the lathe regularly and check the shape and condition of the timber. I found that there were some very soft areas of wood.

4 Since the piece is going to be cored out, the spigot required is large in order to minimise the risk of it shearing during the coring process later. Aim for a minimum of a third of the overall diameter for a spigot. The spigot will be removed later as a smaller recess will be created to accept the spigot from the pedestal foot. Refine the spigot to the size and shape required and check for an accurate fit in the chuck before removing the blank from the faceplate.

Coring

5 Now mount the chuck and bowl on the lathe and check everything is secure. The centre of this blank, as mentioned earlier, will be the pedestal base and cored out. The coring system I am using is the Kel McNaughton unit, but other very good systems are also available. The cutter and guide system is lined up to take the shape of core that I require. For this system the cutter must be exactly on centre for cutting at the middle of the blank when the handle is slightly raised to rest on the upper anti-lift bar. Never allow the cutter to cut below centre. Before cutting, make sure the tip is freshly sharpened.

As this is a large blank, the lathe belt is fitted to the smallest pulley wheel on the motor for maximum torque (not speed) as coring systems are demanding on power from the motor. The lathe speed will be about 400-500rpm.

6 The desired wall thickness is marked out for reference purposes. The cutter blade is curved and suitable for the blank size, but an alternative to using a curved blade would be to use a straight blade. This will result in a cone, but would give you a nice section with which to cut a pedestal or another bowl from. Once the coring system is correctly aligned and you have a low speed setting selected, check that the bowl is secure, if possible, bring up the revolving centre in the tailstock for support, and gently arc the cutter into the revolving wood.



7 Coring is done very gradually with the blade regularly extracted to clear out shavings so as not to clog and jam the cutter. Taking small cuts and removing in stages reduces the risk of jamming the tool in the wood. Follow the manufacturer's instructions for the model of tool you choose. A core this size will have significant shavings, so that alone is a great saving on time spent cleaning and disposing of waste. Make sure you do not cut all the way through to the centre and release the blank. Instead, when you get about 40mm or so from the centre, stop the lathe and press against the edge of the core with your fingers at 90° to the grain direction and see if it will snap across the 40mm spigot at the bottom. If it does, great. If it doesn't snap, reduce the central spigot a bit more, try again and repeat until it does. If you fancy trying this project but do not have a coring tool, you can create the lower half using a separate section of wood. Also, the project doesn't have to be done at this size. Make your own project as large or small as you choose.

Shaping and texturing the rim

8 Take your freshly sharpened bowl gouge and start gradually shaping the rim, using light cuts until the desired shape is reached.

9 With the turning of the rim complete, start sanding through the grits – 120, 180, 240, 320 and 400.

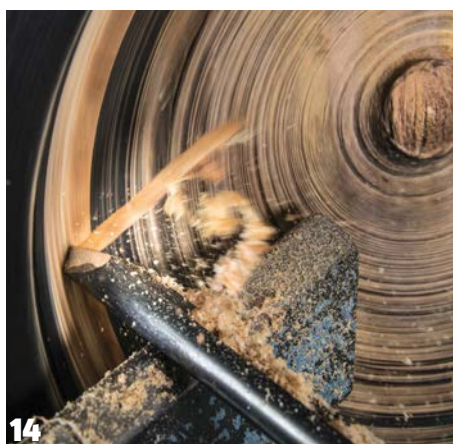
10 The texture I wanted to add can be created with a texturing tool. This tool has a free-spinning toothed wheel which, when presented at different angles to the spinning work, creates different patterns. Due to the wood being soft in areas, I wanted to create an indented pattern like an orange-peel effect rather than a striated pattern. To do this, the wheel is presented vertical at 90° to the work, pressed against it and slowly traversed across the rim area until the required effect and density of pattern is achieved.

11 With the texture completed, a very light sanding with 400 grit removes any fibres raised with the texture tool. Several light coats of ebonising lacquer are applied, leaving adequate drying time between.

Refining the external and internal shape

12 Now remove the bowl from the chuck, mount a flat neoprene face disc of thick ply or MDF on the lathe, place the bowl rim against the disc, bring up the tailstock revolving centre and secure your bowl blank in place.





13 With the speed set to about 5-600rpm, remove most of the spigot, leaving a stub of timber under the revolving ring centre. Then, cut a recess of a size to suit the spigot that will be created to hold the core-out pedestal section. Now refine the external shape, being careful not to damage the rim area. The reason for doing this now is that any lacquer overspray is cleaned off, leaving the clean, natural wood area required. Once shaped, sand it then remove the piece from the lathe and carve away and sand the remaining nub of timber left from underneath the revolving centre.



14 Secure the bowl and hold it in the chuck in the recess. Make gentle cuts with a freshly sharpened gouge from the inner lower rim area down to the centre of the bowl to clean up and shape the inside, removing any black overspray to leave a natural wood interior and a defined black textured rim. Now sand, remove any dust and apply a clear lacquer.

15 I chose clear spray lacquer, because it can be applied to the natural timber as well as the black rim area. Apply your first coat inside and out and let dry. Once dry, denib and apply a second coat. Repeat this process until you have created the desired look.



Creating the pedestal base

16 Remove the bowl section and mount a neoprene-faced disc on the lathe. Place the flat face of the core-out, which will be the pedestal against this and bring up the revolving ring centre for support. Once secure, check it is running as true as possible.

17 Measure the size of the recess of the main bowl just created and cut a spigot this size at the tailstock end. Now turn the top bead just below the spigot, shape the body form and then create as much of a bead profile as you can near the base. Once cut, hold the pedestal in the chuck by the spigot, refine the base area bead form and create a concave area on the underside, what will be the base area, so the bead sits on a surface without wobbling. Once cut, sand and texture the bead near the base.

18 Remove the bowl from the chuck, mount the neoprene-faced board on the lathe and fix the blank between centres, as in picture 17. Texture the top bead and sand to remove any whiskers. Now, spray piece with a few coats of black lacquer. When dry, refine the area between the beads and sand. Now apply a coat of clear lacquer. Once dry, glue the base into the bowl section and let it dry. ●



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Pro shop tips

Andy Coates offers tips and techniques that make turning safer, simpler and consequently more enjoyable



When you turn wood full-time for a living, doing small-batch work, restoration, one-off speculative pieces, teaching and demonstrating, one of the most frequent conversation openings you hear is: 'How do you...' Often the subsequent portion of the question is a surprise – it might be something you hadn't considered could be a problem for people, but clearly is. My own feeling about asking questions is that there are no stupid questions. If you don't know then you don't know, and asking is the most sensible approach to knowing. It's not asking that is stupid. And there are people who don't or won't ask, as if in the asking they might diminish themselves in some way. Nobody knows it all. And those who might

know slightly more than the next person acquired that knowledge by looking, experiencing or asking. We are fortunate in our small world of woodturning that knowledge is so freely shared – this is how communities should be. It's how they grow.

In that same spirit this article will detail a number of tips I have found useful in the day-to-day work of a full-time turner. Some I was told about, others I gleaned from books, demonstrations or conversations, some are from the internet, and some are just my way of doing something, but all have helped make the job a little easier, quicker, safer and more enjoyable by removing some irksome task.



Ring magnet attached to a standard screw chuck

Tip 1: Initial mounting of thin section cross-grain stock

Screw chucks are incredibly useful holding devices, and people are often surprised at the capacity for holding these simple devices have. The only real problem with them is the depth you have to drill into the blank in order to use them. With a blank cut from a thin board this can preclude their use. What you can

do is use a spacer to reduce the required depth of screw hole. It should be noted that this does result in reduced holding capacity and surety, but we are usually mounting lighter, smaller workpieces when the depth of mounting hole is an issue.

You could simply use discs of plywood, MDF, or similar to act as spacers, but a useful alternative is a large ring magnet. They attach to the chuck magnetically,

which means they don't slip while securing the blank, are easily stored on the headstock of the lathe where they can then serve as a tool holder and, because they are far harder than some of the alternatives, they will not deform and put the workpiece out of true.

You can buy larger ring magnets, but all of mine were salvaged from old magnetrons from microwave ovens.

A local domestic appliance shop may well have piles of scrap magnetrons it would be happy to get rid of. Disassembly is usually an obvious process and the only things you need are work gloves, pliers and flat-head and cross-head screwdrivers. Remember, always make sure work is secure before you switch on the lathe and always use a tailstock as long as you can for extra support when turning.

Tip 2: Reverse-turning thin cross-grain stock

Any project that Tip 1 has helped with is likely to be a project where reverse-turning is a potential issue. There are a number of commercially available solutions, such as Cole jaws and their ilk, but this type of peripheral equipment can be expensive, and unless you are using it constantly it is arguably a waste of money. First turning is often achieved using a shortened screw chuck or by mounting between centres and sacrificing a small amount of stock by turning a shallow tenon. The larger problem is usually how to remount the workpiece to finish the opposite face.

Cole jaws could be used, or a Longworth-style chuck could be made, but there is an underused method from days gone by that I use on a regular basis and it works perfectly – double-sided tape.

A perfectly flat platten is required for this method – I use the chuck waste from a previous project. The larger the diameter of the platten the better the hold, so select the largest diameter block you have. If a waste block isn't available you could make a platten from 15mm plywood and simply turn and glue a tenon to it.

Attach two lengths of double-sided tape to the platten, taking care not to overlap the pieces of tape. Before removing the backing paper the tape should be burnished on to the platten using any

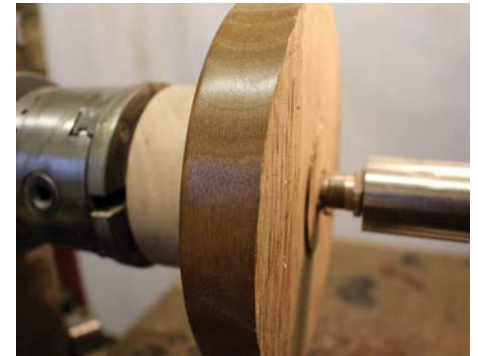


Burnishing double-sided tape on to platten

round-ended object – a tool handle is perfect. Rub the tool over the tape in a circular motion until certain it is affixed.

Bring up the workpiece and the tailstock. Using the ring mark left in the wood by the revolving ring centre align the workpiece to the platten. Getting the workpiece absolutely concentric can be tricky, but with care it is perfectly achievable. Once aligned the quill is wound out and the workpiece attached to the platten. Apply light pressure then remove the tailstock. Rub and push the workpiece to the platten to ensure it is affixed.

With the speed at its lowest, turn on the lathe and increase the speed to about 500rpm. You should now be



Aligning the workpiece using a revolving ring centre in a tailstock

able to turn the face of the workpiece with the certainty that it will remain firmly fixed. Take less aggressive cuts than usual and ensure bevel pressure is directed towards the headstock.

When the turning and finishing are completed a sharp knock on the back of the workpiece will usually remove it from the platten. To remove the old tape from the platten apply acetone or nail polish remover to the tape, allow to soak in, then simply peel it off. Your platten is now ready for another job and the whole task has cost less than pennies.

This holding method is also useful for turning offset designs on the surfaces of small, flat project parts.

Tip 3: Mounting small-section square stock without pin jaws

Mounting small-section square stock for finials, small cupboard knobs, or pen blanks is best done using pin jaws, but we don't all have a set to hand when we need them. We can, of course, just buy a set, but we can also make a set that will mount directly into the standard C-type jaws that most scroll chucks come supplied with.

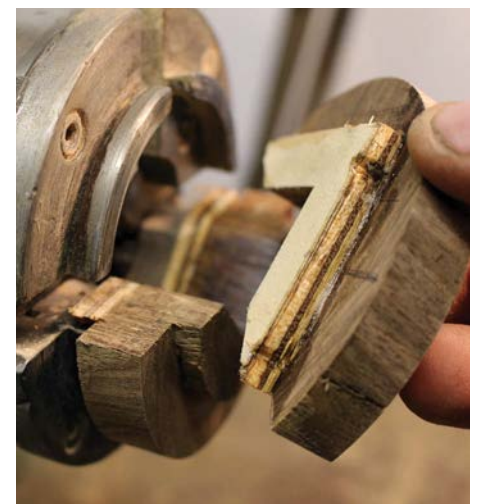
Once again I used a piece of chuck waste and a small off-cut square of 6mm plywood for one of my jaw sets. The square is marked and cut diagonally and then the inner triangle cut out on the bandsaw. The chuck waste block was cut centrally. (NB: I mounted the chuck waste on its original tenon and trued the face flat, then I left the old tenon on as it added depth to the

completed jaws.) The resulting disc is then cut into two halves on the bandsaw.

The two L shapes of ply are then aligned centrally on the flat surfaces of the two semi-circles from the waste block and glued and clamped. Once the glue has cured the jaws can be mounted and the circle trued up.

In use the tailstock can be brought up for extra support, but on small projects this isn't a requirement and the jaws hold the stock perfectly securely.

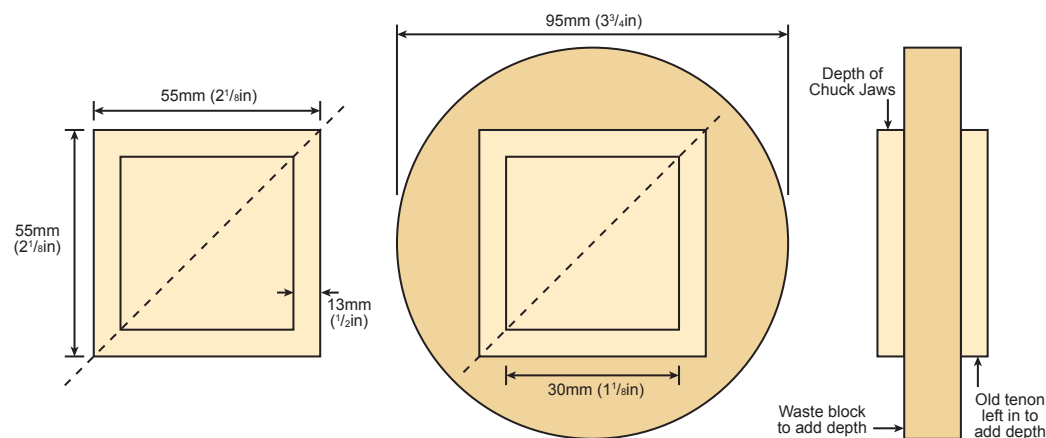
These jaws will hold square stock up to 40mm. Your particular chuck may require a slightly modified design but the drawing should give you the information required to achieve this.



Fitting the shop-made jaws



Turning a small finial



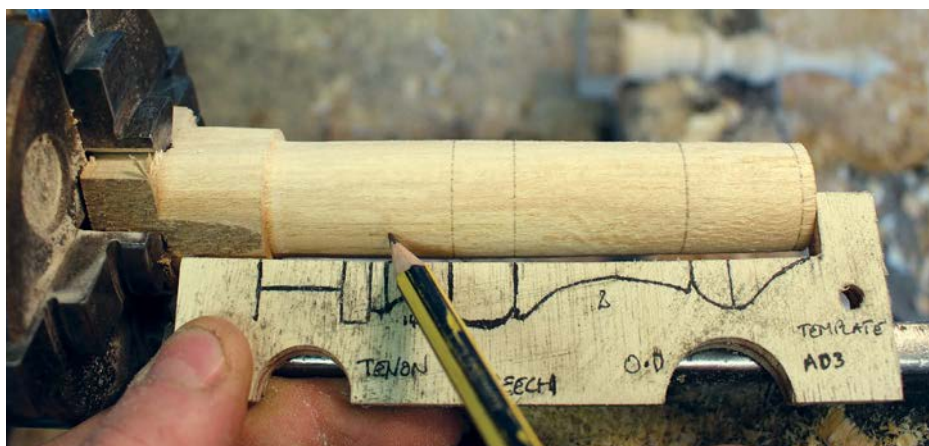
Drawing for the construction of the jaws. You need to alter the design to suit the jaw profiles you have in your chuck

Tip 4: Storyboards

Storyboards are probably as old as woodturning, and only the demise in spindle turning has reduced their usage. The value of the storyboard is its ability to accurately transfer repeated dimensions and information to a workpiece. Some people prefer to add sharpened pins to the leading edge in order to scratch the dimensions on the wood, but as I always ended up pencilling these marks in I no longer go to the effort of adding pins and simply transcribe with a pencil.

For terminated turnings, such as finials and knobs etc., I always include a 'foot' to latch around the end of the workpiece. This provides an added level of certainty to the transfer of marks.

You can make a board from an existing turning you need to replicate or, as is common, you can turn the first item then make a board to enable replication. Transfer all the primary dimensions and features across to the board, and you can



Marking out a repetition job

even drill out the overall outside diameter, tenon, and any other particular diameter to use as a gauge during turning. Label the storyboard for future use – it's incredible how often I come back to old boards. You can also roughly draw the shapes on to the storyboard to refresh

your memory for later. Once the primary dimensions have been transferred to the workpiece you will find that, after a small number of repetitions, the process of copying the shape almost comes naturally. Your spindle turning will improve dramatically as a result.

Tip 5: Repetitive marking

Marking out repeated features such as mounting recesses and tenons is something we cannot escape. These features need to be accurate in order that our mounted workpieces are securely held for turning, so anything we can do to make this process reliable is a distinct advantage. Spring callipers are perfect for the job but they do require that we set them correctly, or double-check the set first. A dedicated gauge is a step up from this, speeds up the task and ensures it is always accurate.

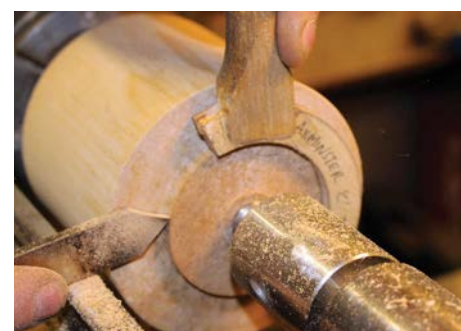
The recess gauge is simply a triangular section with a faced edge as long as the radius of your regular recess. The pointed tip is placed on centre and a line scribed with a pencil in line with the rear edge. It couldn't be simpler.

The tenon gauge is a little more involved to make. A short handle is turned with



Marking a 75mm recess

an end diameter of approximately 25mm. A slot is cut into the end to take a ring of 8mm ply wood from an off-cut. Half of the ring is cut away – save it for a further gauge or make another one for a friend – and this is glued in at an angle. Reducing the bulk of the 25mm section using a belt sander allows closer access and the gauge can be used on the base of bowls and



Cutting a tenon with size gauge

platters. In use the process is simply to hold the gauge against the wood as the tenon is cut until it drops on to the tenon.

Alter the templates to suit your jaw diameters and make sure you match the profiles of the tenons or recesses to suit the jaws you use. Label each template and jaw set so you know which one to use to match the specific jaws.

◀ Tip 6: Troublesome spalted timber

Spalted wood is popular with both woodturners and the general public for its aesthetics, but for the woodturner it can be a nightmare. Catching spalted wood at the optimum point to turn it is a rare privilege. More often it has been left far too long with live fungus and the wood is in a terrible condition. Occasionally it can be so bad that only extreme action, such as vacuum stabilisation, will rescue it, but providing we catch it before this stage there are strategies we can employ to enable the wood to be used.

The fungus will have eaten the fibres that hold the wood together, which results

in a surface not dissimilar to shredded breakfast cereal. Abrading will not recover the surface as differential abrasion will only make matters worse. Having turned the shape we want the workpiece is then taken from the lathe and cellulose sealer liberally applied. I tend to pour a large amount into the vessel and continually swish it around as the wood takes it in. Any excess can be applied to the rim edges and outer surface of the vessel. The key is to get as much cellulose into the wood as possible.

Allow the workpiece to dry overnight to ensure that the cellulose has dried

and firmed up the wood fibres. Put a fresh grind on the gouge and take a fine finishing cut to form the finished surface. You will find the wood cuts beautifully and a surface ready for abrading is produced. Be very careful when abrading as there are still soft and hard areas below the improved surface and aggressive abrasion will cut down to this level and destroy your intervention work.

NB: A dull gouge or scraper can never take a fine cut – the cutting edge has effectively been rolled over and rounded. Always re-sharpen before making finishing cuts.



Badly torn grain in spalted wood



Cellulose sanding sealer poured in hollow

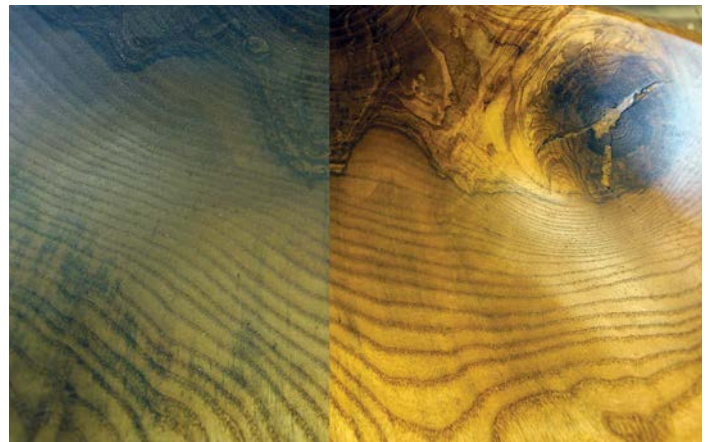


Finishing shear cut taken 24 hours later, leaving a clean surface

Tip 7: Re-finishing

For many reasons we are occasionally left with finished work that has got dusty and dulled over time, and this can be a problem. Often a fresh coat of finishing oil is applied after a quick dust-off, and this will only serve to make the surface dirtier than when fresh and the initial glow of fresh oil is misleading. What we need to do is clean the surface and nourish the wood.

An old and simple reviving recipe can be used to great effect. You will need: boiled linseed oil, methylated spirits (denatured alcohol in the US), and turpentine. Mix a batch of $\frac{1}{3}$ of each in a glass jar or bottle with a good sealing lid. Shake the mix vigorously and use on a wadded pad of lint-free cloth or workshop tissue. Wipe over the wood, working with the grain. Wipe any excess off then buff with a clean cloth. The surface left will be clean and glowing. The reviver keeps well but, as with all chemicals, should be stored in a safe, dry place away from heat.



Before and after use

Tip 8: Problem grain on the outside of vessels

Pulled grain on vessels can be an irritant for far too many people, and the response is either to ignore it and finish anyway, abrade to a ridiculous extent, or give up. It need not be this difficult. Area A is the surface from a rough-shaping cut with a long-ground bowl gouge using a push cut with the grain. Area B is produced with the same tool re-sharpened and taking a lighter finishing cut. Area C is the surface left by the pull shear cut. This produces an unpolished but improved surface to that on area B and reduces the amount of abrading to finish the piece of work. The difference in the shavings is a clear

illustration of the improvement in the quality of the cuts achieved.

The shear cut is taken with the tool handle dropped very low and just the cutting edge and a fraction of bevel to support the cut addressing the wood. Twist the tool until the flute is almost pointing at the surface, but ensure that only the bottom edge is in contact with the wood. Try to make the cut continuous and flow throughout the length of the surface being cut.

Practice is important. Remember to keep the flute pointing in the direction of travel and the cut occurring on the lower wing.



Three different cuts



Pull shear cutting on a bowl's surface



Three qualities of shaving from the same tool

Tip 9: Torn grain in a bowl

Torn grain on the interior of bowls can be another issue that often defeats turners. Reasons for torn grain can be numerous but the most common are dull tools, poor wood quality, poor technique, end-grain bounce and differential wood density.

In the example illustrated the problem occurred due to the bevel bouncing on the relatively harder heart/sapwood boundary wood. As the bowl rotates the gouge bounces on the much harder surface and drops again and causes torn grain. The best methods of removing such damage are to take far lighter cuts with an awareness and preparedness for the bounce – it can be resisted – or to take action with a freshly honed scraper at a 45° angle to the surface. Very light cuts with little physical pressure on the tool edge will ride over the damaged areas and quickly fair the surface ready for abrading.

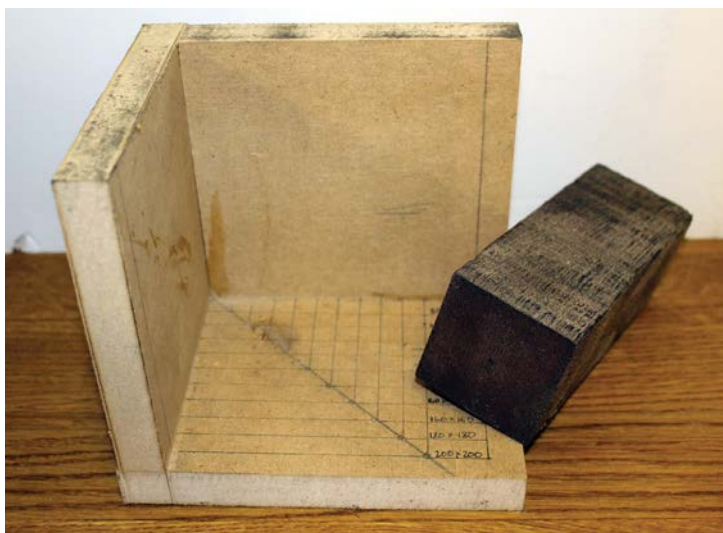


Before and after

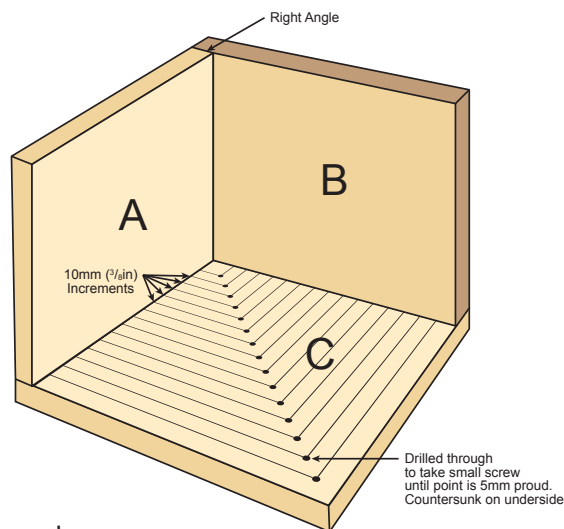
Tip 10: Repetitive centre marking

Turning a large batch of spindles can be a tedious process if you don't enjoy it, but even before the turning begins there are tedious tasks to undertake, not least of which is centre-marking the stock. This all takes time, and if you are being paid for this time then it pays to speed the process up. A simple right-angled jig can be fashioned from scrap plywood, MDF or similar. It needs to be accurately made. The diagonal from the inner corner to the outer edge is

marked and calibrated to your preference, metric or imperial or both. Precise holes are drilled along the line and the holes countersunk on the underside. A wood screw can be screwed in from the underside, ensuring up to 5mm of the tip coming through. The stock can then be placed firmly in the corner and the opposite end hit sharply down. The screw tip leaves a centre mark for the drive centres to locate on. This process is quick, accurate and effortless.



Centre punch jig

Centre punch
jig drawing

ABC - 130mm x 130mm (5 1/4in x 5 1/4in)

◀ Tip 11: Using a cabinet scraper to fair the outside of a bowl

Achieving a fine finish on the outside of vessels is important for reducing the amount of abrading we need to do in order to finish the vessel. For some, using a conventional scraper often proves disappointing or catastrophic. As an alternative approach a kidney-shaped cabinet scraper (though some prefer the straight-edged type) can be used to great effect. The edge of the scraper is ground at the bench grinder to produce a wire edge. Keep the toolrest as close to the wheel as possible and hold the scraper

down firmly, rotating it along the curve.

In use the lathe toolrest is moved out of the way and the lathe set at about 500-800rpm. The scraper is held at about 45° to the wood surface and addressed to the wood at the very bottom of the wood's travel as the lathe rotates it towards you. This is the area where you usually hold abrasive to the wood. The scraper is drawn across the wood at an even rate and the very fine shaving will be produced. There is a difficult area if you come close to the chuck, but experience and bowl size will affect this.

As with cutting with a conventional shear cut on a scraper, cutting with and against the grain results in a different surface cut and finish. Try to cut with the grain wherever possible and also, as with conventional tools, keep the tool and hands well away from the chuck and raised detail.

This is a contentious practice, but one I have used for a number of years now without a single incident. Students often prefer this to conventional scrapers for work on the outside of vessels.



Sharpening a scraper on a grinder



The scraper in use and the resulting shavings

Tip 12: Gouge angles

Gouge angles always cause consternation among woodturners. 'What is the angle on that tool' must be one of the most frequent questions at demonstrations. If the angle of your gouges is of paramount importance to you then you need a few tools to achieve those angles. A simple set of set-up tools can be made from plywood or plastic. Make them in the angles you frequently require gouges to be ground to. The set-up tool can then be used to set the grinder tool support to the desired angle. Having ground the tool the nose

angle can be checked using a protractor marking-out tool.

This process can also be reversed to find the angle of a tool for replicating it. Find the angle with the protractor and then produce a set-up-tool of the angle found.

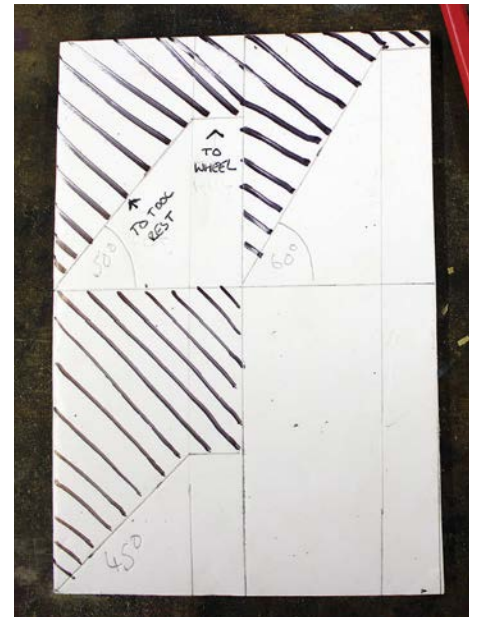
I am never overly concerned about specific bevel angles – you get used to what you prefer regardless of angle – but what is important is that the angle is the same every time you use the tool – the body builds muscle memory to the tools you use. ●



Angle guide in use



Checking the angle using a protractor



Templates marked and ready for cutting out

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Replacement carved spindle

Richard Findley completes the parts for the piano restoration he began last month



Last month I described a restoration job I undertook a few months ago on a piano. Two turned mouldings had been knocked off by removal men during a house move and new parts were needed. The job was to match the new parts to the existing and fit them back in place on the piano, my main aim being to make it look as if my new parts had always been there.

In the last article I showed how I had gone about turning the slender vertical spindle which fixed to the edge of the upright piano. This is now ready for finishing, but first I need to make the shorter horizontal spindle, which involves some tricky details.

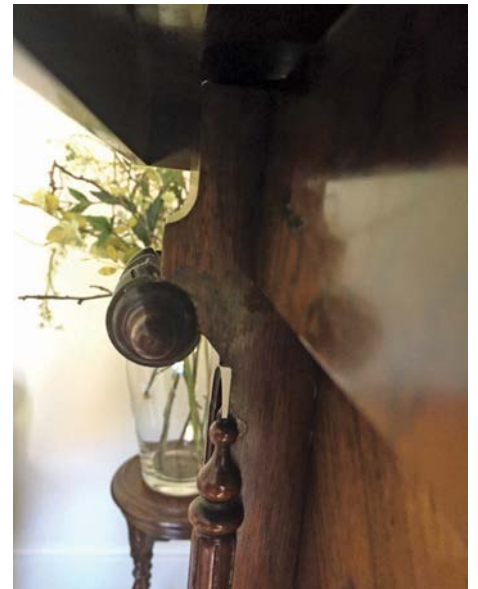
Forward planning

I often talk about forward planning in articles and in demos. Throughout a job I am always trying to think ahead. What problems might I face? Is there a consequence to doing things a certain way? Would there be a better way to approach it? This starts from the very first sketch or drawing and continues right until the very end of the making process, in this case, to when the parts are fitted back on to that piano.



The original spindle in place

The horizontal spindle presents a few hurdles, all of which need to be successfully cleared before the job is complete. The main one that has troubled me since I first saw the piano is the fact that it sits at an angle on the piano and needs part of it to have a flat back, allowing it to be mounted. The long vertical spindle also has a section removed from its back but along its entire length, meaning the paper joint I described last month was perfect. This spindle, however, has a flat section but the ends seem to be whole. After much head-scratching, the only solution I can



This shows the angle at which the spindle is mounted

come up with is to make it in three pieces. This will allow me to put a flat back on the central section and fit the ends a little like finials, using small spigots or tenons, and glue it all together once the central section is complete.

Leading on from this, the next issue to trouble me is exactly how much wood to remove from the back of the spindle. It had been impossible to take a measurement, so the only way I could think to approach it was to count the number of 'peas' in the carved pea moulding detail. I had noted six visible peas and had measured them to vary between 7mm-8mm in diameter. In theory (and theories sometimes don't work out in the real world) if I carve a pea mould all around the centre of the spindle, I can count the six best and cut the flat back, forming a straight line between the start of the first and the end of the sixth, removing the rest. Exactly how I will cut

this is still up for debate, but the plan seems sound, so I will continue.

Preparation

I cut a piece of the mahogany windowsill board overlong, allowing for a good grain flow throughout the spindle, and allowed extra timber for the little tenons I will need and some waste wood for the ends. The tenons will be turned on each end of the central section, the end 'finials' will be drilled to form mortises to match. Having marked the centres on each of the three pieces and numbered them to ensure grain match, I use a 10mm lip and spur drill fitted in my pillar drill and cut the mortises.



The timber ready to work

Turning

The turning of the parts is fairly straightforward. As usual when there is only a single item to make, I simply mark the positions of the details from my detailed (if untidy) sketch and carefully turn, first the major diameters then the details, to shape, often referring to my photos to get exact curves and shapes.



Sizing the spindle

The ability to zoom in on details on my phone screen is incredibly useful.

After roughing to a cylinder I mostly use my 10mm beading and parting tool to size and then shape the details. The pea moulding is initially formed by turning a bead around 8mm wide, which can later be carved. Either side of this



Beading and parting tool in action

Holding work on a pillar drill

You will notice in the photo that I am holding the wood with a pair of grips. Smaller pieces can be held by hand, but if the drill grabs, which they have a tendency to do, the wood spins quite ferociously and fingers will always come off worst. A fence, V-shaped blocks or jigs of one sort or another can be used to secure the work for production runs, but when only two pieces need drilling I find a pair of grips are perfect finger protection.



Drilling the mortises, holding the work with grips

bead is a tiny flat area, so I use my narrow parting tool to produce this. A 6mm spindle gouge is used for the two tiny cove cuts either side of the central bead. Leaving the central bead alone as this is going to be carved, I lightly sand the rest of the spindle with 320 grit abrasive.



The turned spindle ready for carving

◀ Pea moulding



The curve of the gouge closely matches the shape of the bead



The boxwood-handled tool stamped with the name of my Grandpa and its previous owner

With the bead which forms the basis of the pea mould turned to around 8mm wide, I next need to divide it up into individual peas. There are several ways I could approach this, including measuring the circumference of the spindle and dividing it, but I choose to go for the more simple – some might say hit-and-miss – approach of setting a pair of dividers to about 8mm and walking them around the bead. I have a feeling this is a more authentic and certainly the most pragmatic way of doing it. To my surprise, the walking of the dividers brings me back to my starting point to within a couple of millimetres, which, in the scheme of things, is as good as I can hope for.

With the bead marked out, I need to take a look through my Grandpa's old carving tools to find one of the right

shape. As I mentioned last month, the tools I inherited from my Grandpa are the carving tools of a fine cabinetmaker rather than of a sculptor, so are ideal for the job in hand.

To produce a pea mould I need to find a gouge with a curve which closely matches the 8mm-wide bead I have turned. I pick a lovely boxwood-handled gouge which perfectly fits the bill. When my Grandpa was an apprentice he had bought a set of tools from a retiring cabinetmaker whose tools were all stamped 'W Wilber'. My Grandpa (Frank) duly stamped his name on his 'new' tools: 'F Findley'. I have no idea who W Wilber was, but I'm sure he would be amazed to find some of his tools still in occasional use in my workshop around 100 years later.

Mahogany & carved furniture

The discovery of mahogany as a timber suitable for furniture by cabinetmakers in the early 1700s was something of a game-changer in furniture-making and design. Prior to this, oak and walnut were the main timbers of choice for high-quality furniture. Oak lends itself best to bolder carving and walnut trees have a lot of sapwood and wastage, making them better for smaller pieces of furniture. But mahogany was available in great, wide boards and could hold very intricate and crisp carved detail and so could be worked into designs never seen before, with makers such as Chippendale and Sheraton leading the way in high-end furniture production and design using this amazing new material.

Carving



Carving the peas



Working towards myself

The technique for forming a pea mould is not dissimilar to rolling a bead with a skew (only without the risk of a catch), with the spindle held between centres on the lathe and the spindle locked so the lathe becomes a work-holding device. The cut begins with a vertical stabbing cut

to mark and physically divide each pea. The gouge is then positioned at the top of the pea and, in a smooth sweep, the tool needs to be both pushed forward and the handle lifted, cutting in an arc to the base of the pea. To define the shape at the bottom I hold the gouge vertically

in a stabbing-type cut and twist it to emphasise the round shape of the pea. I choose to cut both away from myself and then towards myself to complete the pea, although in hindsight I could have turned the work around in the lathe and maintained the action working

away from myself, although I didn't particularly struggle either way.

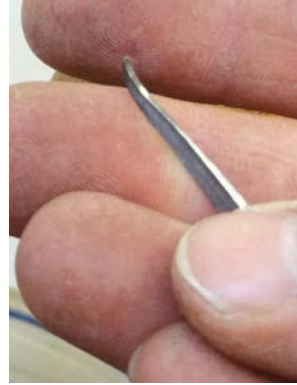
With the peas formed I find that there is some cleaning up work to do at their base in the tiny V-shaped space that is left between them. Another look through Grandpa's

carving tools reveals a selection of 'grounders' which, until now, I had somewhat dismissed as fairly useless little tools. I now fully realise their usefulness and would have been completely stuck without the tiny bent chisel. Because of its unique

shape, the grounder is able to easily reach into the difficult little detail and slice away the untidy bits left by the carving action of the gouge. Once completely happy with the pea moulding I am ready to cut the flat back on to the spindle.



Completed peas needing tidying up



The grounder and the grounder in use

Cutting the spindle

Throughout the carving process I had been formulating a plan to cut off the back of the spindle. Carving the detail has revealed 10 peas, one of which had broken off along the grain, making the decision about where to cut quite easy. My plan is to simply push the spindle through the bandsaw to remove the back four peas, but there is no getting away from the fact that cutting it would be a very risky business with fingers close to the blade and the spindle itself being

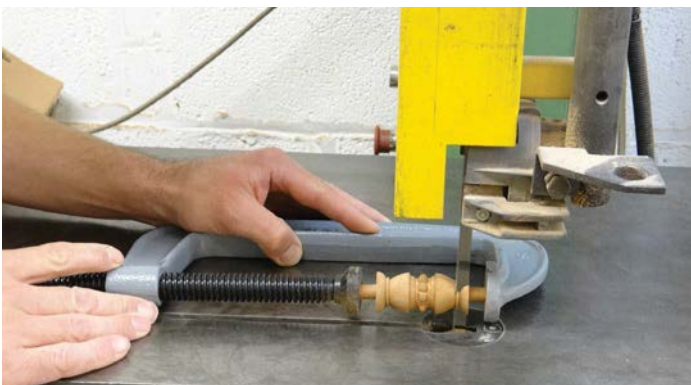
an awkward shape. The risk of doing it freehand is completely unacceptable, so an alternative is needed, and this is where the focus of my problem-solving skills had been during the making process to far. The solution I come up with is so simple and safe that it is a no-brainer. I use a G-cramp to hold the spindle, which removes my fingers from harm's way and stabilises the difficult spindle throughout the cut.

I take my time to correctly position the

spindle in the cramp and, once satisfied, I make the cut. I am relieved to find that my plan is a complete success.

I am very aware of the metal parts of the g-cramp close to be blade (much better than fingers, but bad for the blade all the same) so I am careful to push slowly in a very controlled manor.

The sharp blade leaves a clean and relatively flat surface which just needs a rub against a piece of 240 grit abrasive mounted on a board to flatten it properly.



Cutting the spindle holding it with a G-cramp



Flattening the back on abrasive wrapped around a board

◀ Fluting

I place the spindle back on the lathe to cut the flutes in the same way I had on the slender vertical spindle. The only difference is that the flutes on this spindle are a little wider and deeper than those on the other spindle, so the V-tool I had previously used wasn't going to be right. Another look through Grandpa's tools and I choose what's known as a veiner, which is a deep and narrow kind of carving gouge named, I believe, because of its usefulness for cutting the veins on foliage. Being a narrow gouge rather than a V-tool it naturally produces a groove with a shape which is perfect for this particular set of flutes. I set them out, as I had before, using dividers and a pencil, and carefully cut them to my pencil lines.



Cutting the flutes with the veiner

Spindle ends

The ends of the spindle are little bell-shaped domes. I had already drilled them so I mount them on the lathe using my small cone-shaped drive centre which just fits inside the hole and offers enough grip to drive the small pieces of wood. My 6mm spindle gouge is ideal for turning the bell shape. A light sand to match the rest of the spindle and I can test-fit them. Satisfied with the tests and that the two ends match I can part them off, tidy the ends and put it together with a little glue to reveal the complete spindle ready for finishing.



Assembling the spindle

Colour matching and finishing

I wrote at some length about my finishing process just a few months ago in *WT313* when I made the replacement split finials. So as not to bore regular readers by repeating myself I will only briefly go over the process again here.

I use spirit (alcohol)-based stains to achieve the colour match in the first stage. I always start with a lighter shade of my target colour, testing on an offcut of the same wood as I go. Spirit stains can be mixed with other colours and thinned to adjust the colour, so I always start by lightly adding colour and creeping up on something close to the final shade, rather than trying to mix up a colour and achieving it in one hit. It is far easier to start light and gradually darken and adjust the shade of red or brown until I'm satisfied.

I try to stop a shade or two lighter than the final colour as adding lacquers will often darken the wood further. I apply a coat of slightly golden 'wood warming' sealer, which does as the name implies, warming the tone of the stain with a golden hint, not dissimilar to how French polish does. Once dry I apply several coats of waterborne lacquer, to which I can add small amounts of water-based stains to further adjust the colour. I add highlights of darker colour in the corners and in the flutes to make the work match the original more closely by carefully brushing on a small amount of solvent-based stain before applying the final coat of gloss lacquer.



Spraying a layer of stain



Waxing the spindle

The final stage is to apply some dark wax with an abrasive pad, which adds depth to the colour and gently cuts back the gloss level to match the original sample. I buff off the excess wax, leaving some in the hard-to-reach areas to add to the look of age.

Holding work for finishing

Holding work to allow a finish to be applied off the lathe can be challenging. In this case, both spindles have a back face which won't be seen, so I use a piece of wood around 25mm square and 75mm long with a panel pin driven into the end and sharpened, which I then simply push into the back of the work. This gives a sound hand-hold and a way of standing the work to dry once sprayed with stain or lacquer.



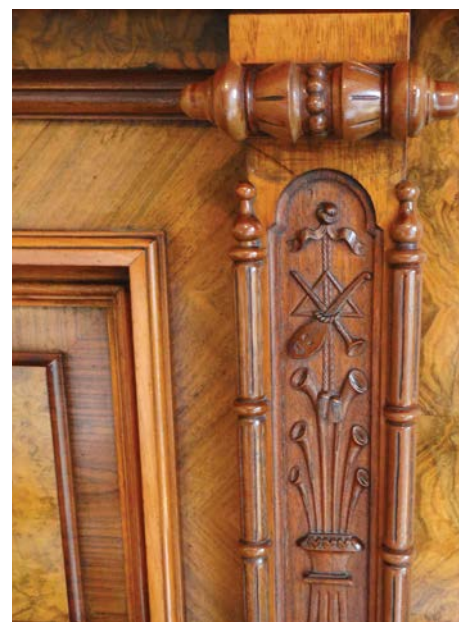
Work-holding while finishing



Finished components with the original sample



Comparing my spindle with the original



Everything fitted in place

Final fitting

Having had a sample of the slender vertical spindle in hand, I am quite confident of the match of the new piece. The horizontal spindle is slightly more nerve-racking though, as I have been working from memory, photos and my rough sketch throughout. Everything points to it being a good match but naturally there is always a chance I have misinterpreted my notes or the photos.

I arrive at my customer's house with my tool bag containing every conceivable tool that I may need, and a few others as well just for good measure. Naturally my first instinct is to hold up my new horizontal spindle to the original and see how it looks. Despite my nagging doubts, it is a pretty close match and it fits perfectly on to the flat area where it will live. I carefully use my cabinet scraper to remove the old, dry glue that was left behind from the old spindle, add a light smear of new glue to the back of the new spindle and push it into place. The tight fit of the end caps means it holds itself in place while the glue dries with no need for me to use any sort of clamp. If needed, I would most likely have used a strip of masking tape to temporarily hold it in place.

The original vertical spindle pushed back into place as easily as it had come off, the fine pins slotting back into their original holes without putting up a fight.

The last piece for me to fit is my new vertical spindle. The originals were held on with fine panel pins, which would be the most authentic option, but the chances of splitting the spindle or the corner of the piano, while perhaps not high, is a risk nonetheless. After weighing

up my options I decide that using a couple of tiny drops of glue, as I had for the other spindle, would be a safer approach, so I carefully add three small drops of glue into the missing quadrant of the spindle and apply the spindle to the corner of the piano. I move the spindle up and down a little, using the principles of a rub joint to get the spindle to grip in place while the glue

dries. I step back, eye it up with the other spindles, adjust it and I'm done.

The fitting of the new pieces couldn't have gone better and, to top it all, both myself and my customer agree that, even looking quite closely, you wouldn't know the spindles weren't original, which means that my aims with the job have been met. A happy customer means that I'm a happy woodturner. ●



The finished piano



Scraping is the only way to get precise fits

Ernie Conover looks at how scrapers achieve machined, concentric surfaces

Scraping gets a bad rap from some woodturning authors and pundits, usually with a barely discernible tone that connotes 'true professionals never scrape'. Nothing could be further from reality, for scraping is necessary in a variety of situations. Bowls or hollow forms with undercut rims are regularly scraped. A scraper can be easily ground to a shape to get to these areas where no gouge can go, no matter the level of skill of the user. Likewise, really precise fits, be they for a box lid snap-fit or a tight slide-fit for a mortise and tenon joint, can only be achieved by scraping.

Achieving perfect concentricity with gouges and chisels tends to be difficult. They will ride up and down a bit because

of the difference in cutting radial and tangential grains and even more so between plank and end grains in faceplate cuts. A scraper does not suffer from this problem because its snowplough cut is so thin that material is removed equally from all the way round, regardless of grain.

A scraper will also repeatedly make special shapes that are exactly alike. Form scrapers can be ground, or even filed, to unique shapes in the same way that a scratch beader can make custom moulding profiles. In the past, such 'form scrapers' were the stock in trade of the production turner. Nineteenth-century production turners would make boxes, bottle stoppers and lidded canisters with precise fits.

The following exercise is intended to teach the techniques for producing an accurate fit between two parts. You will need a nice glass jar with a screw or bayonet-lock lid. I prefer the latter, but save all small, well-designed jars for this purpose. We will mount a scrap block of wood as a glue block on the screw chuck and scrape it flat. A disk of wood slightly bigger than the scrounged jar's lid is paper-jointed to this block and a mortise is scraped into it that is a mild press-fit with the jar lid. The piece will then be reverse-chucked by scraping a tapered tenon on the glue block that fits the inside of our freshly scraped recess. The outside of our wood lid will then be brought to a pleasing shape and a good polish.

Making a wood wrapper for a jar lid



1 Mount a 30mm-thick disk of wood, a glue block, on a screw chuck and scrape it dead flat. Cut a disk of attractive wood that is a bit bigger than the jar and lid you scrounged. I used curly maple. Glue this to the glue block with a piece of brown craft paper interposed in the joint. I use old grocery bags. By picking up the dimple left by the dividers I laid out the circle with perfect centring achieved. Allow the glue to dry overnight. This is very important



2 Scrape the lid blank flat and scrape some circles in it. The outer circle is a bit smaller than the lid



3 Use a small bowl gouge to remove wood to just a whisker under the depth of the lid



4 Use a V-shaped scraper to change the bowl shape left by the bowl gouge to a true mortise sized to the groove. The recess is smaller than the lid at this point. Scrape a heavy chamfer, stop the lathe and compare the lid to this chamfer. If it does not fit within the chamfer, scrape the chamfer distance away and scrape another chamfer. Compare scrape until you are oh-so close. The chamfer plays a most important role here in that it conveys the amount of material you may safely remove. In all lathe work taking 1mm off inside and/or outside diameter changes the relative diameters by twice that amount, 2mm. The chamfer becomes a guidepost to keep track of what you can safely remove



5 I have achieved a nearly correct fit and I can tell without stopping the lathe



6 One last scrape to get a perfect match. It should be a snug fit, not a loose one



7 Remove the piece from the glue block with a bench chisel in the paper joint



8 Scrape a tapered tenon on the glue block that matches the mortise/recess opening in the lid. Force it over the tenon with a smart smack. You need a secure hold but not so tight that it splits the sidewall as you do so



9 Turn the outside of your lid to a pleasing shape



10 Sand the lid then apply some mineral oil to bring out the grain. Now brush on pure shellac



11 Buff with shavings or a small piece of paper towel. You can do all of this immediately. Now crayon on pure carnauba wax and buff with shavings again. Of course you can use a finish of your choice too. Pry the piece off the chuck with the bench chisel. Now fit the jar lid in the wooden lid's recess and, if required, apply a small amount of adhesive – silicone, cyanoacrylate or similar – to secure it in place



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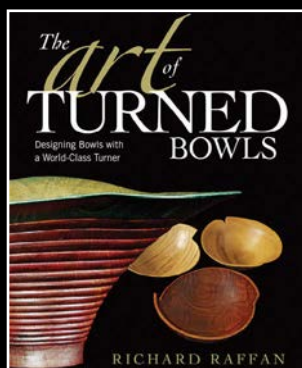
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Bowls that feel as good as they look

In this abridged extract from *The Art of Turned Bowls*, by Richard Raffan, published by Taunton Press, Richard explores the topic of wall thickness and interrelating curves



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It is not difficult to create a wonderful-looking bowl using wood of exceptional grain or colour, or your bowl might have the subtlest of curves creating an exceptional profile using plain wood, or it might be a vehicle for intricate carving, fluting, or paint. But if your bowl is to feel as good as it looks, as these pieces do, the way the internal curve relates to the profile is going to be crucial. The amount of wood removed during hollowing and the distribution of the wood that remains in the wall determines the physical weight and balance of a bowl.

I hope that the sensations I experience when handling a bowl confirm, at least to some extent, what my eye has programmed my brain to expect. Sad to say, this rarely happens. Sure, a

really ugly bowl almost never feels good, but a surprising number of handsome bowls don't feel very good either. Too many turners strive for uniform thickness (or, more aptly, thinness), which usually results in a boring bowl – all virtuosity but no subtlety or drama. I meet too many turners who seem preoccupied with technique and wood, rather than the design of the objects they make. In a few decades and often sooner, all woods darken almost beyond distinction, unless they are exposed to the weather and sun, in which case they go silvery. Either way, colour wanes and one wood becomes difficult to tell from another. Good form is of paramount importance. In this article we look at wall thickness and interrelating curves.

◀ Walls

To my mind, the only reason to make a bowl wall uniformly thin, apart from the challenge, is if it is to be pierced. Part of the raison d'être of piercing is to display the even wall thickness. Apart from that I see no particular virtue in a bowl wall being either thin or of even thickness, although a combination of both is often held to be the holy grail of bowl turning. All these show is a degree of technical expertise and that you might own a laser gauge to make the job of turning them easier. A varying wall thickness is usually far more interesting both to see and feel. This does not mean that the two curves that sandwich the wall thickness undulate, rather that two flowing curves complement one another.

A practiced eye can see how the inside of a bowl relates to the outside without having to pick it up. Light falling on the inside reveals how smooth or flowing the line is, and its direction. The bottom of the inside is assessed in relation to the surface the bowl sits on, so it is not difficult to spot if a bowl is overly thick in the base from across a room or even in a photograph, as in that below.

The weight and balance of any bowl is dictated by the thickness, or thinness, of the wall and where any variations lie. If a bowl wall is much thicker at the rim than the base, it will be top heavy. Conversely, if too much wood is left in the bottom, the bowl can feel as though ballast has been inserted into its base for extra stability. There is no universal equation for a well-balanced bowl. If a bowl has a wall that tapers to a thin rim then it is reasonable to expect the weight to be more toward the base. Looking at a bowl similar to that at front in the photo to the right, this is what we expect when we handle it, as we might also expect in handling the enclosed form at left. When a rim is not tapered, as to the right in the photo, the physical weight is best balanced evenly between rim and base.



This 250mm bowl is more than an unusual example of pin oak (*Quercus paustris*) – it is above all a well-balanced salad bowl in daily use



The way a simple highlight false on the inside of a bowl reveals the smoothness of the curve and thickness of the base, also gauged in relation to the surface the bowl sits on. On the walnut (*Juglans* spp.) bowl (right), the highlight on the steep wall stops abruptly where the flat base meets the wall. On the gently curved inside of the lace sheoak (*Allocasuarina* spp.), the highlight fades gradually towards the centre



When a wall tapers to a thick rim, as with the examples in the centre and left, we anticipate the weight toward the base. If the rim is wide, as in the bowl on the right, the physical weight is best balanced evenly between the rim and the base



All is revealed in the cross-sections of these good – lower bowl made in ash (*Fraxinus* spp., – and bad – upper bowl made in walnut (*Juglans* spp.) archetypal bowls

Cutting bowls in half

Achieving the correct relationship between the inside and outside curves is at the heart of the bowl turner's art. I can offer no magic formula, but you'll make little real progress without occasionally examining the cross-section of a bowl. You learn much more if you cut a few bowls in half so you can examine the complete wall thickness.

Slicing forms in half is a common practice among apprentice potters, who are fortunate to work with a reusable material. I'm sure it accounts, at least in part, for the large number of excellent thrown ceramic bowls. I suspect that the contrasting dearth of top-quality wooden bowls reflects the failure of turners to indulge in a similar exercise. I strongly recommend you slice in half any bowl that you know to be inferior – you will learn much from the cross-section. What's more, the process will enforce a less precious approach to your craft. Tougher is cutting a good bowl in half, but your courage will be rewarded by an insight into what constitutes a good bowl.

In the lower photo on page 62 are examples of what I consider to be the best and the worst in run-of-the-mill bowls. The upper one – 240mm diameter English walnut (*Juglans regia*) – is one of the first large bowls I ever made back in 1970. Note the contrast between the freshly sanded wood on the cross-section and the darker, oxidized surface elsewhere – wood really does change colour. The lighter 355mm diameter ash bowl is one of my production bowls from about 1979.

The upper bowl displays several features common in beginners' bowls. Here, the diameter of the base was dictated by the 150mm diameter faceplate that was used to attach it to the lathe. (The recess in the base helped locate the faceplate.) The exterior profile is rather innocuous, although it would have looked much better if the curve had swept in more to create a narrower base and had met the base at a definite angle instead of at a sloppy radius. But this bowl really pales when we consider its inner profile – the epitome of everything I hope now to avoid. The shallow V across the bottom meets the wall much too abruptly, leaving too much wood on the rim of the base. Further up the wall, the curve flattens out again before arriving indecisively at the rim. This is a fine example of a curve that doesn't flow. All together, it's the sort of bowl most novices create.

In contrast, the profile of the ash bowl below it rises decisively away from the base, beginning as a shallow convex curve that tightens gradually toward the rim. The internal curve sweeps around

smoothly, relating to, but not copying, the outside. No dips or bumps mar either curve. The rim makes a definite statement in an asymmetric convex curve of its own, and the way in which the inner lip is cut back slightly toward the profile creates a shadow within that emphasises the form.

BALANCE

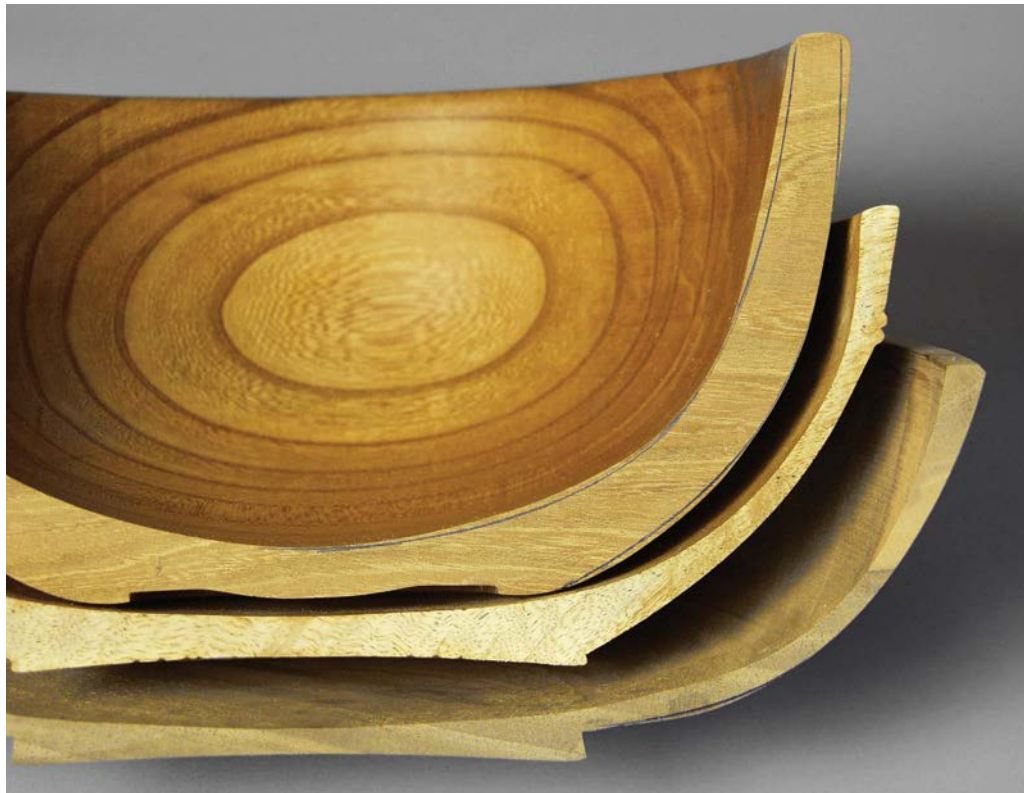
These bowls contrast even more when handled. The ash bowl is much better balanced, the wall is thinner below the rim, which takes away much of the weight in the upper part of the bowl and leaves a nice balance between the masses of the rim and base. The slight dovetail shape of the cut-back rim also makes the bowl easy to lift using one hand. The rim fits snugly between fingers and thumb, inspiring confidence. The external sweep of the profile makes it easy to lift using two hands since there is enough room to get your fingers beneath the bulk of the bowl. The walnut bowl fails badly in these regards. The sides are too steep to allow the bowl to be lifted easily with two hands. And if you use just one hand, the thin tapering wall and rounded rim will tend to slip from your fingers if you don't hang on tight.

Contrast these cross-sections with those in the photo at the bottom of this page. At centre is a practical bowl with flowing curves that might look better without the small beaded foot. The cross-sections above and below reveal less than

satisfactory curves typical of so many bowls. On the bottom bowl, the inner curve is fine, apart from a very slight dip at the centre, which would be difficult to discern running your fingers across the inside of the bowl. On the outside, the line drawn to smooth the curve that flows from the rim to the top of the foot highlights a distinct bump.

REFINING CURVES

The heavier cross-section (top) needed more work to develop satisfactory curves, and it highlights a chucking problem. Inside, the suggested curve was drawn from centre to pass through the thinnest point on the way to the inner lip of the rim, making a sweeping curve from a shallow V. Smoothing the curve on the outside reveals a bump toward the base and a straight line toward the rim, although the latter is not so bad. Use of the expanding chuck to grip the bowl for hollowing precludes reducing the diameter of the base slightly for a more interesting lower curve on the outside. If this bowl had been reverse-chucked so the lower curve and base could be reshaped, chances are that the bottom of the bowl would have ended up a bit thin. By contrast, the foot of the centre bowl can be removed without affecting the thickness in the base. A chuck contracting around a foot provides a more secure fixing when hollowing, as well as more design options.



The centre bowl has good lines, with none of the dips and bumps that spoil the bowls above and below it. The drawn lines reveal where the wood could have been removed to fair the curves

SMALL PRODUCTION BOWLS

The small production bowls in the photo above right were made from similar-sized blanks. Each foot fits the same chuck and, although the curves are without any dips or bumps, the upper bowl looks better – and feels a lot better in the hand. I attribute the comparative clunkiness of the lower bowl mainly to its more even wall thickness, and then to the less tactile upper profile. The beads were intended to be decorative, but they ended up more as a display of technique and added too much weight to the central portion of the profile. The slightly enclosed form of the upper bowl fits better in the hand, and the weight is well balanced between rim and base.

A small-footed form generally benefits having extra weight in the foot for stability. The lower bowl in the photo on the right has the mass nicely distributed and, even though a shade thick overall, feels right. The rounded rim brings expectations that the wall will thicken in the base. The simple profile and internal catenary curve is an elegant combination. The natural-edge bowl on top does not feel so good because the top of the internal curve wavers toward a taper but can't get there (because of the natural edge), so what is felt is a slight lump on the higher portions of the rim. The bowl would have felt better had the wall become slightly thinner two-thirds of the way down, similar to the upper bowl in the photo at the top of page. On the profile, the lower part of the curve straightens a bit to create a definite angle where it meets the curve of the foot, making for a more interesting form than simply tightening the curve into the top of the foot.

Where the profile flows from base to rim in outflowing forms, like the upper two in the photo on the lower right, a bowl feels better if the wall tapers to the rim. Here the beads (mainly because of their small scale) do not impact negatively on the bowl either visually or in the hand. The centre bowl feels better than the one above for the extra weight in the foot.

Where the bowl sits on top of a foot, as in the bottom bowl, I usually revert to slimming the wall beneath the rim. In part this is because I like wide rims. But a wide rim also adds strength to the form, particularly while it's being turned and sanded. Note the tiny beads that soften the corner between the foot and the profile.

Where the profile is essentially a single curve, walls that taper slightly work best. The walls of the forms that sit atop a pedestal foot can thicken towards the rim, being slightly dovetailed in cross-section



There is little, but significant, difference between the bowl that looks and feels good (above) and the one that just misses, below it



Although moderately chunky, the lower bowl feels better and is better balanced than the one above, where the wall is more even and the whole lighter in weight



ENCLOSED FORMS

When it comes to enclosed forms, turners often seem preoccupied with getting their walls as thin and even as possible. Turning thin, even walls is definitely a challenge worth accomplishing and probably necessary if you are going to pierce the wall. However, I prefer a bit more weight in these essentially ceramic or glass forms, as in the upper two bowls of the photo on the right. These pieces are all about 180mm in diameter so are a nice size to fondle, fitting into a hand as they do. The thin, even wall of the bowl at the bottom is impressive for its lightness, but it doesn't feel as good as those above. Top right feels best.

A bit of upper weight like that in the upper enclosed forms usually feels better in the hand than a lightweight, evenly thin wall. The bottom bowl could be half the thickness again and more of a technical feat, but not necessarily as tactile an object



Wide, flat bowls

Finally in this section, a word about wide, flat bowls similar to those in the photo below right. Both measure 160mm by 45mm and are typical of many bowls created by novice turners. Both were fixed on a screw chuck while the outside was finished, and both were prepared for rechucking so they could be hollowed.

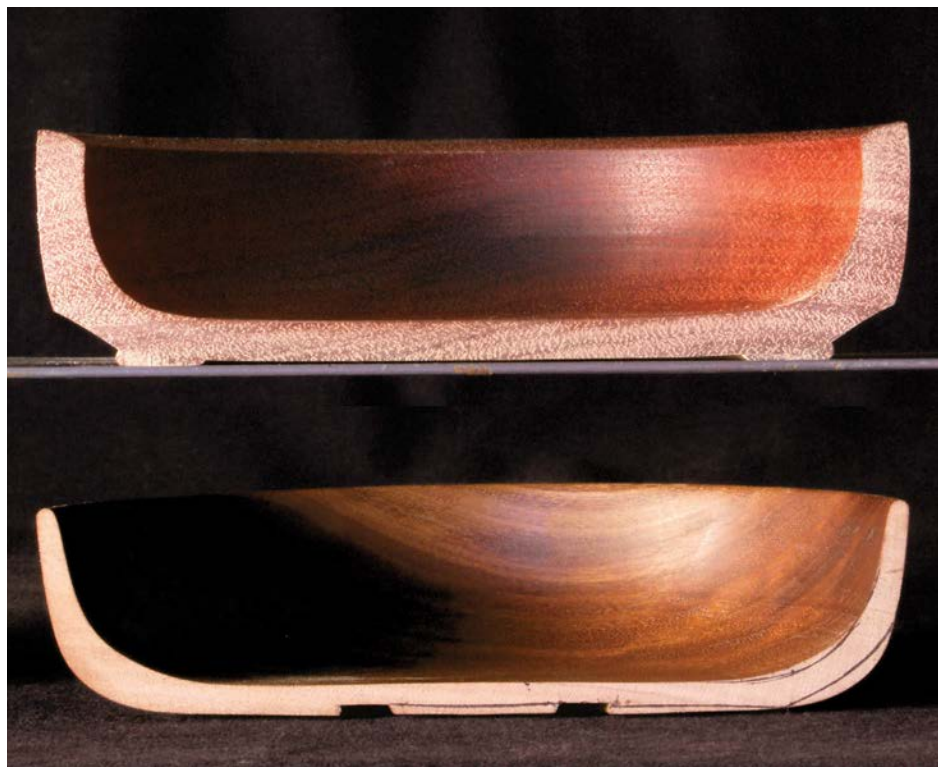
On the upper bowl a small bead of a foot was turned to fit the correct diameter for the step-jaw chuck selected. (The jaws won't mar a foot if it is turned to the correct diameter.) The base was recessed slightly so the bowl would sit on the rim of its base and, once it was hollowed, the bowl could easily have been re-chucked to remove the small foot. The cove-like chamfer that links the wall and the top of the bead is there to reduce the mass of wood in the corner between the wall and base with a bit more style than merely rounding over the corner as on the lower bowl. Hollowing the upper bowl was easy because of the wide diameter on which the chuck gripped.

By contrast, the lower bowl was mounted over standard jaws that expanded into the base. Because this offers much less support for the bowl, the work would have screamed with vibration as the bottom became thin, which is why the maker domed the inside, fearful that it was too thin. It didn't help that he cut the rabbet for the chuck deeper than necessary. Nevertheless, the maker could have dished the bottom to remove the rabbet and make the base slightly concave. In fact, he left it slightly domed, so the bowl spun like a flattish spinning top.

Inside, a line shows how the curve could have been a tad fuller in the corner. This bowl could have been reverse-chucked for the base to be re-turned. Lines show how such a base can be dished so the bowl sits on the rim of the base, and the profile improved.

Whenever expanding chucks are used on small bowls, the overall form of the bowl is likely to be compromised. Chucks

with good dovetail jaws can grip on a recess as little as 1.5mm deep, but most novices err on the side of caution with a recess depth of 10mm or more. Even if the base is a minimal 1.5mm thick over the chuck recess, the overall thickness of the base is greater than need be. As with the walnut bowl shown earlier next to the lace sheoak bowl, the heavy base will be obvious from a distance. ●



Avoid using small expanding chucks that require a recess (lower bowl), as these make turning more difficult than need be and frequently compromise the form. It's better to use a chuck that contracts around a foot like that on the upper bowl. You can remove the foot later if you don't like it

Getting the work out there

John Plater looks at how others can sell your work for you



Some of my work in a local gallery

Many craftspeople consider time away from the studio or workshop to be counterproductive. They do not want to spend time at an event making sales, so they look to others to sell their work for them, usually through a gallery or shop, physically or online. One has to accept the payment of commission to the gallery or shop on any sales made.

Galleries and shops may organise standing exhibitions where the work is in place over a period of time. Purchased pieces are reserved when the sale is made and are collected after the exhibition ends. Otherwise galleries and shops may have selling exhibitions where a piece may be taken at the time of purchase to be replaced by another piece from the gallery's stock.

Work shown in a gallery or shop which has negotiated and purchased the pieces from the maker is great. The gallery has more of an interest in selling the piece which it has bought than work which is left with the gallery on a sale-or-return basis. The latter is where the artist or craftsperson leaves the work with the

gallery and gets paid after a sale is made. The unsold pieces are returned to the maker after an agreed period of time.

There are instances of individuals or groups of artists and craftspeople running their own gallery or shop. Some will have fees and a level of commission in place to pay for a manager. Others will operate as a co-operative where the participants give their time to stewarding and shopkeeping in order to keep selling costs to a minimum and to share the workload. I have heard from a number of makers that it is especially difficult to run a gallery or shop alongside making one's own work. That suggests that it is important to decide whether to be a maker or a seller of work.

I have already outlined the ways in which a price for a piece might be worked out, but there are other costs directly related to selling work. These would include stand fees at a show, gallery fees and commission on sales made. Annual society membership fees should come into the equation. Many of us belong to the AWGB, other international organisations

and local woodturning clubs. I also belong to a local guild of designer craftsmen which organises contemporary craft shows throughout the year and a national exhibition society which hosts major gallery shows.

I don't like the idea of selling a piece remotely through a photograph on a web page and have turned down many offers to show and sell through online galleries. Similarly, I choose not to sell through a website of my own. Many craftspeople do and fair play to them – such avenues are well worth exploring and can be very effective. I simply don't want to. I think a photograph may give a false impression of a piece, whereas the eyes and hands make an assessment for real. There is comfort to be found in knowing that a customer fully appreciates what the piece is about, having handled it and seen it from all sides.

Maybe when the income from the work is more critical to the maker, the online sales become more important. It is, after all, the way that many people expect to shop nowadays. ●

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- Spindle gouge
- Parting tool
- Skew chisel
- Drill and drill bit
- A log, a laminated blank or solid timber blank to suit dimensions
- Ball of parcel string to fit the box

BOX (A)

Blank 127 x 127 x 135mm

The extra length of wood on the box blank is to allow enough wood to be used to form a jam chuck to fit the box over while its base is cleaned up. Mount the wood between centres, rough-turn and cut a spigot on one end.

Reverse-hold the spigot in compression jaws. Face off the top of the box and shape the outside as shown.

Hollow out the box to 90mm Ø x 76mm deep and drill or cut a 20mm hole, 10mm deep.

Reverse-hold the hollowed-out box on a jam chuck. Clean up the bottom before finally drilling the exit hole in the side. Sand and finish as required.

STEM (B)

Blank 25 x 25 x 100mm

Between centres turn to the dimensions shown before gluing into A.

TOP (C)

Blank 127 x 127 x 25mm

Between centres rough-turn the blank and form a dovetail as shown.

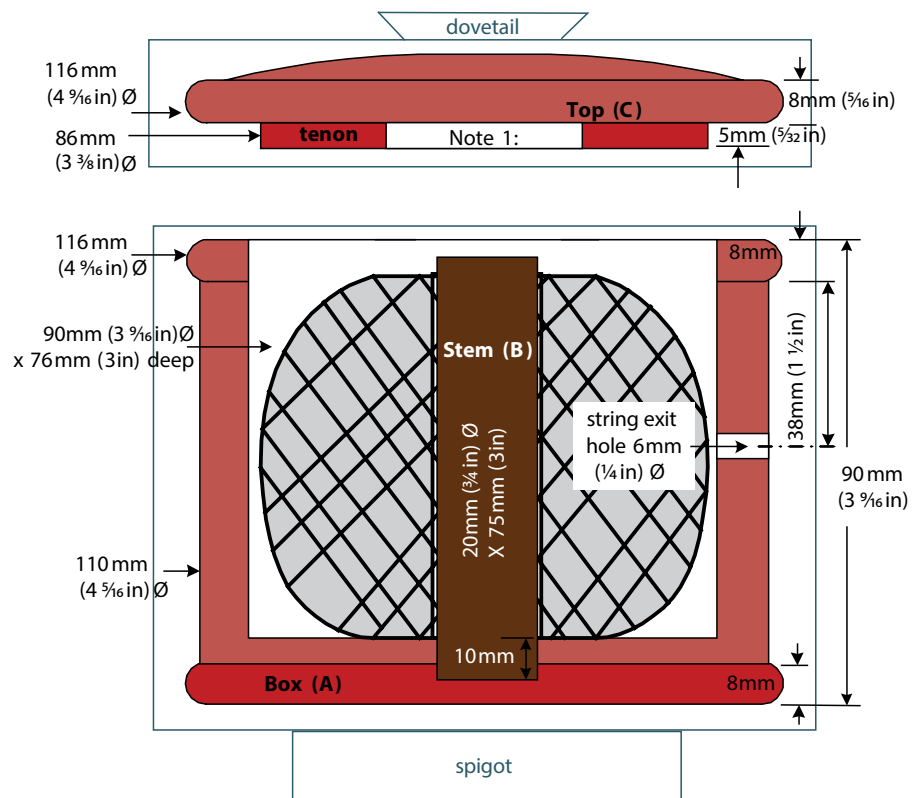
Holding by the dovetail, face off what will be the tenon to fit into the top of the box.

Note 1: The recess shown can be formed as a means of holding C to form its upper curve.

Alternatively, it can be held by its tenon to allow the top to be shaped.

Holding by your chosen method, shape as shown.

Sand and finish as required. •



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Woodturning

Issue 317 on sale 22 March

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Keith Lackner gives a step-by-step on making one-of-a-kind resin and timber 'infusion' castings

Mark Sanger looks at the processes involved for turning end grain bowls

Pat Carroll explores turning a square box

Andy Coates shows how to make spoons and ladles

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Adjustable support table

Chris Grace makes a jig for long drilling on his lathe



I have made several projects over the years that required accurate holes to be drilled in them, but were awkward to hold on my drill press or just wouldn't fit. What I needed was significant room below the chuck and a flexible means of holding the work accurately in line.

My lathe seemed a good candidate as I could remove the tailstock to accommodate long workpieces if necessary. A rise and fall table would make it ideal. In essence the jig required two slabs of MDF held apart by bolts. Good timber merchants will often cut the boards to size for you.

This project can be adapted to most lathes by altering dimension. I recently made myself a new jig due to a change of lathe.

It's important, for flexibility in use, that the bolts don't protrude above the table, so recessing them is essential. Also the bolts need to have as long a threaded portion as possible (alternatively use studding). The only critical dimension is the gap between your bed bars, as the guide blocks need to slide but have minimal sideways play. Clamp blocks are optional, but I find them useful if these are the same width as the lathe bed gap, but longer they will insert easily and swivel for clamping.

I chose to build this jig with the option of using it with the long dimension along the lathe bed and additionally across the lathe bed. This enables smaller projects to be drilled with the same jig.

For setting the jig up, I use a digital bevel gauge which can be set to zero along the lathe bed, then the table can be adjusted parallel. This is repeated across the bed. Once set, it's relatively straightforward to keep the table parallel by counting the turns of the wing nuts on each corner and keeping them in sync.

The table can now be set to support work at the desired height, and a clamp-on fence baton used to keep it straight. I use a drill chuck in the headstock with tailstock pressure, where I can, to feed the work into the bit. I typically stop the lathe for safety before withdrawing the wood from the bit. For awkward-shaped items I make a sled to hold them. If centred carefully on a board with parallel sides, this can readily be rotated to drill opposing holes very accurately and in line.

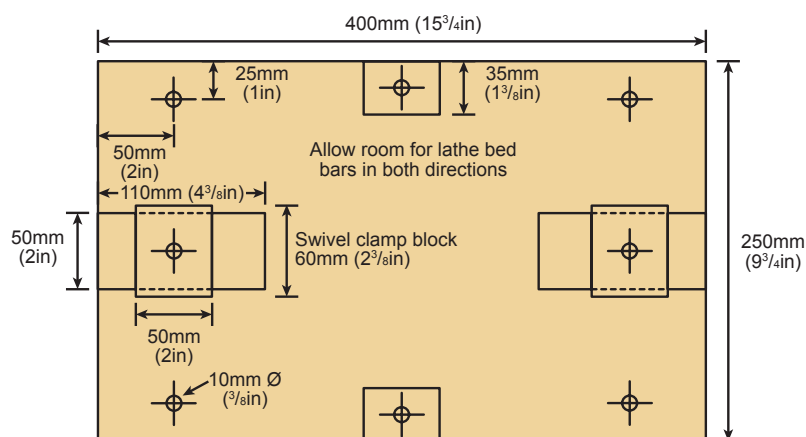
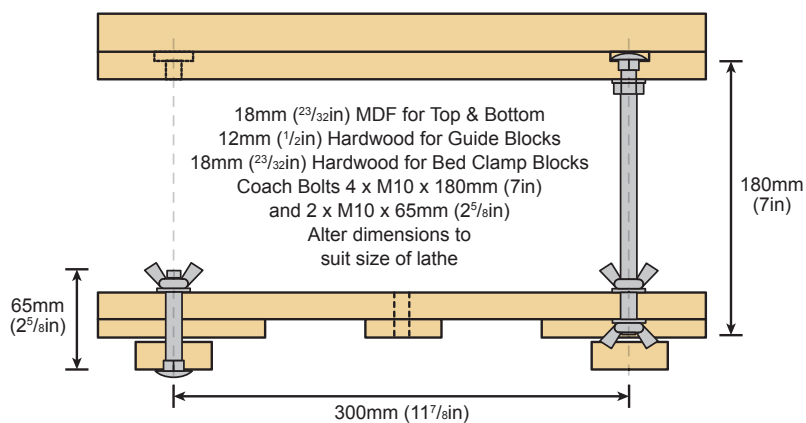
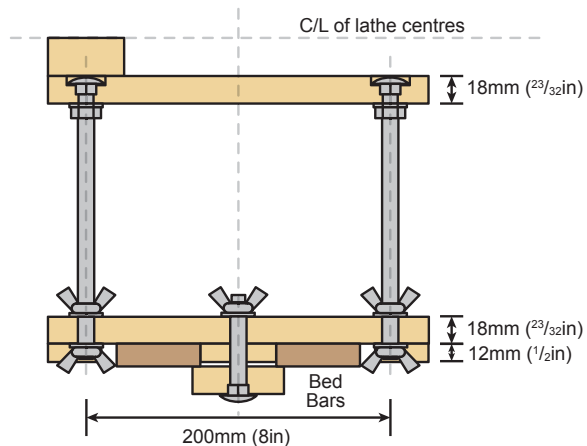
I find simple jigs make life easier, quicker and more accurate, so I make them whenever necessary. Remember to clamp the work being drilled in place for security. ●

TOOLS AND MATERIALS

- Personal and respiratory protective equipment
- Saw
- Drill & drill bits
- Clamps
- 2 pieces 400mm x 250mm 18mm MDF
- 2 pieces 50mm x 60mm 18mm hardwood
- 2 pieces 50mm x 110mm 12mm hardwood
- 2 pieces 50mm x 35mm hardwood
- 4 x M8 x 180mm (fully threaded) coach bolts
- 2 x M8 x 65mm coach bolts
- Wing nuts, nuts and washers
- PVA adhesive



The assembled jig on the lathe



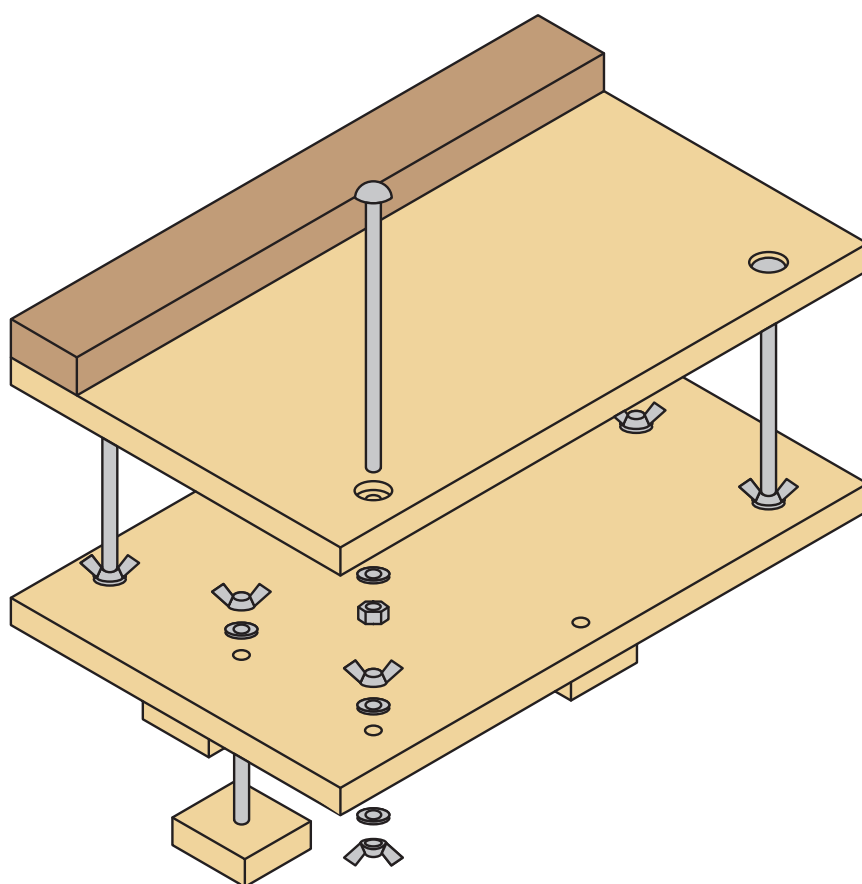
Make sure everything is level



Clamp in place guide blocks as required



You can drill both spindle and faceplate projects using this jig, but do clamp things in place for safety



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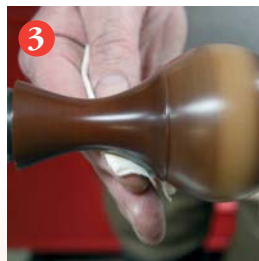
1 Friction Polish is a modified french polish containing a high percentage of shellac to give a very bright finish after application. Always shake the bottle well before use.

2



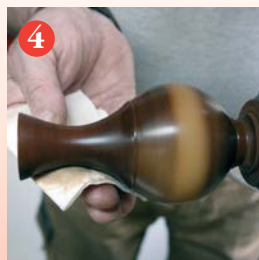
2 Friction Polish can be used straight on to bare wood, but for best results it should be applied over a sanding sealer. Any of the sanding sealers in the Chestnut Products range is suitable. With the lathe stopped, wipe a small amount of Friction Polish over the whole surface using Safety Cloth.

3



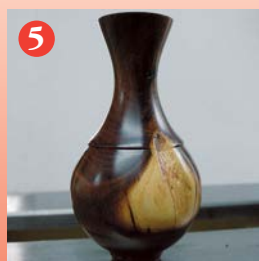
3 Start the lathe and buff to a shine before the polish has time to dry. Use the same piece of cloth which should still be slightly wet with polish.

4



4 Once the Friction Polish has dried properly (about ten minutes) you can increase the shine even further with Burnishing Cream; apply sparingly and smooth to a great shine.

5



5 Friction Polish is great for smaller items (up to about 6 inch diameter); it's harder - but not impossible - to get a good finish on bigger items. Friction Polish is a good decorative finish but not suitable for items that regularly come into contact with water or are subject to a lot of handling.

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Wire brushing turned work

Mark Baker explores using wire brushes to create texture on turned work

Creating texture on work is millennia old and there are numerous ways of adding that something extra that makes a difference. Wire brushes have been used to create texture on work for a long while but, contrary to common perception, it does not have to involve the use of heavy-duty stiff wire brushes.

The results are affected by the type of wire brush used, the type of metal used for the wires on the brush, the length and thickness of the wire bristles, the wood/material being worked on, the speed of travel of the brush across the work, the pressure used when applying the wire brush and the amount of passes over the work/time spent applying the wire brush to the work. Also, if using brushes in a drill or on a machine, the angle at which you present the brush to the work has an effect. The result is also affected by whether the work is stationary when wire-brushing it or revolving on a lathe.

Depending on the types of wire brushes used, they can remove bark off natural edge burrs and such like ready for turning, the thicker and heavier-duty steel wire brushes can be used to scarify a surface and, as we move to fine, less stiff wire brushes, they can be used to clean up after the heavier-duty wire brushes have been used or to create a texture in their own right.

Softer-bristle brushes can be used to create a gentle textured surface or to open up/remove some of the softer the grain on timber such as oak (*Quercus* spp.), ash (*Fraxinus* spp.) sweet chestnut (*Castanea sativa*) and similar, leaving a nice textured surface which can be left natural or filled with liming paste, coloured waxes or other fillers to create colour contrast.

Some brushes can be used on work after it has been burnt to erode away the more heavily charred or softer areas to create more tactile and visual appeal.



PHOTOGRAPH BY ANDY COATES

A scorched surface of an elm (*Ulmus procera*) bowl which was then wire brushed with a thin, long bronze-bristle brush



This wall sculpture by Andy Coates features textured timber to complement the turned and coloured areas



An oak platter by Paul Howard which was wire-brushed using a bronze brush by hand on stationary work, then sealed and liming wax applied when dry before buffing

Types of wire brush

Wire brushes come in many shapes and sizes. Some are suitable for use by hand, others can be placed in drills and be used end-on to or sideways to work and, depending on the type selected, can be fitted in/on machinery. I have wire brushes as small as 20mm in diameter with soft bristles for use in a drill/rotary powered hand piece and others up to 200mm in diameter for use on bench grinder-type machines. For the purposes of this article I feature wire brushes suitable for hand-holding and those for use in a drill. The ones I use in a hand drill are up to about 115mm in size.

The picture of the wire brushes shows at top left a hand brush with bronze wires. This is sold as a 'liming' brush for removing some of the softer parts of the

grain in open-grained timbers. The bronze bristles are of medium length and of a hardness that does not mar the harder surfaces of wood, instead only altering the softer sections.

The top right brush has brass-coated thick-steel wire bristles which are hard and create texture to various depths on both the hard and softer sections of wood. This one is presented side-on to the work. The two brushes in the middle are short steel wire too and are typically used end-on to work but can be used side-on too. The thinner unit is called an end-on brush and the other is called a cup brush. These show thick carbon steel wire and are very aggressive. Thinner wire versions are available.

The lower brush has thin brass



A selection of some of the types of wire brushes available

bristles and is very gentle in use.

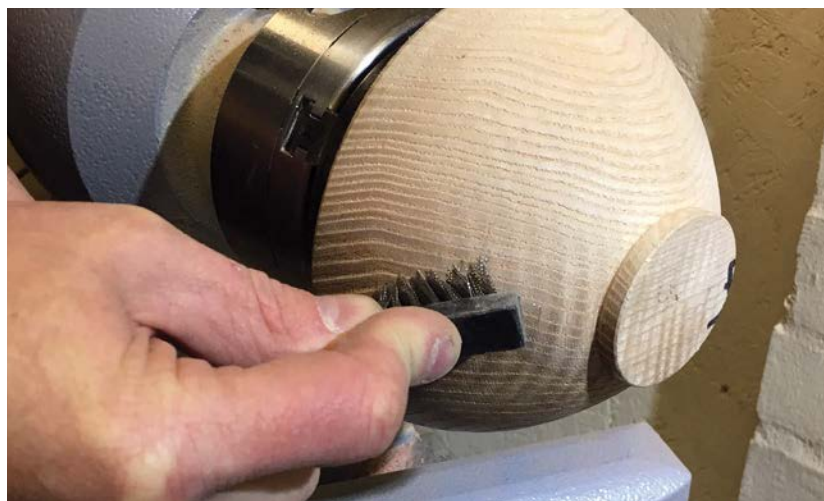
There are many more variants of brushes with thicker, thinner, longer and shorter bristles available so you will need to shop around and work out what is useful for what.

Using the wire brushes

Using wire brushes is not always about creating heavy erosion-like effects. That said, depending on the timber used, one can create such effects if one chooses.

For a comparison of the effect of the various brushes on the turned work, I used a piece of olive ash which was revolving at 600rpm in all instances. The differences between the textures created were affected by whether I used a wire brush in a drill or by hand, the type of wire brush used, the length of the wires, the pressure and how many passes or how much time was spent wire-brushing the surface.

Steel is the hardest of the wires found in brushes, followed by bronze, brass and then copper. No matter the type of wire used, the shorter and thicker the wire type the more aggressive the effect created when compared with thinner, longer wired versions of the same material.



A fine steel-wired hand brush worked along the softer areas with minimal marking on the harder areas of the wood



The coarse brass-coated wire brush being used in a drill against ash with the rotation of the brush running anti-clockwise



The result of the brush moved across the surface of the wood for 10 seconds with the lathe speed at 600rpm



The bronze hand brush being used against the same piece of ash



The result of the bronze brush moved across the surface of the wood for 10 seconds with the lathe speed at 600rpm



The thin brass-wired brush being used against the same piece of ash



The result of the thin wired brass brush worked across the surface of the wood for 10 seconds with the lathe speed at 600rpm



The steel wire cup brush being used against the same piece of ash



The result of the steel-wired cup brush used edge-on and moved across the surface of the wood for 10 seconds with the lathe speed at 600rpm.

Refinement

I know it may seem strange, but I have included wire brushes as refinement tools. If you use a coarse steel wire brush, you might end up with the sculptural look you want, but not necessarily the surface finish you desire. Of course, you can use rotary bristle brushes, fine abrasives or, on finer textures, the non-woven abrasive pads and such like to refine, but sometimes all a rough-textured surface needs is going over with a slightly finer/softer wire brush to clean it up a little.



An assortment of items that can be used to refine a wire-brushed surface



Wellingtonia (*Sequoiadendron giganteum*) bowl I made featuring a textured exterior created using a steel wire rotary brush, which was then refined with a bronze brush and radial bristle brushes



Here is a close-up of the texture on the exterior of the wellingtonia bowl. The timber is so soft that the softest areas were quickly removed with the coarser rotary wire brush, but note how that left some striations on the harder areas and some deep scoring on the softer areas. What you see here is much more refined than when the first steel wire brush was used. It is a similar effect to sandblasting



This redwood (*Sequoia* spp.) wall plaque by Andy Coates shows contrast between wire-brushed areas and smooth turned areas



This bowl made from ash was turned, sanded, wire-brushed with a long-wired bronze brush to open up the grain and then sealed with sanding sealer, prior to spraying with black lacquer. It was denibbed and then had gilt cream applied and buffed to leave only the opened grain filled. Note the absence of any scratch marks from the wire brush. If any are left from the brush or the sanding, the gilt cream will highlight them



A scorched, wire-brushed and verdigris waxed ball created by Paul Howard

Conclusion

I acknowledge that, as with many decorative effects, wire brushing is not to everyone's tastes, but you can see that the effects of wire brushing can be aggressive or subtle. Of course one needs to experiment with a variety of brushes on various timbers to see what can be done. I didn't even touch

on cleaning up bark edges and burrs, removing rotted knots and opening up voids and so on, but what seems like a crude method of working on the wood – and it can be if required – can be used to create the most wonderful pronounced or subtle effects inexpensively. ●

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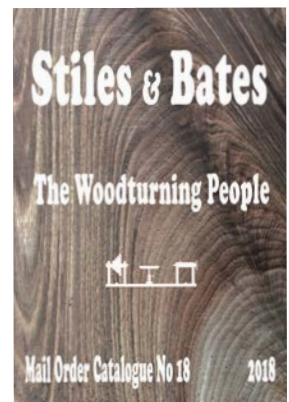
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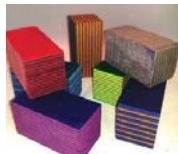


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Ise & Nene Valley Turners

Sue Cattell shares with us the growth of a new club

Since the launch of our new club, Ise & Nene Valley Turners, in August 2015 we have grown in leaps and bounds.

Starting with just five enthusiastic turners with a burning desire to make it succeed, the club has grown month by month. We had no funds so it was going to need a lot of help to get going. This came with the aid of sponsorship from the AWGB in the form of a lathe and room fees paid by our local council, Kettering Borough Council.

We did some intensive advertising on radio, magazines, posters and by word of mouth.

Our launch evening was very encouraging and by our September meeting, which was our first demonstration given by John Johnson, we had 16 members signed up – we were thrilled with the interest we had received.

This grew steadily and, with a full programme of club nights arranged for 2016, we carried on with an increasing membership. In January 2016 we decided to apply for a National Lottery grant and a local council grant.

By February 2016 we had 25 signed-up members and in March we learned that we had been successful with both grant applications – now we could buy some equipment for the club. We also decided to set up a website to help advertise the club as well as a Facebook page.

We continued to press on with the advertising in local magazines and in the form of posters and word of mouth and by August 2016 – a year since the club launched – we had 30 members, which was more than we could have ever hoped for. We also had two lathes and all the necessary equipment required, plus a fully operational audio-visual system thanks to our technical guru, Mark Hogan. This has been a great benefit as we can operate hands-on members' nights to help with different woodturning techniques.

Our first all-day demonstration with Mick Hanbury was held in October 2016 and was a great success. Mick was brilliant and a great time was had by all.

Since then we have had many great demonstrations by professional woodturners and feel that we have

all benefitted from them sharing their expertise and tips with us. It gives us the incentive to go home and try for ourselves. Many times we have been shown techniques to make our turning more successful.

When the AWGB provided us a grant for its 30th Birthday Bash we decided to book another all-day demonstration led by Les Thorne – another great success. We have continued to grow in membership and have outgrown our previous venue. The new venue is: Cranford Village Hall, Grafton Road, Cranford St. Andrew, Nr. Kettering, Northants NN14 4JE.

We always welcome new members of all levels, whether novices or experienced turners.

We are a very friendly club and you can be guaranteed of a very warm welcome. Our annual subscription is £75 (this includes £18 affiliation to the AWGB). New visitors can come to one of our club nights for free before committing to membership.

Web: iseandnenevalleyturners.co.uk ●

PHOTOGRAPH BY MARK BAKER/GMC PUBLICATIONS



Our stand at Woodworks@ Daventry show



Kevin Devine's marbled platter



Club group watching the Christmas demonstration

Steve Coke demonstrating
at the Christmas meeting



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OUR CONTRIBUTORS



ANDY COATES

Andy is a professional woodturner and has a workshop and gallery in Suffolk. He mostly makes one-off pieces, but is just as likely to be doing small-batch runs, antique restorations or any number of strange commissions. He also demonstrates and teaches turning.

cobwebcrafts@btinternet.com
cobwebcrafts.co.uk



CHRIS GRACE

Chris has been turning wood since 2008. He has enjoyed making things with wood and metal all his life alongside his work commitments, but the discovery of the woodlathe reignited his enthusiasm for working in wood. Chris sells his work by commission, demonstrates and provides instruction.

Chris.Grace@NotJustRound.com



CHRIS WEST

Chris has spent a good deal of his time designing, turning and writing on the subject of salt and pepper mills. His latest book, *Adding Spice to Woodturning: 20 Salt, Pepper & Spice Shaker Projects for Woodturners*, was published in 2017 by Artisan Ideas in North America.

www.westwoodturnery.co.uk



ERNIE CONOVER

Ernie is best known for teaching and writing about woodturning, as well as designing and marketing the Conover lathe.

erconover@conoverworkshops.com



GEOFFREY LAYCOCK

Geoffrey is a Chartered Safety Practitioner, Chartered Ergonomics Practitioner and Fellow of the Royal Society for the Protection of Health and has written extensively for our sister magazine, *Furniture & Cabinetmaking*.

geoffrey@otterconsultancy.co.uk



JOHN PLATER

John has woodturned in the UK since his schooldays but in a more meaningful way since taking early retirement 10 years ago. He likes making decorative hollowed pieces from interesting woods with holes, sap and bark. He thinks that he's OK with a bowl gouge but useless with a skew.

www.johnplater.co.uk



MARK SANGER

Mark pursued woodturning full-time in 2004, making one-off sculptural pieces that include colour and texture as well as pure woodturned forms. He demonstrates and teaches in the UK and abroad and is the author of *Turning Hollow Forms* from GMC Publications.

www.marksanger.co.uk



PAT CARROLL

As a builder/carpenter, Pat has always loved working with wood. In 2002 he took a woodturning class and was very quickly hooked. With the influence of many great artists he is keen to explore the combination of texture and colour in his work.

slievehui@woodturning@gmail.com



PAUL HOWARD

Paul has been turning for many years. He teaches and also demonstrates turning and loves to experiment and explore new things in turning. He makes a wide variety of jigs and accessories for turners. His background is in electro engineering.

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RICHARD FINDLEY

Richard discovered woodturning while working for his father as a joiner. He makes all kinds of work to commission, and offers demonstrations and a range of woodturning supplies.

richard@turnersworkshop.co.uk
turnersworkshop.co.uk



STUART THOMAS

Stuart has been woodturning for more than 25 years, doing work for joinery and kitchen firms and the National Trust as well as demonstrating. Living with his wife Patricia in Mold, North Wales, he now spends time turning smaller items involving thread-chasing.

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Community letters

Here are some letters the Editor has received from you, the readers

Tiered carousel

Hello Mark,

I started this carousel project in August, just before Colwin's article appeared in print. It was interesting to see Colwin's version. It was a lot of fun making my carousel, although I would not want to make it again. It was with great relief that I finally finished it before the rapidly looming deadline of Christmas. It was a present for my granddaughter and hopefully will be a family heirloom. While there were

no pieces that required any complicated turning, there were more than 120 individually turned components. Accuracy was essential throughout in order to ensure that everything was square and uniform and that the rotating parts did not catch anywhere.

I modified a glass bead to make the bearing for this project.

Dick Simpson



Festive fun

Hi Mark, I was reading the latest *Woodturning* magazine and in your editor's message you inquired about what kind of ornaments we were making. I am sending a photo of the 13 named snowmen I gave to our Christmas dinner hosts. They were a hit with adults and children alike. Keep up the great magazine. Best wishes for the new year.

*Anne from the
West Coast of Canada*

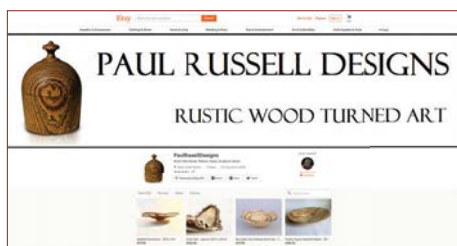


We searched the internet for the best, most interesting and fun websites, blogs, pins and pictures, so you don't have to

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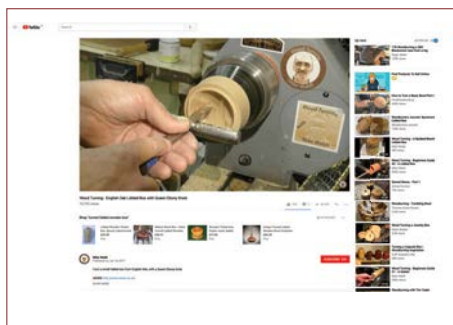


It is always nice seeing what people are making and, in this case, selling too. Paul has a delightful variety of turning for sale. It is well worth looking at the Etsy site, not only to see what is being made and sold, but also to see the variety of all things woodturning and woodworking-related.

YouTube

MIKE WALDT

tinyurl.com/yab34rsk



Mike Waldt shows how he made an English oak lidded box with queen ebony knob. Mike uses a mix of real time and speeded up sections to show what he does to make the piece. Mike's relaxed style of presentation is refreshing and the box is a nice, well-made example.

Website of the month

CHICAGO WOODTURNERS

www.chicagowoodturners.com



The Chicago Woodturners site is informative and easy to navigate so people can explore it easily. The gallery has a great display of work to peruse and the newsletters are full of information and also feature excellent pictures of the turnings people have made.

From the forum

Here we share with you the pieces that readers have posted on our *Woodturning* forum. If you are interested in your piece appearing here, or would simply like feedback and advice on your work, visit **www.woodworkersinstitute.com** and click on the forum button.

ITALIAN OLIVE BOWL

www.woodworkersinstitute.com/forum/italian-olive_topic21682.html

Neil Lawton posted a picture of his latest bowl and commented: 'As usual the blank had lots of splits and cracks, oh, and holes!'

9¼ inch x 3½ incj finished in Danish oil.

C&C welcome as always



CHF commented: The oil treatment has made that figuring 'pop', always a shame that to make use of the item when it's a bowl results in 50% of the beauty being hidden from view.

Dalboy responded with: That is one fantastic piece of wood Neil, really lovely grain. Nicely turned.

All wrapped up

Geoffrey Laycock looks at using cloth for polishing work

One of the most basic of finishes we use on turned work is friction polish. It's easy to apply, cheap, provides a reasonable and quick finish and seems to be one of the first to be demonstrated to new turners. Recently published books on turning techniques and much training resource material may say that only non-woven safety cloth should be used when carrying out this technique and that is sensible advice. But can other materials be used safely with care and a little prior consideration? Obviously other finishes may also be involved.

We have written before about clothing, hair and jewellery getting caught up in rotating workpieces or on chuck jaws and suchlike – a hand-held cloth poses the same issues. Taking a spindle turning as one example, it may surprise some people that the diameter is a significant factor. As a guide, we always used 1in/25mm – below this the risk of hair getting caught dramatically increases as diameter decreases, compared with a lower chance of 'capture' as the diameter above 1in increases. It does not matter how smooth the surface of the rotating workpiece is, a highly polished 20mm steel bar is as much a risk as a slightly rough wood spindle, something to do with air boundary layers – beyond me.

Now using ordinary cloth – and I have a few old shirts that become small squares in the workshop when my personal clothing and dressing manager isn't looking – is an increased risk but one we can manage down to a similar acceptable level. If it gets caught it most likely will not tear in the way safety cloth is intended to but the answer, as we have written so many times, is assessing what is about to be done, identifying what the cloth can be caught by and removing those hazards if possible, then using the cloth in a safer manner. These principles also apply to using paper towel, which can be very tear-resistant, and include:

- Removing the toolrest from the area you are working.
- Using the slowest speed that works.
- Checking clothing, hair and jewellery.
- Using small pieces of cloth with no loose, straggling fibres.
- Only the surface being used projecting out of the fingers.
- Having no dangling lengths.



PHOTOGRAPH BY MARK BAKER/GMC PUBLICATIONS

- Not wrapping cloth around fingers – doing this with safety cloth may still give you a trip to casualty.
- Using inside a bowl? Well, depends on the size and shape – and not wrapping around fingers.
- Using a friction drive which negates the effects of getting entangled as presumably the workpiece simply stops.

It's perhaps an appropriate time to also mention using hand-held abrasives. The risks are not the same overall but working inside a bowl or narrow form

are. Also, strips of abrasive being used over a spindle can get caught easily. This itself is a significant cause of injury in the metalworking sector and it is worth looking at the health and safety guidance.

FURTHER INFORMATION
www.hse.gov.uk

Engineering Information Sheet 2
The use of emery cloth on metalworking lathes

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ON TEST

Easy micro tools

PHOTOGRAPH BY MARK BAKER/GMC PUBLICATIONS



Walter Hall puts the Easy Wood micro tools to the test

Easy Wood Tools was one of the first makers to offer tools with replaceable carbide tips and this set of three micro turning tools certainly lives up to the name. They are easy to use and while, like all such tools, they are essentially scrapers rather than true cutting tools they are remarkably effective in use.

While the seasoned turner skilled in the use of traditional tools might find little use for these, for anyone starting out, the learning curve for using them is much less steep and they provide an opportunity to gain confidence on the lathe without the catches often associated with the early stages of learning to turn. That is not to say that the use of these tools needs be restricted to beginners, though.

Designed for small work on small lathes they can produce a fine finish and are particularly effective on end-grain work, such as making small boxes and on acrylic materials.

In use

I tested the Easy rougher, which has a

square cutter, on a small piece of cross-cut mahogany and, when used in the recommended manner with the tool horizontal and the cutter on centre, with a light touch it produced a clean surface and square shoulders with little or no tear-out.

The round finisher, which has a round cutter, was effective on the inside of bowls and for shallow curves on spindles. On a very dry and chippy piece of oak it produced an acceptably smooth surface that would be ready for sanding.

The detailer, with a pointed cutter, is intended, as its name suggests, for fine detailed work such as small beads and coves and I found it easy to use for this purpose though, again, it produced a finish slightly inferior to that from a skew chisel or spindle gouge. So there is, to some extent, a compromise to be made between extreme ease of use and the best possible finish.

Conclusions

In conclusion, these tools do what is intended of them well, providing the beginner with an easy way into woodturning without the need to



Easy Wood micro finisher in use



Easy Wood micro rouher in use

learn the skills required for traditional tools and offering an additional resource that will prove useful to many turners, whether doing small work on small lathes or just looking for a simple solution to a tricky cut.

- The tools are 235mm long
- Handles are maple
- Tool shafts are 85mm long and made from 8mm square bar

Easy micro three-piece set comprises:

- 1 Easy micro rougher – square end cutter
- 1 Easy micro finisher – round cutter
- 1 Easy micro detailer – pointed cutter
- 1 free extra cutter with 1in radius
- Hex key

Price \$239.99

Contact: Easy Wood Tools for stockist information

Web: www.easywoodtools.com

PHOTOGRAPH BY WALTER HALL

PHOTOGRAPH BY WALTER HALL

TURNING MATE MOBILE TURNING TOOL CADDY

Ron Brown's Best has introduced a mobile tool storage system. It is designed to hold up to 24 tools in holes in which you place rubber pods to suit large or small tools to safely hold them in place. You can also place three tools in the notched Vs in the rack and move the whole system on swivel casters. Supplied with 12 rubber pods. Extras rubber pods are available.

Price \$89.99

Contact: Ron Brown's Best
www.ronbrownsbest.com



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Henry Taylor Tools has introduced a 20mm spindle roughing gouge to its M42 range of Stay Sharp tools. Unlike other types of high speed/PM tool steel that sacrifice extreme edge retention for the ability to be honed to a keen edge, or vice versa, M42 Stay Sharp tools provide both for optimum performance you can count on. Made in England

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Contact: Henry Taylor Tools
for stockist details
Web: www.henrytaylor tools.co.uk



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- Thread: M33 x 3.5 tpi
- Taper: 2 Morse taper
- Weight: 231kg

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We have been told that throughout March and April there will be a special deal on the MAXI-1.

Contact: Record Power for stockist details

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Contact Martin Saban Smith

Web: www.msabansmith.com



Conversion chart

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3mm (1/8in)
4mm (1/32in)
6mm (1/4in)
7mm (9/32in)
8mm (5/16in)
9mm (11/32in)
10mm (3/8in)
11mm (7/16in)
12mm (1/2in)
13mm (1/2in)
14mm (9/16in)
15mm (5/8in)
16mm (5/8in)
17mm (11/16in)
18mm (3/4in)
19mm (3/4in)
20mm (3/4in)
21mm (13/16in)
22mm (7/8in)
23mm (23/32in)
24mm (15/16in)
25mm (1in)
30mm (1 1/8in)
32mm (1 1/4in)
35mm (1 3/8in)
38mm (1 7/8in)
40mm (1 5/8in)
45mm (1 3/4in)
50mm (2in)
55mm (2 1/8-2 1/4in)
60mm (2 3/8in)
63mm (2 5/8in)
65mm (2 5/8in)
70mm (2 3/4in)
75mm (3in)
80mm (3 1/8in)
85mm (3 3/8in)
90mm (3 1/2in)
93mm (3 3/8in)
95mm (3 3/8in)
100mm (4in)
105mm (4 1/8in)
110mm (4 1/4-4 3/8in)
115mm (4 1/2in)
120mm (4 3/4in)
125mm (5in)
130mm (5 1/8in)
135mm (5 1/4in)
140mm (5 1/2in)
145mm (5 3/8in)
150mm (6in)
155mm (6 1/8in)
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165mm (6 3/8in)
170mm (6 3/4in)
178mm (6 5/8in)
180mm (7in)
185mm (7 1/8in)
190mm (7 1/2in)
195mm (7 3/4in)
200mm (8in)
305mm (12in)
405mm (16in)
510mm (20in)
610mm (24in)
710mm (28in)
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1220mm (48in)
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1420mm (56in)
1525mm (60in)

THOR FILTERS

British company Thor Filtration has recently released a range of high quality ambient air filters similar to those previously marketed under the Microclene brand name.

The TF810 model shown has a maximum depth of approximately 130mm and a frontal size of 300mm square, and provides approximately 750 cubic metres per hour of air throughput. Its compact cuboid form can be mounted flush on to a wall or ceiling or can be positioned on its base where required.

The Toolpost offers the complete range of Thor Filtration products, including filter media compatible with the Microclene filter units, now no longer available.

Price TF810 ambient air filter costs £280.00

Contact: The Toolpost

Web: www.toolpost.co.uk



M42 RAZOR EDGE TURNING TOOLS

Crown Hand Tools has just extended its range of M42 cryogenically treated tools by introducing a 20mm skew chisel and a 5mm diamond-parting tool. Both have 254mm handles and are an overall length of 314mm.

Prices

20mm skew chisel

£56.75

5mm diamond parting tool

£63.00

For stockist information contact:

Crown Hand Tools

Web: www.crownhandtools.ltd.uk/



ON TEST

Trend slow spiral HSS twist drills

Mark Baker tries out some new bits

Like others, I have used twist drills for many years for drilling timber and, in the main, they work well. There is, however, a risk that clogging of the spirals can occur quite quickly when drilling wet or damp timber and also on end-grain work.

I recently spotted these slow spiral bits from Trend, which commented on its site that: 'Slow spiral is sometimes preferred for drilling end grain in wood.' It also said: 'Ideal for operations in open-grained material.'

Asking a few questions about them, Trend commented that they are created for use on some of its countersinks. Looking at the drills one can see that the spiral is different in looks to a typically HSS drill bit. The spiral does not have as many twists around the shank – this is what 'slower' means in the name of the bits. The smallest size available is 3.2mm ($\frac{1}{8}$ in) and the largest is 11.11mm ($\frac{7}{16}$ in).

In use

I set about using them on the lathe to create pilot holes to a specific depth required for various-sized projects, on both faceplate and spindle-grain projects on a variety of dense, close-grained timbers. Some were dry, some damp and others were naturally oily/resinous. I also used them on more open-grained timber and softwoods.

When using them on end grain I found they were easy to use and they cleared the waste quicker and more easily than

conventional bits. Best practice is always to remove the drill regularly to prevent excessive build up and clogging, but I didn't experience any jamming/binding up of waste wood in the twists, although I did extract the blade at least once on each project to have a look at what was happening nearer the front of the bit, as I slowly fed the bits into the various woods. I also found that they worked well on faceplate grain.

Since I do other woodworking projects too, I used them on end and side grain of boards to drill accurately for dowel inserts and screw holes. I found they worked well for that too when held in a drill press, drill chuck or a hand drill. I must admit to not testing them on metal, but with them being HSS I am now intrigued about that and will try them on metal at a later date.

Conclusions

I liked these drills a lot. I also used them on acrylic and polymers and didn't experience any deviation from the central cutting line, which was wonderful when drilling thin needle cases with them. The bits work very well, are efficient and are well worth looking at.

- Sizes from 3.2mm ($\frac{1}{8}$ in) 65mm long – 11.11mm ($\frac{7}{16}$ in) 144mm long

Prices from £4.23 – £26.00

Contact: Trend Machinery & Cutting tools for stockist information



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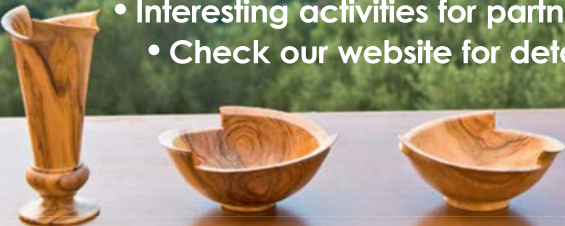
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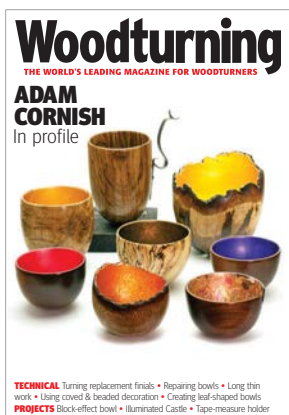
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Lidded pine cone box

Keith Lackner shares with us one of his latest fusion castings

PHOTOGRAPH BY KEITH LACKNER



This pine cone lidded box was inspired by all the hiking my girlfriend Jessica and I have done over the past five years.

We have travelled all over the United States and have had the opportunity to hike in some of the most amazing places. Whether it was in Grand Teton, Yosemite National Park, the Grand Canyon, the Smoky Mountains, or walking local trails in Illinois, one thing is very clear to me. Nothing inspires me more than the beauty of nature. Every place I go I get inspired to make a new creation, Whether it's from a local tree that I see, or some of the amazing colours

Mother Nature has made for us, nature is a huge influence in my work. These pine cones were collected under a tree in late September on one of our walks around Dwight, Illinois, where we both live. The pine cones were mixed with resin that I dyed a series of blues to match the sky of an autumn afternoon. A claro walnut (*Juglans hindsii*) burl base and top were added to help keep it with the nature theme of the piece.

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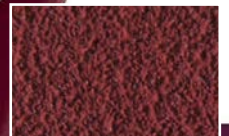
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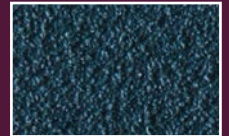
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