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An insight into production turning methods

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Terry Martin looks at traditional woodturning in China Glossary of commonly used woodworking terms

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Glenn Jucas

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# The politics of wood



been on extensive timber hunts for my '365 Turnings' challenge and also

replacing my diminishing stock of timber, I was conscious of how much timber prices have gone up – some in particular have jumped up rapidly in recent years.

Timber is a material that is at the heart of what we do and the conversations about timber supply and cost have caused people to baulk. Of course, it is a material like any other and subject to price changes but it does seem, certainly in the UK, that the last two years have seen hefty increases in timber prices, in terms of trees and pre-dimensioned blanks. Still, timber is a commodity to be traded the same as anything else and if one is using exotics, then some of the costs involved centre around transportation. Some of the timber travels thousands of miles before we get hold of any. The scarcity of the timber will play a part as well as legislative compliance as far as tracking to ensure that it comes from a managed and legal source. There are also a few other costs.

Homegrown timbers – from the UK – seem to be becoming scarcer. Some companies are able to buy 'local' timber but claim the supply is erratic and makes for difficulty in holding a constant supply of certain timbers. Many I have spoken to are bemoaning the fact that we seem to have a lack of a sustainable volume network of 'homegrown' trees and also that we are losing out on trees that do come down to go into wood burners.

I went to a place recently and some of the 'staples' of wood for my turning came from mainland Europe due to the ability to guarantee continuity of supply. UK-based timbers were only stocked when possible.

After asking a few questions, I am led to believe that we as a country have a very low tree coverage in relation to mainland Europe. Mainland Europe it seems has an average tree cover of around 40%, whereas the UK has 13% with England only having 10%. The above statistics explain a lot.

I am not entering into the politics of what should be done about our forestry and management thereof, but I know that it is a resource that should be treasured and valued, and if that means more needs to be done to ensure sustainability and a consistent and sustainable supply, then so be it. That said, there are already some great organisations working hard in this area – see more details below.

A few of the items created so far as part of my '365 Turnings' challenge



#### **WOOD ORGANISATIONS**

Confor

Web: www.confor.org.uk

CLA

Web: www.cla.org.uk

**Woodland Trust** 

Web: www.woodlandtrust.org.uk

**Woodland Heritage** 

Web: www.woodlandheritage.org



Woodworkers Institute website (www.woodworkersinstitute.com) is thriving. It would be great if you took a look and participated in the various discussions and competitions in our community.



Cover image by Kurt Hertzog Kurt Hertzog explores the subject of inlays

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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.

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A mixture of press releases and reviews showing the latest tools and products on the market

### NEWS, LATEST PRODUCTS, MAGAZINE UPLOADS & EVENTS

can all be found on www.woodworkersinstitute. com. These all appear on the magazine homepage and you can see a bigger selection by scrolling down the page and clicking on the individual stories. We also have an extensive online archive for you to browse



### The World of Turning for Beginners and Superior Turners

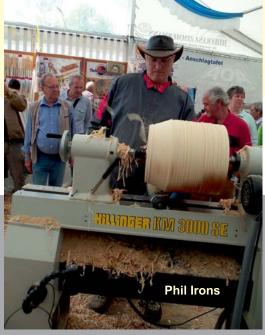
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# Round & about

We bring you the latest news from the world of woodturning as well as letters from the Woodworkers Institute forum and important dates for your diary from the woodturning community

### Art in Action 2014

Art in Action, which takes place from 17–20 July, 2014, is a festival of fine art and master craftsmanship – with a difference. A small village of marquees, laid out at Waterperry Gardens, contains 400 artists, teachers, performers and musicians. An average of 25,000 visitors come over four days each July, to watch and learn from demonstrations in painting, sculpture, printmaking, ceramics, calligraphy, illustration, glass, metalwork, jewellery, textiles, woodwork and more.

Over 3,000 people take a practical class in an eclectic range of disciplines including pottery, glass engraving and marquetry. Lectures curated by NADFAS – National Association of Decorative and

Fine Arts

Societies – give greater insight into historical and contemporary artistic practices. Live classical and world music is performed around the site and in the open air theatre, where you can also see dance from around the globe. Alternatively, visitors can just relax in the beautiful setting of Waterperry Gardens and soak up the atmosphere.

Art in Action showcases an unparalleled variety of artists from numerous disciplines, featuring old masters and new faces – always with a focus on quality. It champions art in all forms so you can find everything from traditional crafts to contemporary art.

#### **DETAILS:**

When: 17–20 July, 2014
Where: Waterperry House, Waterperry,
near Wheatley, Oxfordshire OX33 1JZ
Contact: Art in Action
Tel: 020 7381 3192

Web: www.artinaction.org.uk

There will be a wide variety of items made from wood at this year's event

## Coombe Abbey Woodturners Club hold first event

Coombe Abbey Woodturners Club was re-established in August 2007 and offers at least two free lessons to the general public. The two free lessons are for the general public to use when they wish, but because of limited space, they must be pre-booked. Lessons are given on Tuesdays and Sundays.

The club opens its doors to members on four days a week. The club

demonstrates the facilities and skills to showcase the art of woodturning. Since opening, the club adopted the Warwickshire and Northamptonshire Air Ambulance as their charitable organisation and in 2013 raised £2,400, thanks to all members and public for the support.

On 13 September, the club is launching its first event – the Coombe Abbey Woodturners and Festival of

Crafts – in conjunction with Coventry City Council and the national Heritage Open Days.

#### **DETAILS:**

When: 13 September, 2014

Where: Coombe Abbey Country Park, Brinklow Road,

Coventry, Warwickshire CV3 2AB

Contact: Coombe Abbey Woodturners Club Email: coombeabbeywoodturners@gmail.com Web: www.coombeabbeywoodturners.co.uk

## More turned holiday gifts

#### Handmade 'Free Little Library'

n your leader in the December 2013 issue of *Woodturning*, you said you would like to hear what we are making our family or friends this year 'even if it is not turned work'. In past years I have been very busy during the holidays at my wood lathe, but this year my wife asked me to make a different kind of gift for her parents – a library.

We heard about the 'Little Free Library' organisation – www. littlefreelibrary.org – whose mission is to create a 'gathering place where neighbours share their favourite literature and stories' from one of our neighbours. My in-laws live in a retirement community in Sebring, Florida and their neighbours are always stopping by to borrow the

books my wife sends them from Orlando. So we installed this library in their front yard between Christmas and New Year's and a neighbour stopped by the first afternoon and borrowed a book. The library holds about 30 books. We are hoping that this will create more community in their neighbourhood as neighbours stop by to 'take a book or return a book'. We felt this was a fitting gift in the spirit of the holidays and hope that more 'little free libraries' sprout in other parts of their community.

On another note, thank you for the great job you do editing *Woodturning* magazine. I look forward to receiving each issue

Very truly yours, Matt FitzGibbon



The handmade 'Free Little Library'

Brendan's hand-

#### Travel jewellery box

Hello Mark,
In the December issue of
Woodturning, you asked for readers to
send photos of handmade gift projects.
I have just completed a one-off project
of a travel jewellery box.

My friend Garrett, who lives in Manila in the Philippines, asked if I was interested in making a travel jewellery box as a birthday present for his wife. This was a very long-distance order to be completed, but I was very interested in making it. He gave me guidelines and the box was to measure  $255 \times 200 \times 125$ mm high with a fitted lock. The lid was to open 90° with a fitted brass plate for an inscription on the top of the lid. The inside of the box was to be lined with red felt with one removable tray. All corners on the outside of the box were to be rounded edges. I made the jewellery box from mahogany (Khaya ivorensis) with

brass quadrant hinges and an inlaid sycamore (*Acer pseudoplatanus*) lid. The box was finished with three coats of thinned out yacht varnish for durability and a light coat of wax.

Garrett came back to Ireland for Christmas with his wife and son and I posted the jewellery box to Dublin from Limerick. Garrett was very pleased with the jewellery box when

he collected it, just in time to present it to his wife on her birthday, just before Christmas.

Regards, Brendan Collins

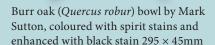




Textured and coloured sycamore (*Acer pseudoplatanus*) box with diamond texturing, by colinjp



Japanese-style bowl by Dalboy, cherry (*Prunus spp.*) and oak (*Quercus robur*) with a piece of copper



## Female turners in Spain

Dear Mark,
I was really surprised and upset when I read the comment that appeared in the winter issue of Woodturning regarding the treatment suffered by the female woodturner.
I would like to share my experience.

I am a female beginner woodturner who is learning in Les Forgaxes – Asturian for shavings – Friends of Wood Association in Asturias, Spain. The association is formed of 50 partners and I am the only woman in it, but the spirit of camaraderie, enthusiasm and pleasantness that I could apprehend from the very first day did not change when I joined in as a group member. The association

organises periodic meetings, workshops and even an annual conference with some guest turners, and I have never felt undervalued because of my sex. Even when that comment appeared in *Woodturning*, our turner leader was worried about my feelings within the group.

I can only talk about positive experiences in the woodturning world, but it is a pity that not all of the turners can say the same. Since I completely agree with Andy Crook that a turner is a turner, I would extend it to this: a person is a person, regardless of age, sex or colour.

Best regards, Alejandra Calvo-Díaz

# Weald of Kent Craft & Design Show celebrates its 30th anniversary

The Weald of Kent Craft & Design Show is celebrating its 30th anniversary this year, taking place from 3–5 May at Penshurst Place & Gardens, Kent. Visitors can join the festivities, shopping from a selection of handmade crafts from leading British artisans while listening to live music and enjoying a delicious array of fine food, including strawberries and champagne or an afternoon tea.

Offering a beautiful range of bespoke items for the house and garden, over 250 craftspeople will offer something to suit all tastes with glassware, jewellery, clothes, paintings and much more. There will be a wide range of traditional craft demonstrations, including pole lathe turning, hazel

hurdle and spar making. The Informed Design Graduate Marquee gives you the chance to discover a range of unique items from up and coming, newly qualified designers. There really is something for everyone at this show.



Some of the handmade delights you can expect to see at the show

#### **Conversion chart**

2mm (5/64in)	35mm (13/sin)
3mm (1/8in)	38mm (1½in)
4mm (5/32in)	40mm (15%in)
6mm (¼in)	45mm (1¾in)
7mm (%32in)	50mm (2in)
8mm (5/16in)	55mm (21/8-21/4ir
9mm (11/32in)	60mm (23/sin)
10mm (3/sin)	63mm (2½in)
11mm (7/16in)	65mm (25%in)
12mm (½in)	70mm (2¾in)
13mm (½in)	75mm (3in)
14mm (%16in)	80mm (31/sin)
15mm (%16in)	85mm (31/4in)
16mm (5/8in)	90mm (3½in)
17mm (11/16in)	93mm (3 <sup>2</sup> /₃in)
18mm ( <sup>23</sup> / <sub>32</sub> in)	95mm (3¾in)
19mm (¾in)	100mm (4in)
20mm (¾in)	105mm (41/sin)
21mm (13/16in)	110mm (43/sin)
22mm (%in)	115mm (4½in)
23mm (29/32in)	120mm (4¾in)
24mm (15/16in)	125mm (5in)
25mm (1in)	130mm (51/sin)
30mm (11/sin)	135mm (51/4in)
32mm (11/4in)	140mm (5 <sup>1</sup> / <sub>2</sub> in)

145mm (5¾in) 150mm (6in) 155mm (61/sin) 160mm (61/4in) 165mm (6½in) 170mm (6¾in) 178mm (6%in) 180mm (7in) 185mm (71/4in) 190mm (7½in) 195mm (73/4in) 200mm (8in) 305mm (12in) 405mm (16in) 510mm (20in) 610mm (24in) 710mm (28in) 815mm (32in) 915mm (36in) 1,015mm (40in) 1,120mm (44in) 1,220mm (48in) 1,320mm (52in) 1,420mm (56in)



A pole lathe turner at last year's show

#### **DETAILS:**

When: 3-5 May, 2014

Where: Penshurst Place & Gardens,

Penshurst TN11 8DG

Contact: ICHF Events

Tel: 01425 277 988

Web: www.ichfevents.co.uk



Tri-form lidded box by AllanJ, made from half of a 75mm cube of sheoak (Allocasuarina fraseriana)



Coloured and airbrushed bowls in a variety of different timbers, by phannaby



Hollow form in red mallee by Mike Foden, 63mm dia. × 38mm high, lid inset made in spalted beech (*Fagus sylvatica*) and hand chased threads in lignum vitae (*Guaiacum officinale*)

Your tazzas

Two spalted beech tazzas

ark,
Seeing your tazza in the magazine,
I thought: 'I've got something like that'. I went
out to the shed, went through some boxes and
found the pieces shown here. Both are made
from one piece of spalted beech (Fagus sylvatica).
The one on the left measures 65mm diameter
× 180mm tall and was made in 2010, and the
one on the right measures 160mm diameter
× 155mm tall and was made in 2011. Maybe
something for the community page?

Best regards, Pat Hughes



#### Tazza with a twist

i Mark,
Here is a photo of my tazza with a
twist. I thought it might be of interest after
seeing the tazza in the February issue of
Woodturning magazine. It is made from three
pieces of sycamore (Acer pseudoplatanus),
which are glued together after turning. They are
turned round, marked out, cut out using a mini
Arbortech, a small cutter from Mick Hanbury,
followed by a lot of sanding, sanding sealer and
Chestnut spray gloss finish.

Best regards, Phil Overd



# **First winners** of new trophies for Lincolnshire turners

incolnshire Wolds Woodturners
Association have recently produced three new trophies. The 'Club Class' trophy was created by Sue Harker, sponsored by Snainton Woodturning Supplies and won by Rick Sutherland from Waltham near Grimsby.

The 'Open Class' trophy was created by Mark Baker, sponsored by Woodturning magazine and won by Peter Barrack from Tattershall, near Lincoln. The 'Christmas Turning Competition', for a turning with a Christmas

theme, a wonderful working wooden clock, was created by Peter Barrack, sponsored by Barracks News and was won by Chris Fisher of Cleethorpes.

A new series of prize cards, together with cash voucher cards for winners to redeem in the club shop, were sponsored by Turners Retreat. The club even managed to get a local trader to provide brass plaques and engraving, which helped to set them all off perfectly.

The winners of the three new trophies



## Woodturning competitions 2014

The Worshipful Company of Turners will be running their prestigious biennial Turning Competitions at Apothecaries Hall, Blackfriars Lane, in the City of London on 28 October, 2014. The prizes will be awarded on the afternoon of 28 October by Lord Mayor, Alderman Fiona Woolf. On 29 October there will be an exhibition of the competition entries open to the public and available for sale if the owner wishes. The competition pieces will remain on display until 4pm on 29 October. Full details of the completion classes, prizes and sponsors will be featured in a coming issue.

#### **DETAILS:**

**CONTACT:** The Worshipful Company of Turners **WEB:** www.turnersco.com

#### Isca Woodcrafts Open Day

The show takes place in the 17th-century stable block and courtyard at Tredegar House. Entry is free, although car parking charges will apply. The AWGB will be represented by Crow Valley Woodturning Club, who support the event every year. Also, a collective group of woodturners will be showing off their diverse skills. The British Stickmakers Guild will also be represented by the South Wales Branch, whose members will have displays of work and practical demonstrations. South Wales Woodcarvers, who are affiliated to the British Woodcarvers' Association, will be showing off their skills while answering questions. Other demonstrators include blacksmithing, box making, furniture making, chainsaw milling and chainsaw carving. Isca Woodcrafts will have a large selection of timbers as well as native and exotic varieties.

#### **DETAILS:**

WHEN: 17 May, 2014
WHERE: The Craft Units, Tredegar House,
Newport, Wales NP10 8TW
CONTACT: Isca Woodcrafts
TEL: 01633 810 148
WEB: www.iscawoodcrafts.co.uk

## **INDUSTRY NEWS**

Each month, different companies within the woodworking industry share their latest news and products with us



# **TOMACO** – spring in to action with the Veto Pro Pac tool bag promotion

TOMACO is running a special spring promotion: buy any of their Tech Series tool bags – TECH LC, TECH XL or the TECH PAC – and receive a TP3 Tool pouch worth £44, free of charge!

Designed in the USA by a carpenter with 25 years' experience, the Veto Pro Pac tool bags offer the ultimate solution to keeping hand tools organised, accessible, neatly stored and ready to transport anytime, anywhere. They are well thought out and made to last. The interior is designed so you can always find the right tool for the job, while the exterior is designed for the toughest of work conditions. Veto Pro Pac are so confident in their product that they offer a five-year downtime warranty throughout the range.

**Contact:** TOMACO **Web:** www.toolmarketingcompany.co.uk



## News from **D&M**

## New Festool TSC 55 160mm cordless plunge-cut saw

Based on the TS 55 R, the new TSC 55 cordless plunge-cut saw from Festool offers the same high level of performance, power and precision as the best-selling corded version.

At 5,200rpm, combined with the variable speed control, the TSC 55 is ideal for working with a variety of materials such as solid timber, man-made boards and solid surface. Combined with the motor management system and new EC-TEC motor, the perfect combination of power and cordless working are achieved.

The revolutionary dual battery concept enables it to be used with a variety of battery configurations – 18V/18V, 18V/15V and 15V/15V. When required, only one battery can be used when the preference is minimum weight over maximum power. See the website for more information and the latest prices.

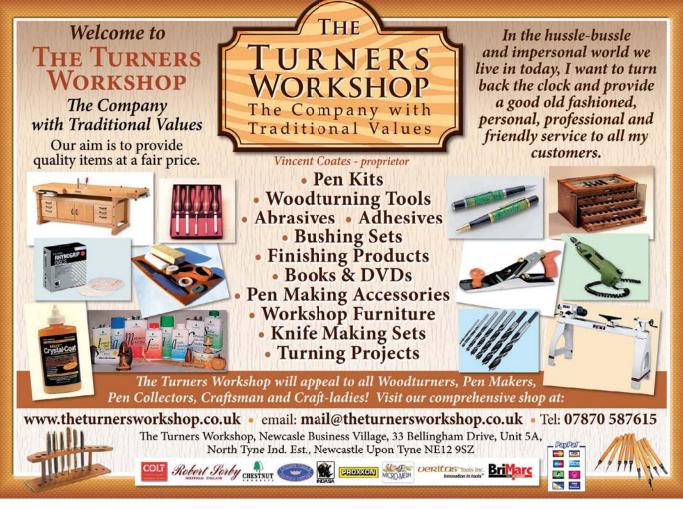
Contact: D&M Tools Tel: 020 8892 3813 Web: www.dm-tools.co.uk













Click here for extra images

# Napkin ring lighthouse

**Mike Freeman** shows you how to make this quirky yet functional lighthouse shaped napkin ring stand

or this project I'm making a set of napkin rings in the form of a lighthouse. The idea for this project grew after a visit to a craft show, where I spotted a model lighthouse on one stand and a stack of plain wooden napkin rings on another. A happy marriage I thought, especially if an interesting wood is used. The actual design of the light and the base are entirely at the woodturner's discretion, but there may be limiting factors. For this design - as the grain of the yew (Taxus baccata) is paramount to its appearance - I wanted it to match from top to bottom, but I was limited by the diameter of the branches that I had in stock, particularly as I wanted the heartwood and some of the white sapwood to show in the finished project. For alternative designs, you don't need to be limited by the size of the branch wood as the base, rings and light can be in different materials. If you look at a few lighthouse designs on the internet you'll get the idea.

The wood I selected was a 75mm branch of well-seasoned yew. I've made a couple previously and it's the striking grain that makes this project

a topic of conversation at any dinner party, as the guests try to outdo each other reassembling the rings correctly. Any suitable branch hardwood with an attractive grain – e.g. laburnum (*Laburnum anagyroides*) – could be used. Branches are best for this project as the strength needed in the rings rules out using cross grain wood. A second smaller branch – 50mm – is required to act as the core of the lighthouse once the rings have been drilled and parted off.

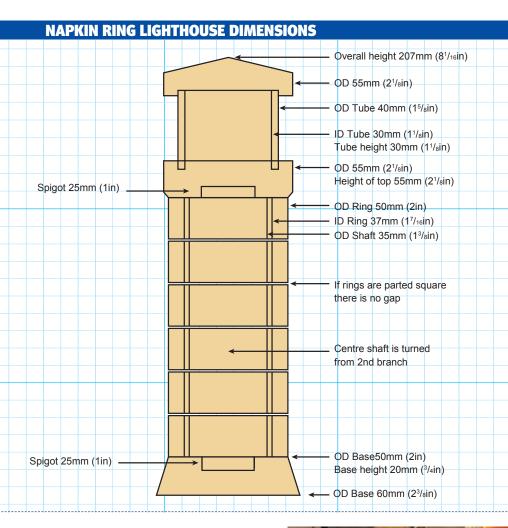
This project could also be extended to eight napkin rings. If you want to try this, just select a longer branch and the process is the same.

#### **MIKE FREEMAN**



About the author: Mike is a retired amateur woodturner who started turning in his school days. He only seriously rekindled his interest

in the early '90s when he finally had the space for a lathe. He is a member of the Berkshire Woodturning Association. **Email:** mikerfreeman@hotmail.co.uk



#### **INFORMATION**

TIME TAKEN & COST
Time taken: 10 hours

Cost: £5

#### **TOOLS REQUIRED**

- Your preferred spindle roughing tools
- Parting tool
- 10mm spindle gouge
- Skew chisel

#### **ADDITIONAL TOOLS**

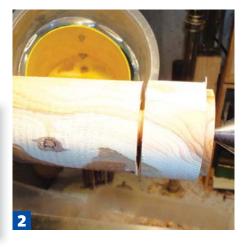
- Rubber ball to hold ring in jig
- Chuck, with standard and small jaws, a steb centre and revolving tailstock centre
- Jacobs chuck for tailstock mounting
- 38mm sawtooth bit and smaller sizes including 25mm
- Spring dividers & Vernier calipers
- Abrasives from 120-400 grit
- · Sanding sealer
- Titebond II and Evo-Stik epoxy resin
- Kitchen/safety cloth
- Carnauba wax or your preferred finish
- Buffing mop for lathe or power drill
- Clear rigid tube/plastic bottle
- PPE: facemask, respirator/dust mask and extraction

- Square the ends of the first branch and punch the centres. Check the lathe speed I use about 750rpm and mount securely with a steb centre in the headstock and a revolving centre in the tailstock. Tighten sufficiently to get the steb centre to grip. Use a spindle roughing gouge to turn to a cylinder and remove all bark. Decide which end is the top and choose the size and shape accordingly. Cut spigots at both ends to suit your chuck. Take care when turning the ends in case a splinter flies off
  - 2 Part off the section that will form the light. Use your thinnest parting tool to retain the best grain match
  - 3 You can now put the top section to one side and start work on the ring and base section of the project

#### **Handy hints**

As a rule, only buy the best quality tools.
 Doing so will pay dividends in the long run
 Always brush off all dust and residual grit after using each abrasive grit; this avoids scratches that are hard to remove later























4 Marking the chuck position on the wood will help you to remount it accurately later on in the process

5 Clearly mark each ring with your thinnest parting tool and then use the skew chisel to finish shaping and smoothing the ring section

6 Finish shaping the base with the gouge and use the skew chisel to turn the ring section to its final size, then sand to 400 grit

7 Start drilling the first ring. If you have smaller size sawtooth bits then it is best to work up to the final size. Work slowly to avoid overheating the wood, especially with yew, which is prone to heat checking. Drill beyond where the ring is to be parted off

8 You can now wrap the tailstock with kitchen paper; this will avoid damage as the rings are parted off

Pring up the tailstock to fully support the ring section for parting off. My revolving centre is smaller than the inside diameter of the rings and will tighten up on the drilled out centre. Part off each ring carefully, to avoid any damage when you break through to the void underneath. Sand the newly exposed edge to 400 grit as you proceed, but keep the final sanding and buffing until later. Try to avoid rounding the corners. Eventually, all that's left is the base

10 Again, mark the chuck position on the base piece; this will help when remounting later

11 It's a good idea to mark each ring as it's parted off. It will help later to ensure the matching grain is easily and quickly reassembled. I used masking tape because it sticks well, but it also peels off easily with no trace of stickiness

#### **Handy hints**

- **3.** Always keep your work area clean and tidy. Looking for small items in a pile of shavings can lead to lost parts and the odd temper tantrum!
- 4. When working with yew, don't let the wood get too hot, especially when you are drilling, as it's very prone to heat checking. Work in stages up to the biggest diameter of drill and let the wood cool between drill sizes
- **5.** Treat yourself to some finer grade sandpaper than the usual 400 grit. You'll be surprised at the improvement in the finish of your work

12 Next, make a jig to hold the rings, so that you can clean up the parted off edge. The other edge is part finished in step 9 and all the remaining finishing work can be done later. Any scrap wood will do here

13 The rubber ball, when compressed inside the ring by the tailstock, will secure the ring sufficiently to tidy up the parted off edge with the corner of the skew chisel. A stout jig and a good fit will stop the ring from splitting when pressure is applied. It's still sensible not to overtighten

14 Use a faceplate-mounted wooden disc and contact spray to mount the sandpaper, then sand the cut edges of all the rings. Go up to at least 400 grit

15 Use another offcut to make a second jig. Size it to take the rings with an easy sliding fit. You can cut the slot with a hand saw. Bringing up the tailstock will spread the jig enough to hold the ring in position. Again, be very careful as not much pressure is needed. Sand, finish and buff all the rings

16 Now use the same jig to do the sanding of the inside of the rings. Put the leading edge of the sandpaper into a slot, otherwise it'll catch on the work. Secure the sandpaper with masking tape and always stick the tape down clockwise, looking along the lathe towards the headstock to avoid catching the end of the tape. When sanding, be careful to only hold the ring

17 Use the same jig again, but this time with a single layer of soft cloth in place of the sandpaper. Lightly rub carnauba on the cloth and buff the inside of the rings. The finish is lovely but again, be careful to only hold the ring. Whether the buffing mop is on the lathe or in a power drill, the effect is similar

18 Return the base section to the lathe.

The top of the base can now be drilled

25mm – to take the spigot of the new centre shaft that will be made from the second branch. Mine was sized to fit my chuck's small jaws so that I could reverse it. Buff the side and top of the base before reverse mounting. Avoid getting any finish inside the recess. Reverse mount the base to shape it with a slightly inwardly dished bottom to ensure it stands square. Sand and finish the underside of the base. You may need to protect the top of the base when reverse mounting it. Any chuck marks inside the recess will be hidden when the centre shaft is glued in position

19 Now remount the top section – from step 3 – and drill with the 25mm sawtooth bit to take the spigot on the top of the new centre shaft, which is turned later









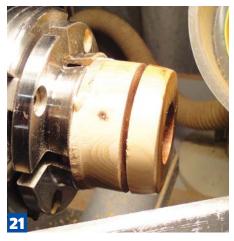






















20 Chamfer the bottom edge of the top so as to match the size of the rings and to get a good grain match. If your design uses a different material for the light then the size is whatever suits your design

21 Separate the top section into two parts. The shorter piece is used to form the base of the light. The thicker part becomes the top of the light and is left thicker to allow shaping

22 By now you should have decided how to make the glass part of the light. I used a piece of acrylic tube – 40mm OD and 30mm ID – but any clear rigid plastic tube or bottle will do. The underside of the top must be drilled to the OD of the tube, where it will be glued later. This recess should also match your chuck jaws as the top still has to be reverse mounted for the finishing process

23 The next step is to reverse mount the top, shape and finish it completely, including buffing. I did it on the lathe with my mop in a power drill

24 Now mount the second branch. Use the spindle roughing gouge to turn it round then use the skew chisel to reduce it to the desired size, which must be not too snug inside the rings. They should rattle slightly and move with no binding at all. Cut the spigots at each end to 25mm to fit the base and for the top to sit on it. Sand and fully finish. Again, avoid getting any finish on the bottom spigot as it will make the glued joint weak

25 Groove the top to accept the acrylic tube. This will take some careful cutting. A recess, the size of the tube, would do but my design left the base of the light a bit thin and I wanted to ensure that the recess underneath the top didn't break through into the light

26 You can now glue the centre shaft into the base, then glue the tube into the top and bottom of the light section. When fully cured, assemble with all the rings in the correct order. The finished project should look something like this. It is now ready for you to place on your dining room table



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# Starting turning – part 2

In the second part of this series, **Mark Baker** explores the subject of lathes and their various components

a lathe. As you would expect, lathes come in various shapes and sizes to suit all budgets, workshop sizes and types of projects and lathe work to be tackled. Depending on their size, the lathes may be able to be fitted on a bench/worktop or on

a purpose-built stand or have an integral stand. The method of construction varies considerably from brand to brand. Some may have all the major components in cast iron; some may be hybrid – part cast iron and steel section fabrication. Some may be constructed of various steel section/fabricated parts only.

Irrespective of how they are made all lathes have similar primary/key features and their function, regardless of size, is to provide a stable platform on which to hold the wood and provide the motive power to cause it to rotate in a controlled manner while you are working on it.

#### **■ DIFFERENT TYPES OF LATHE**

here are roughly three somewhat loose collective categories given to lathes, typically indicating their physical

size and thus determining what size of work they can handle. That said, while I provide a few measurements for each category, manufacturers vary in their descriptions a little so use the following three categories as a rough guide.

#### Mini lathes

This group represents the smallest of lathes. These are typically small and compact. These will have about a 255mm maximum diameter and 355mm between centre capacity. Often these can be easily picked up and mounted on a bench/worktop or on a purpose-made stand. Their small size means that if they are used only occasionally, they can be easily stored under the bench or out of the way when not in use.



#### Midi lathes

These lathes are – as you might guess – bigger than mini lathes. Effectively they are mid-sized lathes but still relatively compact in size. They are usually heavier than mini lathes and are able to tackle larger turning projects as well as the smaller ones. Midi lathes typically have a 255-355mm diameter turning capacity with up to 460mm between centre capacity. Again, this is a rough representation. These too can be fitted on a bench/worktop or on specially made stands. These lathes often come with bed extension options so you can create a larger distance between centres.





#### **DIFFERENT TYPES OF LATHE**

#### **Full-sized lathes**

This group is where the biggest lathes of all are situated, but the problem is that this group is vast and there are so many that the size of work that can be tackled varies hugely. They will be the heaviest lathes of the three categories but the sizes and shapes of these lathes have the most variance of any of the groups mentioned. Typically, these lathes have more than 305mm diameter capacity and a larger between centre capacity – to cope with turning full-sized table legs, stair spindles and such like.

This category also covers speciality lathes where there is a design bias for a given type of turning.

I mention phrases like 'between centres' and 'maximum diameter' capacity among others. The following pages will explain these fully for you, but let's start by looking at the anatomy of the lathe and its key features.

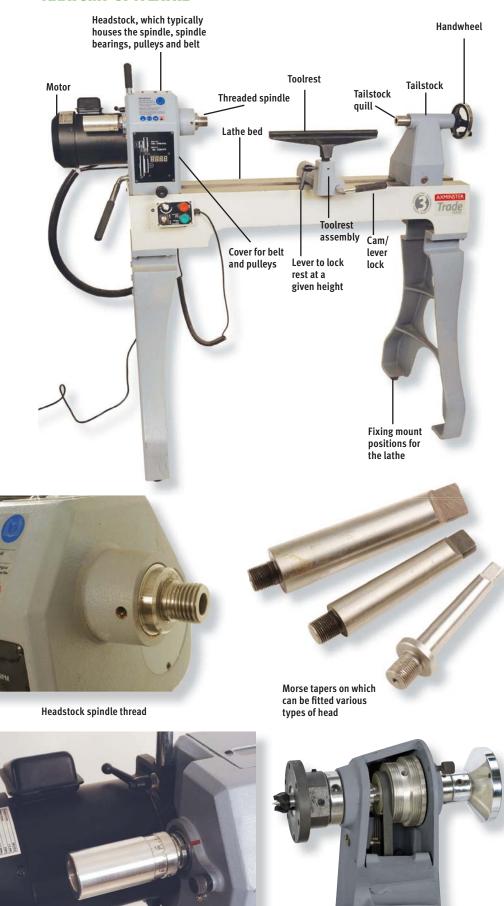
Oneway 2436 lathe

WivaMac DB6ooo lathe



23

#### **◄ ANATOMY OF A LATHE**



Headstock

his is the housing for the main spindle shaft. The spindle has a precision machined threaded section onto which can be fitted a variety of items that will enable you to hold and position the wood while it is turned. There is often some way of locking off the spindle in a given position so you can more easily remove the fitments from the threaded spindle. In this case, there is a hole in the casting onto which a rod can be fitted; this will lock into a corresponding drilled hole in the spindle shaft.

The size of the spindle and the size of the threaded section varies from lathe to lathe. The most common sizes are  $\sqrt[3]{\ln \times 16 \text{tpi}}$  teeth per inch –  $1 \ln \times 8$  tpi and  $1 \frac{1}{4} \ln \times 8 \text{tpi}$  and  $33 \times 3.5 \text{mm}$ . Most lathes also have a tapered hole – known as a Morse taper – in the end of the threaded spindle, into which can be fitted various items to help with your turning. We will look at some of these in more detail later on in the series.

The spindle itself is often hollow so you can ram a 'knock-out' bar into the outer end to eject the Morse taper accessories.

There are, as with spindle threads, a few sizes of Morse taper, the most common being a No.1, which is quite small and found on some of the smaller lathes, but No.2 Morse taper is by far the most commonly used. The least common, but also the largest we find on turning lathes, is a No.3 Morse taper, which is only used on a few of the largest lathes available.

On the opposite end of the spindle, on the outer section of the headstock, the lathe often has a handwheel, which allows you to rotate the spindle by hand. The lathe must be switched off before touching the handwheel.

A lathe may also sport an indexing system. This is where the spindle can be locked in any one of a given number of positions. There are usually 24 specific positions, but this number can vary. The pin is located in a series of holes, which are usually in the pulley nearest the outer section of the headstock. Indexing is great for holding a piece in a fixed position when you undertake drilling, carving and other decorative jobs.

Headstocks may be either fixed, able to be swivelled round – rotated – or movable. A fixed headstock is one which has its headstock fixed in position and always has the spindle in line with the bed.

A swivel headstock can be unlocked from the standard position in line with the lathe bed and rotated so the spindle can point in a different position making access to the work easier for some projects. Left-handed turners may find this type of lathe easier to use than a standard fixed headstock. It allows the headstock to be adjusted for more

A lathe's indexing system

A handwheel with indexing and indent pin

#### **ANATOMY OF A LATHE**



THE THE PARTY OF T

Swivel and slide along headstock and sliding headstock facility

A lathe with a sliding headstock

comfortable positions when you are faceplate turning.

Some headstocks can be unlocked and slid along the bed to any position along it. This type might also have a swivel facility.

#### Lathe bed

The lathe bed usually comprises one or two round bars, rectangular or 'T' steel sections with flat tops. If it has more than one bar or sections, these will be parallel to each other and usually run the length of the lathe. Depending on the construction of the bed, the bed sections can be made from cast iron or fabricated steel. The bed – also known as the ways – is the base on which everything sits. The toolrest assembly and tailstock are moved into the bed.

#### **Toolrest assembly**

The toolrest assembly, also sometimes known as a banjo, is a movable holder for the toolrest that can be securely clamped to the lathe bed by means of a threaded locking or cam-operated device. The toolrest is located in a machined hole, which accepts the stem of the toolrest and, by means of a locking mechanism, the rest can be raised, lowered and swivelled to suit your needs.

The toolrest itself can come in various lengths and is the support for the tools when cutting wood.

#### **Tailstock**

This unit can slide up and down the lathe bed and it too can be locked in any position along it. The locking mechanism can be either a bolt system underneath or now, more commonly, they are fitted with a lever cam system. It is the housing for what is known as the tailstock quill. The quill can be wound forward and back via a handwheel and, like the headstock, has a Morse taper hole in the end of it to accept various fittings. These fittings are used to centralise and support work, so this is effectively a support unit for turned work.



Of course, the lathe cannot work unless there is some power to make the spindle go round. Therefore, there is a motor and it is always somewhere near the headstock either housed in it, behind or under it.

There is usually a stepped pulley wheel on the motor shaft and this has a sister pulley wheel, which is positioned in line with it on the headstock spindle. To transmit the



The lathe bed



The toolrest assembly



The tailstock with quill partially extended



Tailstock quill with rule markings





Pulley wheels with belt and also indexing locking positions on the right-hand side of the pulleys

power from the motor to the spindle there is usually a pulley belt which can be shifted from one pulley position to another. Each stepped pulley position - usually three to five positions - corresponds to a specific speed. Many lathes have two to five pulleys, which equate to different speeds, usually one quite low, somewhere near 3-400rpm and a top

**■ ANATOMY OF A LATHE** 

in between these.



Speed ranges as shown on this three pulley lathe setup



Electronic variable speed control



A manual variable speed lathe





Motor attached to headstock with locking lever assembly

To facilitate the moving of the belt, you can unlock and raise the motor via a lever-lock system: raise the motor to release tension off the belt and then it can be moved on to a new pulley. Once in position, the belt is shifted and the motor is lowered to create tension in the belt and then locked back in position. This is known as manual speed changing. Of course, this is always done with the lathe switched off.

A good speed range is essential in order to turn a variety of projects from small ones up

to the larger capacity pieces. Some lathes show

the speed range for each pulley.

There are a couple of other methods by which the speed of the lathe can be changed. One is called manual variable speed, whereby a lever is pulled or pushed while the lathe

is running to vary the speed - the pulley system changes shape to suit the given speed selected. The other method is known as electronic variable speed, which requires you to twist a dial on the control unit which also has an on/off switch and may have a spindle reversing switch too. This type is more commonly used in conjunction with at least two pulley sets so that you can alter the speed within a given range on each pulley position. This is great as the lower speed range is ideal for big work and usually generates more torque and the higher speed range set is for smaller diameter projects.

There is a type of variable speed that has no pulleys at all and the speed is altered via an electronic system directly connected to the motor, which is in turn connected directly to the spindle via a universal link. This is called a direct drive – such as that on the Nova DVR shown earlier - although there are other makes/manufacturers using this drive system too. Variable speed is a nice thing to have, but is not necessarily essential. As you might have guessed, there is an increased price for variable-speed lathes over those of manual speed change varieties.

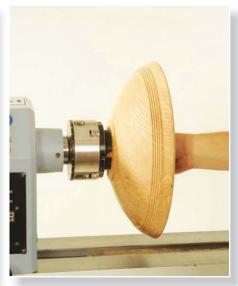
#### **CAPACITY OF THE LATHE**

he capacity of the lathe is measured in two ways. One is called the swing over the bed and this is determined by the distance from the centre of the spindle to the top of the bed bars. If the toolrest assembly is brought up close to the headstock, the swing capacity is reduced because the lower housing of the assembly has some bulk and the capacity is therefore reduced.

The other way of measuring capacity is one known as between centres. Move the tailstock the farthest distance from the headstock, retract the quill and fit a drive in the headstock and a centre in the tailstock and measure the distance between the two. This is the distance between centres. Such drives and centres vary in size and capacity may be reduced. Many lathes are now sold with centres.



Swing over the bed/capacity over bars



A piece mounted on the lathe

#### **CAPACITY OF THE LATHE**



Capacity between spindle and tailstock quill



The capacity is reduced when centres are fitted



Spindle work between centres

#### **BASES/STANDS FOR LATHES**

ases and stands for the lathe form a fundamental part of supporting the lathe, providing stability and extra mass and of course how you can work at the lathe. The more mass and weight the lathe has, the better it is able to dampen vibration and cope with out-of-balance work. The lathe stand/base needs to be as heavy and solid as possible. If the lathe is solid and heavy but on a weak and flimsy base/stand, then the whole setup fails due to the base not providing adequate support and will not help with the vibration dampening aspect. Likewise, if

you have a sturdy base that is well constructed and heavy, you may have the weight and solidity, but if you have a cupboard in it, you may find the cupboard acts like a drum/speaker and amplifies any sound and also if it is full of kit and you get some vibration the items may well rattle when you turn. You also need to have a base/stand that allows you to stand at the lathe without hindrance. Legs or feet that stick out in the wrong place may get in the way and prevent you from standing at the lathe properly or be a trip hazard. Another aspect

to consider is that if you cannot stick your feet directly under the lathe a bit, you may well be too far away from the lathe to work comfortably. One last thing, the base/stand construction might be a hindrance to your being able to sweep up your shavings easily too if you cannot get underneath.



Bench-mounted lathe



#### **WORKING HEIGHT AT THE LATHE**

ou need to be able to stand at the lathe and work at a height that is comfortable and does not cause you to hurt your back when turning. The most commonly used quick reference to find what

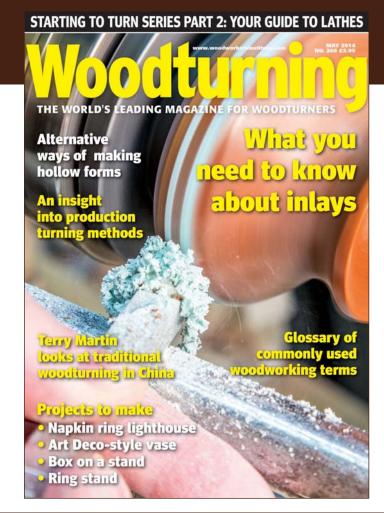
is suitable for you is to stand at the headstock end of the lathe, bend your arm to 90° to the spindle and the height of the lathe should be given or taken about 25mm above your elbow height. It proves to be a useful guide as to what is going to work for you. Of course, you can adjust this a little either way to suit your requirements and your type of work. Some poeple prefer a higher working height when turning hollow forms.



#### **NEXT MONTH**

In the next issue, we will be looking at workholding equipment and accessories

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**Richard Findley** gives us an insight into the life of a production turner, looks at the different areas and explores how they all contribute to making each job a success

ooodturning can be referred to as 'production turning' whenever a batch of items is made. Production turning is what I'm known for and, although I make single items and pairs for private clients and for prototyping, this batch production is my main source of income. The work can range from perhaps four items – a set of table legs, for example – to several hundred. While most people think of production work as spindle turning – and it very often is – I also make faceplate work such as bases, chopping boards and back boards in batches. I will look at these techniques as well.

I am often asked if I have a copy lathe, and although this is often said more as a statement than a question, my answer is, of course that all my work is done by hand. My aim in this article is to let you in to the world of production turning and share with you some of the tips and tricks.

Successful production turning relies on several things, mostly based around efficient working. The thing people most associate with production turners is speed, but speed alone is no good. Anyone can turn fast, but if the quality of the work suffers, then it is useless, because, although 'time is money', it is the end product that counts, not how fast you made it. This speed and efficiency comes from several areas:

- · Good technique
- Sharp tools
- Use of jigs and accessories
- Rhythm and mind set
- Safe working practices

In this article, I will look at each of these areas and explore how they contribute to making a successful production turner. Of course, I understand that not everyone – probably not many people actually –

want to be a production turner, but by understanding the techniques and the way that a production turner works, it may well help you to become a better turner yourself.

#### **RICHARD FINDLEY**



**About the author:** Richard Findley is a registered UK professional woodturner living and working in Leicestershire. He discovered woodturning while working for his father as a joiner. Richard makes all kinds of work to

commission, from replacement antique components, walking canes and stair spindles, to decorative bowls. It is the variety of work that he loves. He also offers demonstrations, tuition and a range of woodturning supplies.

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#### **GOOD TECHNIQUE**

ithout good technique you will, in my opinion, struggle to achieve the results that you are aiming for, whether this is in your latest artistic creation or to produce a set of spindles. To achieve good technique, you need to understand how your tools work and practice with them as much as you can. My earlier articles in this series have explained how to use the core tools that make up a tool kit, so I won't go over them again, but I felt the point should be made again: practice makes perfect!

When it comes down to it, in all forms of turning there are three basic shapes:

- Beads or convex curves
- Coves or concave curves
- Straight lines, either vertical, horizontal, or somewhere in between

It pays to understand how to make each of these basic forms on spindle and faceplate work. Once you can do each of these in various sizes, you can try to combine the shapes into forms such as an ogee, which is an 's' form, combining both a convex and a concave curve. Often these shapes can be formed using different tools, from a gouge to a skew chisel, or perhaps even a scraper on

faceplate work. It is also useful to be able to make use of different tools to do the job. I have heard it said that a skew chisel will give you a much better shaped bead. In the right hands, and with practice, you should be able to make a bead equally well with a skew chisel or a gouge.

Once the turning techniques are mastered, producing copies or multiple items is a simple process. Think about it: you mark lines on a spindle to show you the positions of the beads and coves. All you have to be able to do then is turn your desired shape between the lines. It really is that simple.

#### **MARKING OUT**

he most important accessory that I use in batch production is a copy template. These are simple to make and easily transfer your setting out onto the work. While diameters along a spindle are important, the positioning of each detail is vital, because if a bead or cove is out of place when you lay out the batch, it will draw attention to itself and make the customer start looking for more faults.

I use a piece of thin board, usually MDF, but ply or even a thin offcut of timber is fine too. I draw out half of the design, full size, along the edge of the board, making note of diameters and other important information as I go. The positions of each detail can then be confirmed with a small notch in the edge, which I make with a triangular file; this allows your pencil to sit in place and quickly mark out the work with the timber

spinning. This works equally well on spindle or faceplate work. Having all the necessary information to hand on the copy template saves having to stop to check the original drawing or sample, which helps to maintain the flow of work.

With the positions marked, the next stage is blocking out. This is working along the spindle taking sizing cuts with a parting tool and a pair of callipers. My preference is for a Vernier, which has the size marked on it in millimetres. This makes setting very quick and easy and it also locks in place quite securely. Whichever type of calliper you choose, it is important to round over the corners that touch the wood. When new, callipers have very sharp points, which can be dangerous if used on the spinning wood. Using a file, round over these tips; this makes them perfectly safe to use. Set them to the desired diameter and lightly rest



The copy template in use

them on the back of the timber. Once you get to the correct size, they drop through. Having several sets of callipers lined up on the lathe bed in an order that makes sense to you, will speed up this part of the job. Re-setting one set of callipers several times is rather tedious!



Callipers in use



Blocking out stage complete

#### **TOOL CHOICE**

with the blocking out done, all you have to do is turn the details in the remaining timber. Simple! One area that can slow production down considerably is the selection of tools that you choose to use. Most of us have a tool rack full of shiny

tools, and it can be tempting to get them all out and use as many as possible on each job. The problem is, each time you stop turning and change tools, it breaks the rhythm of the work and slows you down. It may only take 10 or 20 seconds to change tools but by swapping

between lots of tools, several times on each item, this soon adds up to a lot of valuable time lost throughout a production run. Rhythm is so important when turning like this. Finding an efficient order to work in and sticking to it will help to achieve a matching batch, as

#### **▼ TOOL CHOICE**

muscle memory builds up and soon the cuts come naturally, almost without thought.

Don't get me wrong, sometimes there is a specialist tool which will save you time or help to create perfect repetition, such as a bead forming tool, but for the vast majority of work I use three or four basic tools:

- Spindle roughing gouge
- Spindle gouge
- Beading & parting tool
- Bowl gouge

I have each of these tools in various sizes depending on the job in hand. The tool that I find most useful is my beading & parting tool. This is because it is a kind of hybrid tool, doing the job of a skew chisel as well as that of a parting tool. A tool that can do the job of two tools saves a lot of time in swapping and changing, and also minimises the tools I have on the lathe bed at any one time. Perfecting your technique with each of these tools will also allow you to form good shapes with a minimum amount of cuts, taking perhaps four

cuts to form a bead rather than six or eight.

Being able to sharpen these tools quickly and efficiently is also vital. Without sharp tools you will lack control and the quality of the finish will suffer. In production, I must admit that I will sometimes go rather longer between sharpening than I should, and almost all of the catches that I get are a reminder to me that my tool isn't as sharp as it should be.

I sharpen freehand from an adjustable platform, a technique that I have honed over the years, which I find fast and repeatable. I have nothing against jigs: these will almost certainly smooth the learning curve of achieving sharp tools, but it is important to know that it is just as easy to badly sharpen a tool on a jig as it is freehand. I intend to write more on sharpening in a future article.



The organised chaos of a production turner's lathe bed



The basic tools needed for spindle production turning



Sharpening my spindle roughing gouge

#### PREPARING FOR FINISHING

aving turned your item it is important to get the sanding and finishing right. Firstly, you should choose an abrasive that works efficiently. Abrasive that is stiff, clogs or leaves scratches is not good. A good quality abrasive should sand cool and fast, resist clogging and flex around whatever shape you have turned. If it is long lasting as well, then all the better.

The better your tool work, the easier it will be to sand. It is always a good idea to find out what an item will be used for or finished with, because this will often affect the level of sanding required. Softwood stair spindles, for example, which are going to be brushed with gloss paint need only be sanded with 180 grit



#### **PREPARING FOR FINISHING**

abrasive. This is coarse enough to smooth out any flaws in your tool work but fine enough to leave a perfectly suitable finish to take the paint. An item which will be sprayed, oiled or French polished to a high gloss, will need to be sanded much finer. to ensure there are no visible scratches. Best practice when sanding is usually to remove the toolrest, allowing free access with no risk of trapping fingers. There is, however, a perfectly safe technique, frequently used by production turners, which allows safe sanding while leaving the toolrest in place, hence saving time. By placing one hand below the toolrest, the other above, and sanding at the rear of the work, this allows good access and safe working. It feels a little strange to start with, but with practice it works well.

#### Safe sanding tips

- 1. Hold the abrasive with both hands at the rear of the work; this ensures nothing can get caught between the wood and the toolrest
- **2.** Good extraction is vital in your workshop, especially when sanding. Place the extraction hose as close to the source of the dust as possible
- **3.** A negative point to sanding in this way is that the dust is thrown towards you; this means that a face shield and dust mask is a minimum requirement
- **4.** I always wear an air-fed helmet with visor when turning; this gives me the maximum protection
- 5. If in any doubt about this or any other technique, then don't do it! Remove the toolrest and sand as normal

#### WORKHOLDING

he method of holding work on the lathe can impact on the efficiency of a job. Generally speaking, for spindle work I will use matching ring centres, as this is a very fast and efficient method of holding a spindle turning job; it also allows work to be turned around if necessary. I would only use a four-prong drive for working larger spindle jobs that require a more positive drive. The four-prong drive is a traditional method, but needs driving into the end of each spindle with a mallet. Whereas, with ring centres, you only need a centre marked – the pressure of the tailstock does the rest. This alone can considerably speed up a production run of small spindles.

For faceplate work, there are several ways to hold a job on the lathe. A chuck is the most obvious way, but cutting a spigot or recess, turning it around, working the other face then having to rework the holding point is rather labour intensive. A more efficient way for jobs, such as back boards, bases or chopping boards, is to flatten both faces on a planer/ thicknesser and sand them to a finish with a belt and/or orbital sander. I then mount them between two pads, which don't mark the faces. This is often referred to as a 'friction drive'. I use a pair of discs, one held in the chuck,

the other fitted to my multi-tip live centre, both faced with 400 grit abrasive. The two pads hold the work firmly between centres, allowing good access to the edges where all the detailing is, and not marking the base or visible top. This simple tip saves on both time and timber.

#### Safe workholding tips

- **1.** Ring centres provide a fast and efficient holding method for smaller spindle work
- **2.** Four-prong drives take longer to use but offer a more positive drive for larger spindle work
- **3.** Friction pad drives for faceplate work should only ever be used on timber with two prepared surfaces never on roughsawn or uneven blanks
- **4.** Stand slightly to one side with this type of drive, especially on start-up; this is known as 'out of the line of fire'
- 5. Make sure everything is securely locked down before start-up. If your tailstock moves during turning, it would be very dangerous







My wooden drive blocks, faced with 400 grit abrasive



In action, turning the edge detail on a baseboard

#### **TECHNICAL** Talking technical

#### **<b>▼ JIGS AND ACCESSORIES**

or most jobs, your standard kit will do the job just fine, but for others, the addition of a jig will speed up and simplify things no end. The one that immediately springs to mind is stair spindles, where the use of my home-made long wooden toolrest and centre steady, makes turning what can be a tricky job into simplicity itself. Other jigs that I have made include the adjustable 'V' blocks for drilling and the indexer, which locks the chuck in place. The key to a good jig is usually to keep it simple and to make them solidly. They don't have to be pretty, just effective.

Set up to turn stair spindles with my long wooden toolrest and centre steady



#### **MIND SET**

learly, production turning isn't for everyone. Speaking personally, I turn because I enjoy the process, so it doesn't really matter to me what I'm making. Some people feel the need to express themselves through their turning, I don't feel this; my need is to make things from wood. It doesn't really matter what, but to have made something, or to have supplied a key feature to a bigger project, keeps me turning happily. Once you get past the process itself, it comes down to money, I suppose. Production jobs are where the money is, so while big jobs can become a little tedious, the pay day at the end makes them worthwhile. From my experience, I find that even the biggest jobs will only last a week or so at most, so soon enough I will be making something new for someone else. This is what keeps it new and fresh for me.



A batch of stair spindles



A batch of ash (Fraxinus excelsior) baseboards

# "The key to a good jig is usually to keep it simple and to make them solidly"

#### **HEALTH & SAFETY**

I feel it is important to emphasise here that some people may find some practices of a production turner 'unsafe', such as the use of Vernier callipers on spinning wood or sanding with the toolrest in place, but I can assure you that a production turner is one of the safest turners you will find, simply because an injury caused at the lathe can stop you turning. If a production turner can't turn, then they can't earn money and feed their family. All of the techniques shown here are safe if done properly. If you don't feel comfortable with anything you see then don't attempt it; find another way that you do feel comfortable doing

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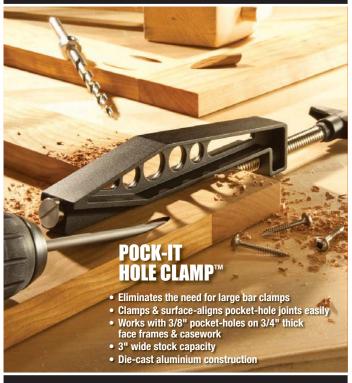
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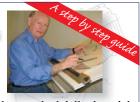
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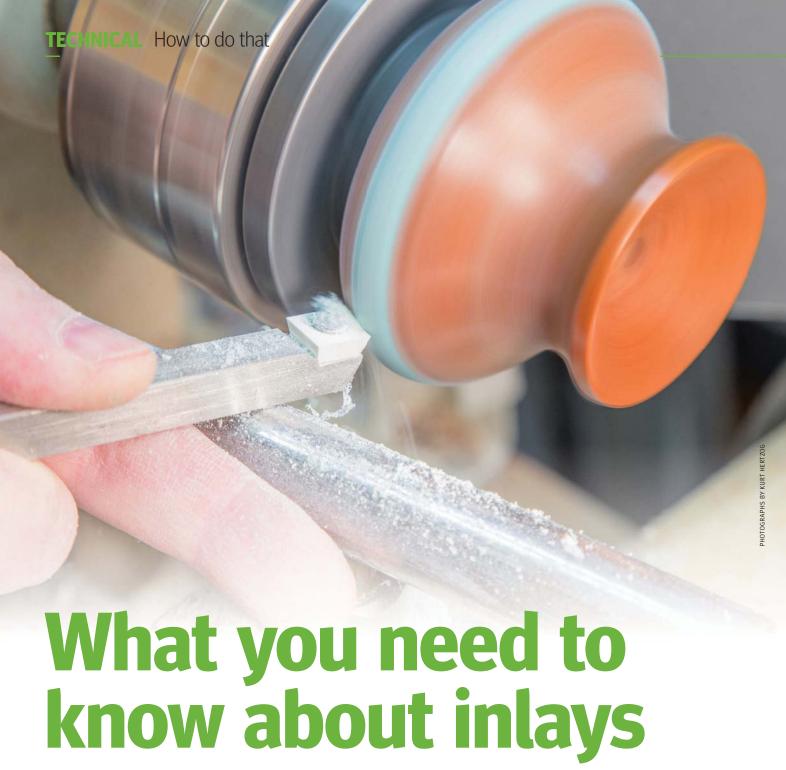
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In the next part of his new series, **Kurt Hertzog** looks at the various things to consider when you decide to integrate an inlay into your turning

f you are looking for ways to punch up your turnings, then using an inlay is certainly just one of the options you should explore. It can be as simple as using a Forstner bit of the appropriate size to create a recess to inlay a coin or as complex as a scene done in different species of woods – the complexity is up to you. Most turners think that doing inlay is difficult, yet it couldn't be further from the truth. There are a few rules that need to be followed, but these are things that you probably know already. As you work with wood, regardless of what species, what

finish, or what shape, the wood will always continue to take up and give off moisture as the humidity of that woodturning's environment changes. Also, each species of wood has three different coefficients of expansion, that are usually different – most of the time, markedly so. We'll discuss this and their impact on your inlay.

Depending on your definition, anything that ends up in, under, or on top of a turning provided the surface is level could be called an inlay. Let's take a look at the various things to consider when you decide to integrate an inlay into your turning.

## **KURT HERTZOG**



About the author: Kurt is a professional woodturner, demonstrator and teacher and writes for various woodturning and woodworking publications in the United States as well as writing for *Woodturning* magazine. He is on the Pen

Makers' Guild Council and is a member of the Board of Directors of the American Association of Woodturners (AAW).

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#### **SAFETY FIRST**

ust like turning, creating your inlay can range from your cutting of the inlay materials to preparing the areas for the inlay to reside. That said, eyewear and dust protection are always in order. We'll be exploring casting in a future column, but for now, proper ventilation and protective gloves for the chemicals and adhesives are certainly wise. Depending on your selection of tools for creating inlay areas, power cutting or carving protective gear, such as leather aprons or Kevlar gloves are in order.



Safety items should certainly include eyes and nose protection, but don't forget the chemical resistant gloves. Here, a Kevlar carving glove offers protection when using a power carver

#### **INLAYING WOOD INTO WOOD**

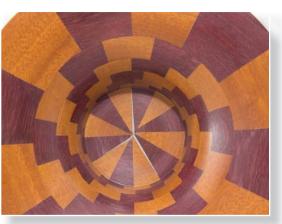
egmented turners learn to understand wood in a hurry. Because they use different species for their colourations, they are forced to deal with the corresponding expansion rates. If you don't understand the three different expansion directions and rates, visit your club library to review the topic in Bruce Hoadley's book Understanding Wood. Failing to understand and heed this will cause you problems pretty quickly. The method to reduce this problem is to avoid the multiplespecies problem. Also, inserting the bottom as a floating plug can work. When working with

dissimilar species, allow for the varying rates of expansion and contraction. Don't cross grains between the turning and the inlay. Keep the grain orientation the same to minimise stress in the inlay and adhesive bond. One of the beauties of burl is that it has no grain orientation to speak of. Inlaying burl for a cover will tend to cause less problems.

Another method of inlaying wood into wood is to make it a component. Often a contrasting species is used for the rim or other detail. Because the species are chosen for their colours, you still need to be cautious of expansion rates and grain orientation.

The base of the lidded box below was turned and an inset was glued in to provide the rim. Turned to become the rim for the top, it can be done for colour selection or threadability. The contrast can be a striking feature and turned as part of the process makes everything flow together nicely.

This is not extremely common, but inlaying end grain cuts is gaining popularity. The ability to dye materials and create striking looks is almost endless. Because the inlay is extremely thin and impregnated with the



A problem area for many segmented turners is the bottom. Because of the geometries, end grain glue joints and expansion rates, failures are common

Common to boxmakers, a contrasting insert is used in the rim detail. The insert can also be selected based on the ability to thread that species when desired

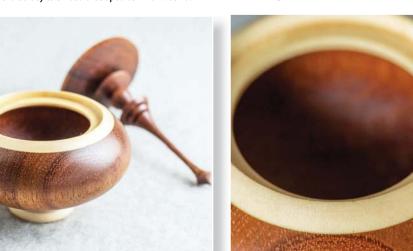


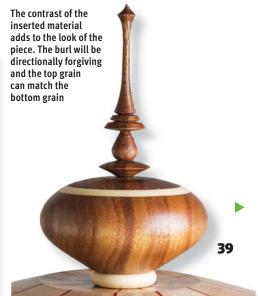
The same species used as a solid bottom. Because of the glue joint it is more forgiving. Another method is to 'float' the bottom piece like a rail and stile door

This burl insert is grain directionless so the orientation becomes irrelevant. Were it a grained dissimilar species, the orientation would be critical



Forgive the alignment error of the top to bottom for grain match. The point of the image is that the burl is more forgiving in the differing expansion rates. It is pretty uniform in all directions





## **INLAYING WOOD INTO WOOD**

epoxy adhesive, it is very tough and durable. The channels for the inlay can be cut on the lathe with a parting tool, or even done with a router and circle cutting attachment. The process for the edge treatment is cutting the end grain slivers with a die cutter. That allows for replication of any patterns that are created as desired later on. However, nothing prevents you from inlaying any other material as a rim treatment. The depth of rim channel might be different but you certainly can inlay colours, stone, metal, or other inlay materials.

## **KEY POINTS TO REMEMBER:**

- 1. Consider the expansion coefficients for compatibility
- 2. Orientate the grain to prevent excessive mismatch
- 3. Use wood glue when possible for face grain to face grain bonds
- 4. Use CA to wick into tight fits when needed, being aware of brittleness
- **5.** Use epoxy when suited to allow for flexibility of adhesive
- **6.** Cut pockets with turning or woodworking tools based on shape/ location
- 7. The insert can be created, traced onto the desired location and then the field can be prepared with woodworking techniques
- 8. For flat surfaces, a depth controlled Dremel or equivalent with a mini router bit works nicely
- 9. Leave 'breathing room' where possible to prevent breakage
- 10. Turn and finish with normal tools and finishes



Very thin end grain cuts lend themselves to dyeing for color enhancement. Because they are cut with a cutting die, they are repeatable and can be tailored to exotic patterns



The end grain patterns are cut with the Noden Razor tool. The beauty is the die creation and cutting, allowing for precise yet exotic patterns. The channel is cut with a parting tool or a router



After curing, these clock faces with the patterns for numerals can be turned between centres or just sanded with an orbital sander

#### **INLAYING COLOURED ADHESIVES INTO WOOD**

hile the title says 'inlaying coloured adhesives', don't make it too restrictive. It really means anything soft and pliable that can be put into a cutout or recess to cure. I like to use epoxies to solve problem areas because they will fill nicely and take colour readily. Take this idea and run with it! Drill holes in bowls. Put numbers in clock faces. Fill cracks in turnings, whether they are original or newly created. Do swirl patterns with the colours. I can't think of a place where this concept doesn't lend itself. Whether right through, or in a shallow pocket, your limitation is your imagination. Some other examples are based on the debris from laser-cutting pen kits, to illustrate the points, but don't limit your thinking to pen parts. Standard five-minute epoxy works nicely as a filler for pockets, cutouts, flaw, bark inclusions, cracks, or other areas that you can fill. There is a host of items you can

use to colour the epoxy to your needs. In areas that are through holes, provide a seal to contain the epoxy. Don't rely on the adhesive strength of painter's tape to hold the weight of the adhesive. It will work nicely to seal the area, provided it has mechanical support for the weight. Dyed wood-dust, or wood-dust from any specific species will work nicely to colour the epoxy. The wood fibres are mixed in, to obtain the intensity of the colour needed. A visit to the craft store will yield a wide variety of agents you can use to create any effect you want. Sparkle powders will add considerably to any turning, or a simple black paint pigment will create a jet black for your application. Mix it with a toothpick, which also serves well as a filling tool. Even though it is advertised as five-minute epoxy, it really takes 24 hours to come to full strength. If you let it fully cure for the 24 hours, it will cut just like plastic. All of your standard turning tools

## **KEY POINTS TO REMEMBER:**

- 1. Test your colourants and adhesives prior to a critical application
- 2. The cure time varies based on the filler and the ratio
- **3.** Five-minute cure time is a misnomer, 24 hours to strength unadulterated
- 4. Multiple partial fillings may be better suited to deep cavities
- **5.** Mix as needed minding the open time to avoid waste
- **6.** Don't rely on the adhesive for original bonding strength after colouring without testing: colourants may reduce original properties
- 7. Use any of your woodworking or woodturning tools and techniques to create pockets for filling: through or partial will work
- 8. Your lathe makes a wonderful, indexable, locking workholder
- **9.** You can create 'free-form' fields for filling with carving tools, Dremel tools, drills, saws, or other wood removing tools

#### **INLAYING COLOURED ADHESIVES INTO WOOD**

and techniques will work fine. You can sand and finish in a normal manner as well. Next time you have any crevice, crack, nook, or cranny that needs a little something added to it, you'll have a mechanism to make it as plain or as colourful as you wish.



Did you ever wonder what happened to all of the wasted materials from the laser cutout stock? Called 'laser leftovers', they are becoming popular with pen turners

Some epoxy adhesive with acrylic paint colouring makes for a problem-free bottom for a segmented platter. No points to match, no end grain problems in the bottom and no expansion problems



Pens are used as illustration to cover the points of colouring epoxy and filling any cutout or pocket. Here, coloured wood dust is used with epoxy



The intensity of the colour can be controlled by the density of the wood dust in the adhesive. Mix in more dust as needed



Another colourant for epoxy is acrylic artist colours. Mixed as needed for intensity or colour tone, any colour can be created. Mohawk colour powders are also a source of colours



For through holes, a backing is needed to keep the adhesive in place until cured. Painter's tape will work nicely if mechanically supported from behind



For round projects, the adhesive filling needs to be staged allowing for curing. Even after gelling, it will still run given sufficient time. Wait until cured before rotating to another spot



Don't be afraid to experiment although don't do it on a time critical or expensive project. Experiment on practice pieces of the same material. Here glitter is being used as filler for sparkle



After the epoxy cures, it turns just like plastic.
Use your standard woodturning tools and practices to cut and shape as desired. Sanding and finishing are also the same as usual



Examples filled with acrylic paints, sparkles, ground turquoise stone, retoucher's colourants, paint pigments, and more. Experiment when you have time to see where you can take it

#### 

ou probably have seen enough bowls with cracks or rim treatments done in turquoise to last a lifetime. I won't belabour it here, but I will cover the methodology so you'll know how to work with stone and metals. Depending on your planned application, you can buy crushed stone, different sized metal powders, or other solid fillers to inlay. If you want a radial type feature, you can cut it with your turning tools. Other shapes can be carved in with hand carving tools, power carving tools, drills, saw blades and more. The goal is the creation of a pocket to deposit your particles of filler, before hardening them in place. The aspect ratio of the cut or created channels do need to be reasonable, or there is a likelihood of material separation over time. When the channel or pocket is prepared, the granules of stone or metal is deposited and hardened in place with very thin CA adhesive.

Use something to catch spilled materials for reuse, as both crushed stone and metal powders are in the range of £4.80 to £10.20 per ounce. Work only in a portion of the curve, filling the channels with particles. Work in partial rotations, hardening the particles with the CA adhesive. The very thin is used to be certain it will wick through the particles uniformly to the bottom of the pocket. Standard viscosity and thin may not work with the finer powders. Purchase the very thin CA for this type of application. Once the application of adhesive has hardened all of the deposited particles, the turning can be accomplished. Standard woodturning tools will work, but will dull very quickly. Carbide cutter tools used in a scraping mode will remove the stone down to the surface where you take over with abrasives. Metal powders can be cut well with standard HS steel tools in a normal cutting orientation.





After completing the deposition and hardening of all of the materials in all of the channels, the stone or metals are cut back to level. A scraping cut with carbide cutters works well

## **KEY POINTS TO REMEMBER:**

- 1. Create your pockets or channels using your favourite woodturning or woodworking tools but keep the aspect ratio reasonable
- 2. Straight side walls will fill easily, yet provide good retention. Avoid 'V' style shapes if possible
- 3. Use very thin CA adhesive for your bonding agent. Standard thin may not wick to bottom when using finer particle materials
- 4. Accelerator can be used sparingly
- **5.** Carbide cutters work best for stone used in a scraping attitude. HSS in normal cutting manner for metal powders
- 6. Be cautious when sanding as there will be a big difference in sanding rates between stone or metal and the surrounding wood
- 7. Wear appropriate PPE! Cutting stone and metal inlay can create dust and debris hazardous to eyes and lungs



A pocket to receive the dry particles is created in one of a variety of ways. Here the parting tool is used to create parallel channels to be filled with turauoise



An artist's palette knife works nicely to deposit the granules into the channel on the top of the turning. Use a catch paper on the bed to recover the costly powders spilled

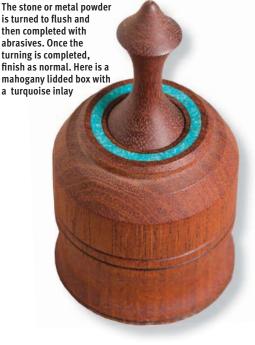


These examples are just a few of the crushed

stone fillers that are available. Depending on the

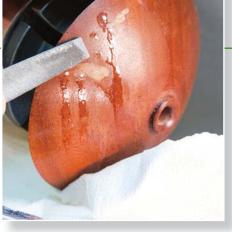
material and application, you may need different

Dispense very thin CA adhesive to solidify the granules in place. Leave a working area without adhesive to continue after rotating for the next area





Drill your desired holes with only about 0.06mm clearance. This will allow sufficient adhesive to be wicked into place



Clip the wire close to the surface and then bond in place using thin CA adhesive. The small clearance will wick in the CA and cure quickly



File until flush and then move to abrasives. All of the turning and rough sanding is done prior to precious metal addition so final finish sanding is all that is required

#### **PRECIOUS METALS**

ften there is a desire to accent turnings with precious metals. We'll avoid the gold leafing here, but will cover the inlay of silver wire. The technique works for gold wire as well as any standard wire, as long as it is very soft. Usually the wire is inlaid into a drilled hole. I've never seen it inlaid into a channel as is done in engraving adornments in metal. Most likely, because of the parent material sidewall characteristics of wood. For our example, we'll use silver wire. Silver wire is available through the jewellery supply houses. You specify the metal, purity and diameter. They will sell it to you based on the daily spot market price for the metal you are buying. When you receive the wire, gauge the diameter so you can select a drill with only sufficient clearance for the adhesive to wick by. Drill your holes in the wood where you would like them. In turnings with a hollow

beneath, try to not drill all the way though as you'll waste wire if you don't bottom out. You do need to have sufficient depth to accept the wire and bond in place. Insert the wire to bottom out or, if a through hole only project, minimally on the inside. Clip the wire close to the surface with a pair of diagonal cutters. Jeweller's size and grade work far better than those from the garage. While you can apply adhesive one at a time as you cut, I find it easier to apply CA to them all at once. Standard thin CA will work well providing the hole is a reasonable fit. I allow about 0.06mm diameter difference. Once cured, use a file to remove the metal down to flush. DO NOT try to use woodturning tools. You will never be successful getting them all cut flush without pulling some of them out of the hole. File them flush and then move to abrasives for sanding and finishing.

#### **KEY POINTS TO REMEMBER:**

- **1.** Don't insert precious metal until all of the turning, shaping and rough sanding has been done
- **2.** Drill holes sized 0.06mm over the actual wire size
- **3.** Go to a reasonable depth to allow for maximum retention of the wire. This is reasonable based on how little is used
- **4.** Insert wire and clip with electronic or jeweller's diagonal cutters. Avoid the large bulky automotive grade cutters
- **5.** Use standard thin CA to bond the wire into the holes
- **6.** Sand sparingly as the two materials will sand at different rates. Even soft, the silver or other metal will sand differently than the wood
- **7.** Experiment with silver, brass, bronze, aluminium and other soft metals

#### **TOOLS**

or the most part, everything done with inlay can be done with your woodturning tools or the common workshop tools such as saws, files, rotary tools, etc. You can certainly bring your carving tools, power carving equipment, laser cutters and anything else you have access to or service you can purchase. The two tools that I find very helpful when clearing a field on a flat or slightly rounded surface are the Dremel base with either the Dremel tool or the flex shaft. This allows for view when cutting out a traced pattern as well as for a flat bottom or uniformly deep pocket. An alternative to the Dremel is a die grinder in a luthier's base. Used by instrument makers to cut channels for purfling, it is much easier to control and has better adjustability controls.

"An alternative to the Dremel is a die grinder in a luthier's base"



Handy tools for inlay, especially for flat areas. The depth base for the Dremel style tools makes tracing much easier. A die grinder with a luthier's base is also a welcome tool when inlaying

## **◄ INLAYING CHALLENGES FOR YOU**

he basics that have been covered here should have you off and running experimenting with inlay. You'll be able to do round, flat, through and dead end spaces. You'll be able to inlay mirrors, cabochons, coins, keys, metal dust, precious metals and crushed stone. Space and interest precludes getting into cutting inlay in shell or other materials, but it is out there for you to experiment. Learning to use a jeweller's saw and bird's beak is not only fun but will open a new world far beyond where we've

gone here. Do not stop here if you have had your interests tweaked. You can adorn your turnings in many other ways once you head down this path.

A collaborative effort of pen and presentation case for a friend's 50th birthday. An example to plant seeds for ideas

A simple desk dip pen that has a bit of uniqueness. Another thought starter to get your own creative juices flowing



Cutting mother-of-pearl, abalone shell and ablam to your desired shape is another facet of inlay. Preparing the field to inlay it is also a challenge, particularly with inside and outside connected script

#### **CONCLUSION**

he case could be made that casting polyester resin is inlaying. I don't think I'd dispute that. The topic is so massive that it will need to be dealt with in another column. The opportunities there are boundless for application to woodturning. While it is commonly applied to pen turning and the examples I'll show are pens, don't think for a moment that there aren't far reaching applications for the entire spectrum of woodturning. Not only can you cast just about anything inside the resin but it launches us into putting pictures, cloth, and other items into our turnings. It is a plastic and what can't you encapsulate in plastic? Might it be your breakfast cereal, your daughter's pompoms, dyed rice, or party toothpicks. Perhaps a snake or snakeskin. Start thinking about it. It won't be long in coming. We'll do an entire section on casting in one of the upcoming articles, so get ready.



With the ability to cast, all fillers are fair game. Breakfast cereals, party toothpicks, remembrances and even snakeskin



Kurt Hertzog

With the ability to encapsulate photos and other items in plastic, you'll have the ability to turn items that have a personal aspect. Not a photo but a snakeskin under the resin

Here's what the snakeskin looks like when done up properly. When you venture into casting, you'll have another opportunity to take your inlaying ability to new levels

## Works of Woodturning Art Like These





## Demand Works of the Toolmaker's Art Like This





**Stuart Mortimer** is renowned around the globe for his signature twisted hollow forms. Over the years Stuart has employed many different tools and tooling techniques whilst refining his approach.

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a twisted hollow form. The result of this collaboration is the SM250 carbide toothed cutting disc seen above.

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Available now, only from The ToolPost, the Saburr SM250 Cutting Disc costs just £28.70, inc. VAT.

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**Terry Martin** takes a look at traditional woodturning in China

n August 2012 I was invited to China to represent the American Association of Woodturners (AAW) at a symposium organised by the International Wood Culture Society (IWCS). I had always wanted to know about Chinese turning, so I looked forward to finding out about it. To my surprise, I could find no evidence of woodturning and everybody seemed to find my demonstrations amazing, because they had never seen turning before. Determined to find out more, I asked Su Jinling, the General Secretary of IWCS, to help me track down some traditional turners. Eventually she

was able to find a few villages where the old ways were still known, and since then we have visited two villages where the ancient traditions still cling to survival.

## Making the journey

In November 2013 we travelled to Yangji Tun village on the Yellow River, about 550 kilometres south of Beijing. There we met Wang Xuejun, who is now 53, and his father, Wang Minde, who is 84 years old and has retired from turning. We learned that in the past there were dozens of lathes in the village, used by many families for making wooden toys. However, the demand for these toys gradually faded and now the only one left still making these traditional turnings is Wang Xuejun. The turners of this village used to make around 20 different items, from toys to lucky

charms, and some utilitarian objects. They included brightly coloured wooden dolls with moving heads, balls, mallets, sewing boxes, pins, and coloured eggs that were hollow, and rattled when shaken. Cosmetic containers were made for young women to put powder and rouge in, while other containers were made to hold captured crickets. Some of the goods were even made to be included in a young woman's dowry when she married.

## The process

Wang Xuejun explained that making these goods is very labour intensive: "The process for making turned wooden toys is complicated," he said. "You have to go through wood selection, cutting, storage, drying, cutting into blanks, trimming, turning, assembling and painting.

It's more than 10 stages. The tools include the pedal lathe, medium and small saws, axes, adzes, hammers, gouges, drills, large cutting tools, awls and brushes." Wang Xuejun told us some more of how important turning used to be in the village. "Up to the 1980s, turned wooden toys were very popular at festivals. Villagers turned all year long and the toys piled up like mountains. Every family turned wooden toys all year round. Besides selling them at the County temple festival, they pulled wagons full of toys to regional cities to sell, some of them quite far away. They were better turners then and were able to sell everything they took with them," he explained.

## **Decline in popularity**

Once cheap plastic goods started to appear, the prices of handmade products were too high. The sales of turned wooden items declined and the turners in the village started finding new jobs. Sadly, as with many traditional practices, this ancient craft is facing extinction in China. Again, Wang Xuejun explained: "No one makes tools like gouges and hook tools now, so they are hard to come by. Also, it is not so easy to get the right wood any more. We used to make the wooden toys from willow (Salix spp.), because other woods don't work so well. Several families would share the cost of a whole willow tree, but big willows are hard to come by now."

## **Decoration**

Wang Xuejun's wife, Gao Yongu, told us that the traditional patterns painted on the wooden toys have been used since ancient times. Usually they used yellow and white as base colors and then painted the patterns with bright colours like red, green and blue. "In the past, the stains were made from ash and limestone powder. Now we use modern dyes and fix them with egg yolk," she said.

## Wang Xuejun's woodturning

Wang Xuejun told us that he started woodturning when he was a teenager. Although he stopped turning for many years after demand declined, he recently started again. He wanted to show us his lathe, so he took us to a small storeroom at the side of his house. "This is the pedal lathe



Wang Xuejun shows us how he sits at his lathe





The frame over the lathe was originally secured with wedges, but over the years a quick-fix of wire and nails has sufficed



Mr Wang hammers a pre-cut blank into the jam-fit chuck using a hammer



With the toolrest in a horizontal position, Mr. Wang rounds the blank



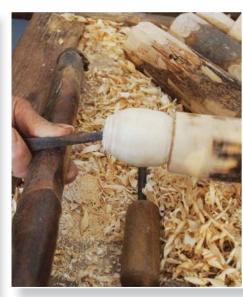
The underhand grip is used in rounding over the end



The toolrest is repositioned for hollowing



A hook tool is used to hollow out the blank



This underhand grip is familiar to traditional turners all over the world

used for making toys," he said. "This kind of lathe has been passed down for many generations, starting in the early Qing dynasty." That would mean such lathes have been around since the mid-1600s.

The lathe is a rough rectangular frame that the turner sits inside. It is driven by two pedals, in line with the axis of the lathe. The power is transmitted to the shaft via a belt. In the past this used to be made of leather, but now a rubberised V-belt does the job. Clearly sentiment has no place in keeping this craft alive, as traditional construction techniques have been sacrificed for convenience. The seat is now suspended by recycled plastic rope, and the frame is held together with a mixture of wire, nails and rope. The shaft is held in a headstock made of planks, wedged between uprights, and there is a groove in the shaft that runs in a cut-out in these planks. The only metal part is a ring that reinforces the jam-fit chuck that the turner faces

end-on. Mr. Wang showed us how he hammers a blank into the chuck with a combination hammer/hatchet that is used to rough out the blanks.

The toolrest is a length of hard branch, with a 'foot' attached at one end. At this stage, one end of the toolrest sits on the headstock, creating a level support so Mr. Wang can cut the blank to round.

Mr. Wang used a skew chisel, cutting on the left of the blank, so the cutting stroke was powered by his right foot. "You have to use both hands and feet when you use the pedal lathe," he explained, "so it takes a lot of skill to control the tool." He was able to look directly down onto the work, but it left me with no way to photograph what he was doing, as the cutting edge was completely obscured by the toolrest and his hand. By climbing on the wobbly lathe, I was able to glimpse how he was controlling the tool, just as he started rolling the tool to round over the end of the blank. When he had partly

roughed out an egg shape, he moved the toolrest so it was at 90° to the end of the shaft. This meant the toolrest was now angled so he could position the tool dead-centre to the blank. The toolrest is only held in place by downward pressure from his hand. I didn't know what Mr. Wang was going to make, so what he did next truly amazed me. He first bored out the centre using a kind of spear-tip tool, then hollowed it using a small hook tool. Mr. Wang was making a hollow vessel, but using a technique that he says has been used in China for hundreds of years! There is truly nothing new under the sun. When I looked more closely I could see that he was using an underhand grip that is exactly like the grip used by traditional Western spindle turners.

## An origin?

Who knows who did it first? Did such techniques develop independently on opposite sides of the globe, or was there some kind of Silk Road



The toolrest doubles up as a mallet for driving a plug into the blank

exchange, that spread the idea in one direction or the other? This kind of question goes to the very heart of what I was trying to find out in China.

When he had hollowed the piece, Mr. Wang placed a few pebbles inside, and then hammered a pre-cut plug into the hole.

Interestingly, he didn't use the hammer this time, but hit the plug with the heavy foot of the toolrest. Finally, he used the skew chisel again to round over the protruding plug, and then part off the finished egg from the lathe. Mr. Wang held it up proudly and shook it, so it loudly rattled: "When it is painted, this will be a 'five colour egg'. They used to be given at weddings and other celebrations, and they brought good luck." He smiled broadly: "I can still make dozens of these every day," he said. Later we sat outside his workshop and Mr. Wang showed us some of his brightly coloured finished products.

A pair of tiny dolls that Mr. Wang showed me had a charming quality, and I could see how, in a simpler world, they would have appealed to children with no access to the modern toys we are so familiar with.

As he explained each piece, I asked why he still makes them if there is no market for such work: "That's easy," he said, "we have been encouraged by the local government to do this because it rates our work as an important cultural heritage. It's called 'Henan Provincial Non-material Cultural Heritage for Development'." Mr. Wang has been designated as a

representative heir of this tradition and he receives a small financial incentive from the local government to continue turning. "So I am turning again," he says, "and I will continue to do it. It is part of our culture, regardless of whether we earn money for it or not. There are still other lathes in the village, but they are all broken and only my lathe is still functional." He paused, then sadly added, "We can't just throw away the craftsmanship passed down by our ancestors."

## Questioning what we know

The elder Wang Minde has gone on the record as saying that turning has been carried out in his area for around 3,400 years. He says his ancestors first made a living turning shuttles for weaving machines then, inspired by clay toys, they started turning wooden toys using the same techniques. A regional cultural expert, Ni Baocheng, has published a claim that turning has been done in China for 5,000 years. I am searching for ways to verify this claim and if I can, I think we are all going to have to rethink everything we thought we knew about the history of turning. It is such a privilege to be able to find out these things first-hand. I owe enormous thanks to Su Jinling and to the International Wood Culture Society, and I urge readers to visit their website and learn more about their amazing work. See details below.

Web: www.iwcs.com



Rounding over the plug





"Clearly sentiment has no place in keeping this craft alive..."

## **RELATIONS BETWEEN JAPAN AND CHINA**

For many years I have researched and written about Japanese woodturning, and have written several articles for *Woodturning* magazine on the subject. I have always tried to find out more about the origins of Japanese turning but have never been able to find anything beyond around 1,300 years ago. I've always suspected that Japanese woodturning, like carpentry and architecture, may have been influenced by China, via Korea, but I've never been able to find direct evidence for that idea, beyond certain similarities of style and technique.

Japanese turners themselves are silent on the subject, but that is not surprising. As craft and trade techniques in Japan have been strongly guarded secrets for hundreds of years, ancient roots may have been buried under layers of professional secrecy. But, my visits to China have confirmed that there has clearly been an exchange of expertise. The end-on working position, sloping movable toolrest, hook tools and many more things, can be found in different permutations in much Japanese turning. The thing that astonished me the most was the similarities in products that are made in the Western world.

In the November 2000 issue of Woodturning, I wrote about traditional Japanese kokeshi dolls, made in the village of Naruko. I explained how the heads of the dolls were movable because they were separately turned and added later. The local turners had built a legend around these dolls. Because the heads squeaked when they were rotated, they called them 'crying dolls', and claimed they represented the spirits of stillborn babies. I went on to describe how they painted their dolls with 'the distinctive patterns that identify the dolls as Naruko work'. What could be more Japanese?

Now, nearly 14 years later, all my preconceptions were being dismantled. If we compare the dolls Mr. Wang makes with the Naruko kokeshi, the similarities go far beyond coincidence. Firstly, the heads on Mr. Wang's dolls rotate. They are turned separately but, most tellingly, they are inserted into the body of the doll by pushing a slightly oversized neck nub into a hole while the lathe is rotating. It pops in when it heats, and expands the hole in the body, and when the hole cools and contracts, it cannot be removed. This is exactly how the Japanese do it.

Secondly, one look at the two different dolls confirms that there is some ancestral link. Although the Chinese doll, painted by Mr. Wang's wife, is much less sophisticated, the similarities are astonishing. The fringe on both dolls' foreheads, the simply brushed eyes and evebrows and, most tellingly, the colours and flaring patterns of the decoration all speak of strong ties. I am in no doubt they are distant cousins. Keep in mind that Naruko in Japan is a mountain village that until the 20th century would have been very difficult to access. Yangji Tun village in China remains a very obscure A kokeshi place, hard to find if you do not have a doll from Japan, knowledgeable guide. The connection is dogwood probably very old and must have been (Cornus florida), very convoluted indeed to link these 300mm high remote places around 2,500 kilometres apart. What is amazing is that the link was still there to be discovered. What other secrets of turning history have I yet to uncover? I will be returning to China soon to continue my research. A doll from Yangji Tun village, China, willow (Salix spp.), 70mm high

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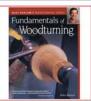
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# Art Decostyle vase

Being inspired by an Art Deco tea set, **Sue Harker** decided to create a similar project. Here she creates a vase and embellishes it with several decorative methods

rt Deco pottery is a great source of inspiration having angular, symmetrical forms, which are often decorated with bold geometric shapes and vivid colour. The inspiration for this particular project came from an Art Deco, highly decorated tea set, comprising a tea pot, milk jug, covered sugar dish and cup and saucer.

For this project, I used a piece of maple (Acer campestre) for the vase and a piece of sycamore (Acer pseudoplatanus) for the base. Instead of using bold colours to decorate the vase, I chose to carve a pattern into the surface using a power carver with a 'V' groove detail gouge attached. The carved pattern is then painted with acrylic black paint and the

surface re-sanded to reveal a clean, crisply painted pattern.

When designing the base, I wasn't quite sure what the shape I had in mind would look like so I used some offcuts of softwood to experiment with. When I was happy with the proportions and the overall shape, I then replicated it using sycamore. The sycamore needed to be square so I ran the piece through my planer/thicknesser to create a 100mm × 100mm square section, 130mm long.

Other colours and indeed a combination of different colours could be used to decorate this vase using the same method should you wish. An alternative decorative method would be to ebonise or paint the vase with black acrylic paint first. You can

then carve the pattern through the surface to reveal the natural timber underneath, producing a clean cut pattern. Both methods are very effective and produce a completely different appearance, depending on the result you are looking for.

## **SUE HARKER**



About the author: Sue is a member of the RPT and AWGB, teaches woodturning, demonstrates all over the country, writes for *Woodturning* magazine and has produced three DVDs.

**Email:** sue@sueharker.com **Web:** www.sueharker.com

## **ART DECO VASE DIMENSIONS**

## **INFORMATION**

**TIME TAKEN & COST** 

Time taken: 5-6 hours

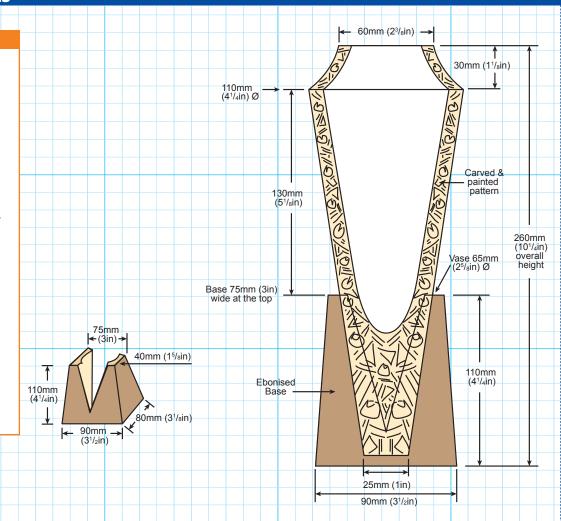
Cost: approximately £18

#### **TOOLS REQUIRED**

- 3mm parting tool
- 1.5mm parting tool
- 12mm fingernail profile spindle gouge
- RS200 hollowing tool
- Spindle roughing gouge

#### **ADDITIONAL TOOLS**

- Jacobs chuck
- Sanding arbor
- Proxxon power carver
- Flexcut 'V' groove detail gouge
- Vessel callipers
- Jo Sonja all-purpose sealer
- Jo Sonja black acrylic paint
- Jo Sonja Flow medium
- Various grits of abrasives
- Aerosol ebonising lacquer
- PPE: facemask, respirator/dust mask and extraction



Begin this project by mounting a piece of maple measuring 120mm × 120mm × 300mm long between centres. You can then turn the piece into the round and cut a chucking spigot suitable to fit shark jaws. Here I am cutting a spigot 45mm diameter × 30mm long, which is the correct size for my shark jaws

The next step is to mount the timber in shark jaws using the taildrive to centralise the piece. Taper the neck of the vase creating a slight curve that is approximately 30mm long and finish at a diameter of 65mm

Create a taper from the widest point towards the headstock leaving the last 100mm - nearest the chuck - thick to offer support while hollowing. For the taper to be the correct angle, the diameter of the vase at a point 150mm from the taildrive should measure 65mm

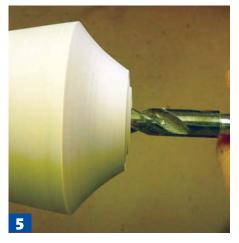
4 Then, using a steel rule, check the taper is flat. You can correct any raised or low areas if needed

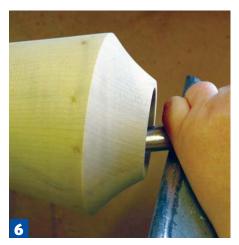




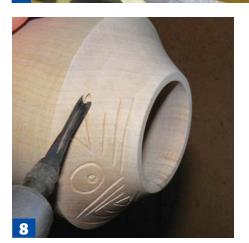


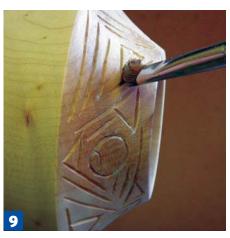
















Next, mount a Jacobs chuck, with drill attached, in the taildrive end. Turn the speed of the lathe to approximately 500rpm and drill a hole down the centre of the vase to the required depth

6 Then, using your preferred hollowing tool, hollow the vase following the outside profile. Here I am using an RS200 with the scraper tip attached

Using vessel callipers, check the wall thickness as you progress. The deeper the hollowing, the more specialist tools will be required

Sand the turned shape to a finish using abrasive grits 120, 180, 240, 320 and 400. Create a geometric pattern around the top cove using a carving machine with a 'V' groove detail gouge attached

Using a small paintbrush, you can then begin to seal the carved areas. Here I am using Jo Sonja all-purpose sealer

10 When the sealer has dried, use a small paintbrush to apply black acrylic paint to the carved areas

11 Starting with 240 grit abrasive and working through to 400, sand to remove the excess paint leaving the black paint in the carved areas. You can then turn a jam chuck to loosely fit the neck of the vase. Here I used an offcut of timber with some router matting to cushion the timber and reduce slip. Bring the taildrive up for support

## **Handy hints**

- **1.** Either carve the pattern freehand or draw it onto the timber first. Regularly sharpen the gouge to create a crisp, carved finish
- 2. When using a hairdryer to dry paint, avoid applying too much heat as this will cause the paint to bubble
- **3.** With the jam chuck placed in the end of the vase, cut a spigot the correct size for your jaws and mount the jam chuck for finishing the end of the vase taper
- 4. When cutting the base using a bandsaw, be very aware of where your hands are in relation to the blade. Use a pushstick and sacrificial blocks of timber to help guide the timber through the blade
- 5. Either carve the pattern freehand or draw it onto the timber first. Regularly sharpen the gouge to create a crisp, carved finish

12 With the jam chuck secured in place, continue to create the taper. Check for flat as you progress. Sand the piece, working through the same grits as before

13 Carve the pattern along the body of the vase. Seal, apply black paint to the carved out areas and sand to remove the excess paint

14 With the jam chuck secured in the jaws you can then mount the vase using the taildrive to centralise and secure in place. It is important to check that the vase runs true before finishing the taper

15 Finish the carved pattern to the bottom of the taper to a diameter of 25mm. Seal the wood, apply the paint and sand off the surplus before parting off

16 For the base, mount a piece of timber measuring 100mm × 100mm × 130mm long on the lathe between centres. Leaving the timber in the square, cut a chucking spigot to the correct size for your 50mm jaws at one end of the piece

Remove from the lathe and draw the required cut marks. The 'V' groove measures approximately 40mm wide and 90mm long and the opposite side measures 40mm at the top and 90mm at the bottom. Cutting the 'V' groove first, set the angle mitre of a bandsaw to 15° and the rip fence to a position which is approximately 30mm from the blade; this will allow you to line up with the start of the 'V' groove. Position the chucking spigot along the mitre and the top edge of the timber against the rip fence. Wedge a sacrificial piece of timber into the gap created. Holding everything securely, push through the blade following the pencil marks. Turn the timber over and cut the opposite section of the 'V' groove in the same way

18 Next, set the rip fence to line up with the pencil line on the side – the angle mitre remains at 15°. This cut will run to the bottom of the timber so make sure your fingers are nowhere near the wood being cut. Wedge a scrap of timber into the gap created and cut both sides using the same set up, turning the timber over for the second cut. Retain these pieces of timber as they will be needed later

19 You can now mount the timber on the lathe using the chucking spigot cut earlier. Using a suitable hollowing tool, start to hollow the centre for the vase to fit into. The diameter at the top should be 65mm. The cutter is visible through the 'V' groove when the lathe is rotating so you can see the taper being created













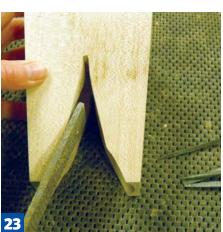






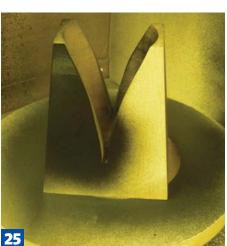








26





20 Mount a Jacobs chuck with a 25mm Forstner bit attached and with the lathe running at approximately 500rpm, drill to a depth of approximately 100mm. Here I stuck a piece of masking tape at the depth required. Continue the tapering to the bottom of the drilled hole and try the vase for fit

21 When satisfied with the fit of the vase, remove the base from the lathe. For cutting the remaining sides of the base, secure the piece of timber cut off the base earlier, using double-sided carpet tape. Here I blackened the edge of the offcut to highlight this. Set the angle mitre to 5° and secure the rip fence to remove the required amount of timber. Leave approximately 5mm of timber at each side of the 'V' groove. Again, the cut will run the full length so keep your fingers out of the way. Here I am using the angle mitre, a pushstick and a scrap of wood to feed the timber through the blade. Cut the opposite side using the same method

## "...refine the shape of the 'V' groove and sand to a smooth finish"

22 For the final cut, set the angle mitre to zero and with the offcut of timber secured to the base, cut off the chucking point. Here I set the rip fence approximately 20mm from the blade; this will remove the chucking point and surplus timber

23 Using rasps of varying coarseness, refine the shape of the 'V' groove and sand to a smooth finish

24 The next step is to sand all cut surfaces starting with a belt sander. When all the rough saw marks have been removed with the belt sander, work through your usual grits finishing with 400 grit. Use a sanding arbor to hold the abrasive and avoid rounding over any of the edges

25 When a satisfactory finish has been achieved, spray with ebonising lacquer. After the first coat is dry, check for any imperfections. Resand if required and recoat. Here I sat the base on a piece of MDF with a lazy Susan attached to the underneath, so the piece can be rotated for coating all sides

To finish the piece, apply several coats of oil to the decorated vase. Coat the interior of the vase with black acrylic paint leaving the rim natural timber. When the paint is dry, apply acrylic gloss lacquer to the interior to seal the paint. When the oil is totally dry, glue the vase into the base. The completed Art Deco vase should look something like this •











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In the workshop with...

Joe Jedrychowski



We meet Joe Jedrychowski who shows us around his workshop and

tells us more about his turning journey

## How, why and when did you start turning?

A friend of mine. Dick Metlen, introduced me to woodturning about 15 years ago. We had a history of introducing each other to various hobbies, over a span of 25 years, and we were hobbyist woodworkers for years before we started woodturning. Unfortunately, I bought a cheap Taiwan-manufactured lathe on which I couldn't even use a chuck, so I was limited to a faceplate and between centre turning. I was still employed at the time and didn't have a lot of time for practice or classes, so I never progressed past making rolling pins.

After I retired I moved to Oregon, I got a better lathe and finally a dedicated basement shop space in 2008, and I consider having the dedicated shop when I officially started turning. In the Portland area there are now two woodturning clubs and a general woodworking guild. I took every class offered by the woodturning clubs, even if I didn't think I was that interested in the particular technique. I consider myself a hobbyist woodworker, not an artist. I do not have a studio, I have a shop. I've never sold anything, but have given away many pieces and enjoy seeing my work displayed or being used.

## What and who have been the greatest influences in your work?

Of course the club demonstrations and the invited speakers are the best inspiration. Within the club, Jim Hall demonstrated surface enhancements, rose engine turning and shapes, while Bob Tuck, an octogenerian and professional woodturner, demonstrated that you can always learn something by attending meetings and classes whenever he could. Dale Larsen has perfected bowl shapes. Out-of-area demonstrators like Stuart Batty, Michael Hosaluk and Eli Avisera have pushed me beyond expectations.

## If you were to offer one sage piece of advice to someone what would it be?

Take every hands-on class available, even if you don't think you're interested in that area of woodturning. Then, lock yourself in your shop and practise what you have learned. You'll be amazed how fast and how easily you can forget the technique nuances you just spent days learning. Secondly, get to grips with the fact that to progress, you need to invest not only in classes, but equipment. The equipment doesn't have to be new or owned solely by you, but the investment doesn't end with the lathe. The lathe is only the beginning. You'll need

Walnut (Juglans regia) and holly (Ilex spp.) bowl, made from a laminated plank, 260mm dia. ×

110mm high

PHOTOGRAPHS BY JOE JEDRYCHOWSKI

Mallee burl bowl, usually sits on a

stand made from horns of a white tail

deer, 360 × 300mm



## 5 THINGS THAT I HAVE LEARNT WITH MY WOODTURNING

- A turning that is plain and uninspired can be made interesting with pyrography, carving, or paint
- 2 Don't stand directly in front of your turning, if possible, and always wear a faceshield
- A workshop floor clean of debris, cords, hoses and scraps helps to avoid tripping
- A steady rest works not only with spindles, but also dampens vibrations on bowls and hollow forms
- 5 Keep a first aid kit near the phone in your workshop or install a phone so you can call for help. A plastic jar works well to keep bandages, analgesics, hydrogen peroxide, tweezers with magnifier, eye drops, alcohol swabs and micropore tape for skin closure

## **LATEST HOME-MADE JIG**



This home-made jig is ideal for holding burls

My home-made burl holder is made from two 585mm diameter pieces of 25mm MDF and bolts with wing nuts make a press that will hold a burl. The window in the top board allows the burl to be turned. It is attached to the lathe by a tenon glued and screwed to the bottom board. Balance is sometimes a problem, but wood weights can be screwed to the unit, between the boards to counterbalance. I usually use rubber between the burl and the holder to ensure grip and stand off to the side when turning with this unit.

hollowing jigs, vacuum chucks, four-jaw chucks, airbrush equipment, carving tools, dust control devices, etc., or you'll just make rolling pins like I did.

## What music and which book are you currently into?

We have a jazz radio station, a classic station and a public radio station in Portland which provide most of my listening. I also have a good CD player and a turntable. I prefer Chopin and choral music. And book: *Duty* by Robert Gates. I also enjoy mysteries by John Sandford and John Grisham.

#### What is your silliest mistake?

Not wearing a full-face shield from the start of my woodturning. I now wear a full-face shield when using any power tool. Yes, I've had turnings come apart as recently as two weeks ago. I can't stress safety enough.

## What has been your greatest challenge?

Trying to catch up with woodturners who have an artistic background. I never had time for it in school.

## Name one thing on your turning 'to do' list.

More surface treatment with hand and power carving, dyes and paint. I take classes in brush painting and have done some painting on turned items.

## Tell us about the piece you are currently working on.

I have a large burl of silver maple (*Acer rubrum*) which I am coring and hope to get three bowls. The piece also yielded a few 25mm thick flat pieces on which I will carve or do pyrography.

## What is the one piece of equipment or tool you would not be without and why?

My Trend Airshield is a clever and effective way to keep dust from your lungs. I've tried masks, respirators and dust extraction, but the Trend one is very effective and as I mentioned before, you have to invest in equipment to progress and be safe.

## If you could change one thing what would it be and why?

I'd want more space, light, heat and outlets in my workshop.

## What is your favourite type of turning.

I'd say that was hollowing. It's boring – no pun intended – but the results you can achieve are terrific.

## If you could have one wish, what would you wish for?

An unlimited supply of newly harvested burls and an Aston Martin. Not necessarily in that order. Seriously, I wish I'd started turning earlier in life or perhaps I should say I wish I had the time earlier in life to learn and practise turning. Flatwork was always easy for me; I could watch a TV programme on woodworking and go to the shop and do all of the steps to make a cabinet, cutting board or drawer. Turning has a steeper learning curve and was more difficult for me to learn.

## If you could have one piece of equipment what would it be, and why?

I think I have all the equipment I need for now but who knows what is around the next corner? New

things are always being introduced. Just go to a woodturning show and try out some of the new hollowing jigs, turning tools, bandsaw blades and other new products. There's always something else you need!

Email: jjedro@comcast.net

Hollow form in spalted maple (Acer campestre) with a purpleheart (Peltogyne porphyrocardia) top and foot, 260mm dia. × 190mm high

## **Handy hints**

- **1.** Take a chance on an unpromising piece of wood and see what's inside. The worst thing that can happen is your firewood pile will look better
- **2.** Make a sample board with different finishes to check for curing time, effect of multiple coats, colour and effect on grain
- **3.** Sign your work with a Pilot G2 rollerball 0.5 mm. It scores the wood and after 15 minutes your wood finish won't lift the ink
- 4. A CBN wheel will make sharpening fun
- **5.** Buy a white fabric-marking pencil from a sewing or quilting store. It's useful for marking walnut and other dark woods
- **6.** A 510mm box fan with a good quality HEPA furnace filter attached to the back of the fan is an effective dust extractor. Two fans and filters are even better. Two fans, filters and a powered respirator are best
- **7.** Don't try to work in a cold workshop with four layers of sweaters, gloves and a hat keeping you warm. Turning is a potentially dangerous hobby and more so when wearing long sleeves and gloves. Put a space heater in the shop and bring the temperature up so it is tolerable

#### **LIKES & DISLIKES**

#### Likes:

- Selecting logs and crotches from felled trees for the perfect turning
- Almost instant gratification: a cabinet or chair can take months; a bowl can take a couple of evenings
- A bowl or other turning, even a rolling pin, is the perfect gift. Anyone can give a bottle of wine, but a turner can give a one-of-a-kind gift

#### **Dislikes:**

- Sanding
  - Waiting for some oil finishes to cure
     Instructors/demonstrators who tell you that you can pick up an item – paint, dye, file, sharpening stone – anywhere. It usually leads to a hunting expedition

"Turning has a steeper learning curve and was more difficult for me to learn"

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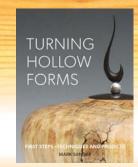
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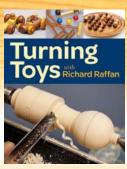




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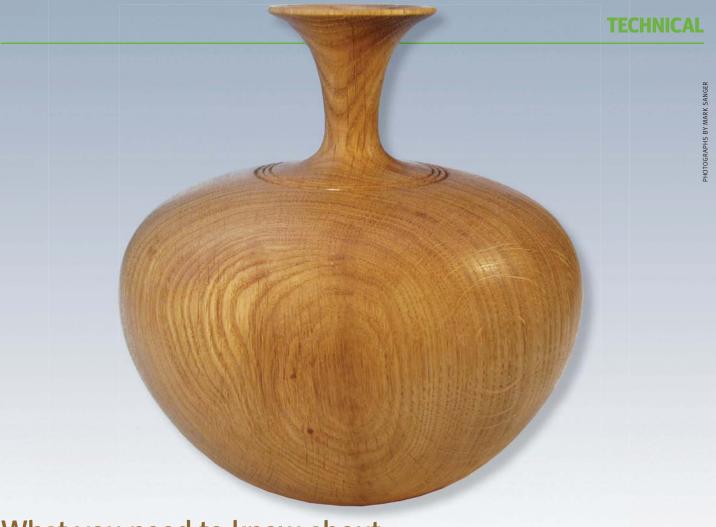
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What you need to know about...

# Designing & making hollow forms – part 3

Mark Sanger looks at methods of making hollow forms and shows how to make a form with an inset neck

n this final article on hollow forms, I look at a few alternative methods other than hollowing through a small opening in the top. Forms, such as tall thin-necked vases, by design are required to be hollowed through a larger opening in the shoulder, allowing for tool access into which a neck is glued. Working through the base or producing a form in two halves are also options and allow a variety of forms to be made that would otherwise be very difficult, if not impossible to produce through the top of the form. These alternative methods not only make life a lot easier when hollowing but also greatly reduce the time it takes to complete a project. This is something worth considering if you decide to sell your work.

The project made here is a vase made from a seasoned section of parallel grain/spindle grain orientated oak (Quercus robur) post. If you do not have a parallel blank available use a cross-grain bowl blank instead with a small piece of contrasting parallel grain wood for the neck. Just remember to take into account the differing direction of cut for a cross-grain blank. If you do decide to use a cross-grain blank for the main form and a parallel-grain blank for the neck, make sure both are well seasoned as any movement in the cross-grain blank will be greatest, and after a short time may result in a gap appearing at the join as both sections settle. To avoid this, rough out the main form and neck to be slightly oversized. Drill out the neck and allow both

to settle for several days in a centrally heated home before remounting to finish.

## **MARK SANGER**



#### About the author:

Mark is a professional turner living and working in Dorset. He specialises in creative turning that incorporates texturing, colour and mixed media. Mark has written

numerous woodturning articles, demonstrates the craft, runs courses and has produced DVDs on the subject.

**Email:** info@marksanger.co.uk **Web:** www.marksanger.co.uk

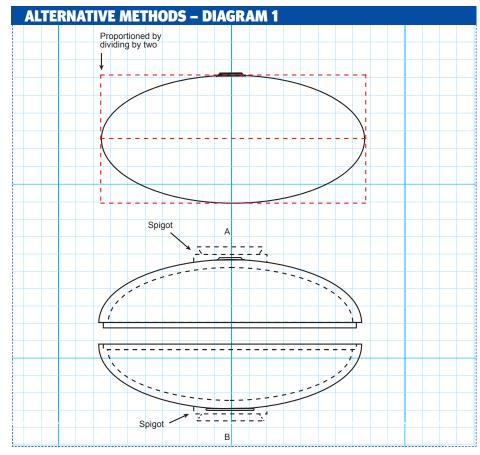
#### ◆THREE ALTERNATIVE WAYS OF PRODUCING A HOLLOW FORM

iagram 1 shows a form that is made by turning two symmetrical parts that are joined together with either a thick bowl blank that has been parted in half if final grain alignment is important, or two separate blanks of the same wood being used if you are going to colour a piece where grain alignment is not critical. The join, if required, is disguised with beads or coves with the hole in the top being produced towards the end of the project before removing the waste/spigot. It is a highly efficient way of producing forms without the need for hollowing tools or the time induced by turning through a small hole. The photo below shows a small form produced from two shallow cross-grain bowl blanks that was coloured with acrylic automotive spray.

## Turning a two-part hollow form using cross-grain bowl blanks

This process involves the turning of two bowls that are joined together by:

- 1. Turn section A, as shown in diagram 1, with a parallel spigot on the front of the rim. The inside is finished with abrasive from 120-240 grit. Do not finish the outside profile or spigot at this time.
- 2. Turn section B so that it has a recess on the front of the rim to accept the spigot of section A to a good fit.
- 3. Run medium viscosity CA glue into the recess in B, then align the grain of A to B and fix together, bringing the tailcentre up and applying moderate pressure until the glue is set.
- 4. Leaving the tailcentre in place, refine the outside profile to a safe distance from the tailcentre and chuck. If desired, disguise the join with beads or coves or as shown in the photo here. Continue the beads over the entire form to add a tactile surface.
- Remove the tailcentre, drill the entrance hole and refine the rim detail continuing the beads and stopping a short distance from the rim.
- 6. Finish the outside with abrasive from 180-400 grit. Apply your desired finish or apply off the lathe and buff.
- 7. Reverse onto a friction drive that fits the opening, then bring up the tailcentre applying moderate pressure and turn away the drive spigot and waste section, blending the form into the base. Finally,





Small form made from two shallow cross-grain bowl blanks, coloured with acrylic automotive spray

finish with abrasive, removing the final part of waste as shown in steps 17-18 later in the project.

## Form with inset base

This method can be used to produce a continuous smooth form with a small entrance hole without the need for micro hollowing tools. This is because the form is hollowed through a hole in the base, which is a size that fits a standard 12mm diameter shaft tool with a small scraping cutter. It greatly simplifies the process of hollowing when a small entrance hole is required and allows for small cross-grain bowl blanks as well as other offcuts to be used to produce

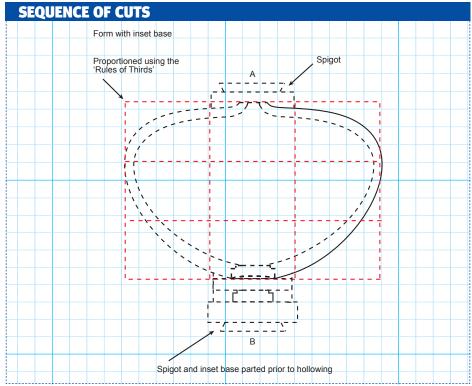
small attractive hollow forms. The photo opposite shows a 125mm diameter beech (*Fagus sylvatica*) form, which is produced in such a way.

- 1. Mount the blank between centres and produce a spigot and waste section on each end with the one at the tailcentre end being approximately 25mm in length  $\times$  50mm diameter at point B.
- 2. Mount in the chuck at A and produce the outside profile. Part in at B to produce a spigot for fitting into the base after hollowing. Finally, part off the insert using a thin parting tool.

#### THREE ALTERNATIVE WAYS OF PRODUCING A HOLLOW FORM

- 3. Refine the base profile of the form and produce a recess in the base to accept the insert.
- **4.** Drill a 5mm hole all the way through the form.
- 5. Hollow through the base with a small hollowing tool checking the wall thickness with callipers and the depth with a gauge as you progress.
- **6.** Run a small amount of medium viscosity CA glue into the recess of the base. Align the grain and insert the parted spigot, then press into place.
- 7. Once set, reverse the form into the chuck via spigot B and bring the tailcentre up into the entrance hole for support. Profile the top of the form into the shoulder and refine with a scraper if required. Finally, remove the tailcentre and refine the entrance hole and rim detail as desired.
- **8.** Finish with abrasive from 120-400 grit and apply your desired finish.
- Reverse the form onto a friction drive as shown in step 15 of the project and finish the base as shown in the main project.

A beech hollow form, which features an inset base





## **MAKING A FORM WITH AN INSET NECK**

## **INFORMATION**

**TIME TAKEN & COST** 

Time taken: 2 hours

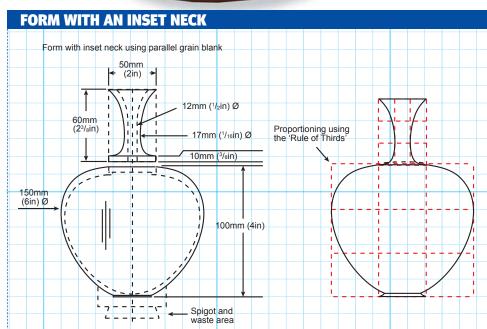
Cost: £5

## **TOOLS REQUIRED**

- 25mm spindle roughing gouge
- 10mm bowl gouge
- 25mm square-end scraper
- 12mm end grain hollowing tool
- 12mm skew chisel
- 2mm parting tool

#### **ADDITIONAL TOOLS**

- 12mm drill bit
- Fine blade hand saw
- Jacobs chuck
- Abrasives from 120-320 grit
- Finishing oil
- PPE: facemask, respirator/dust mask and extraction



#### ■ MAKING A FORM WITH AN INSET NECK



Step 1: place the blank between centres and rough to the round using a 25mm spindle roughing gouge. Clean up the base to a safe distance from the tailcentre using a 6mm parting tool. Produce a spigot and waste area to suit your chuck, then reverse and tighten into the chuck. Measure and mark on the outside the length of the neck plus 10mm; this extra length will be inserted into a recess produced later in the main form. Mark the diameter of the neck on the front face and using a 10mm bowl gouge, turn down to these lines producing a parallel spigot measuring 50mm diameter × 60mm in length



Step 2: mark a second line on the outside of the largest section which is one-third down from the top; this denotes the location of the shoulder of the form so it is proportioned using the 'Rule of Thirds', as shown in the diagram. Using a 10mm bowl gouge, rough the profile of the form below the neck working from the largest diameter to small, stopping a short distance from the join at the neck



Step 3: using a thin parting tool, part in to the right of the shoulder leaving approximately 10mm of the neck remaining. You can then stop the lathe



Step 4: mark a line on the neck and the front of the form at the rim using a pencil as an indication for re-aligning the grain later. Cut through the remaining waste with a fine blade saw. A register mark will be left on the main body, which is used to size the recess later



Step 5: measure the height of the form from the base to rim, subtract 10mm from this and mark onto a 20mm diameter Forstner bit held in a Jacobs chuck. Drill out to depth using the line as a gauge



Step 6: using a 10mm spindle gouge, open out the entrance hole stopping short of the register left when parting the neck. This is achieved by peeling the fibres outwards from the centre with the tool horizontal on the toolrest and the flute facing towards you as shown



Step 7: using the toe of a 10mm skew chisel set horizontal/trailing on the toolrest, produce a parallel recess 10mm deep to accept the neck previously parted. Check regularly with the neck as you proceed, aiming for a snug fit



Step 8: hollow out the form using an end grain hollowing tool. Make sure you do not cut away the face within the base of the recess



Step 9: apply medium viscosity CA glue into the recess, then line up the pencil lines on the neck and body of the form to align the grain and press the neck into place. Bring up the tailcentre to apply moderate pressure. Once set, drill through the neck into the form with a 12mm drill bit held in a Jacobs chuck



Step 10: using a 10mm spindle gouge, blend the top of the form into the neck producing the neck profile and always working from large diameter to small



Step 11: blend the inside profile of the neck to the rim using a 6mm spindle gouge and working from inside out, as in step 7. You are working on a glue join here so take small cuts; this will ensure the tool is trailing slightly and is less likely to catch



main form using a 25mm square-end scraper

Step 12: refine the



Step 13: produce three grooves using a point tool, starting at the join of the neck and cutting one groove either side of this

### **▼MAKING A FORM WITH AN INSET NECK**



Step 14: finish the outside of the form by hand with abrasive from 120-320 grit. Finish the inside of the neck by rolling the abrasive into a tight tube to fit down into the hole



Step 16: reduce the waste section and blend the form into the base using a 10mm spindle gouge, working from large diameter to small at all times. Concave the base slightly leaving approximately 10mm waste remaining, then stop the lathe



Step 18: remove and blend the remaining waste with a power carver or sharp chisel, always working away from your body. Finally, finish the base with abrasive from 180-320 grit using a sanding arbor held in a scrap piece of wood in the chuck



Step 15: produce a friction drive with a cone section that fits into the neck together with a recess in the front face, which will allow the rim to fit snugly into; this prevents the rim from being forced outwards as the base is turned. Mount the form onto the friction drive and apply moderate pressure by bringing up the tailcentre into the indent in the base



 $\textbf{Step 17:} \ \textbf{you can then cut through the waste with a fine saw blade} \\$ 



Step 19: apply several coats of finishing oil with a cloth and wipe away any excess. The project is now finished ●

19





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# Glossary of commonly used woodworking terms

Mark Baker introduces us to some key woodworking terms in this new series

his short series will look at various terms that are used by woodworkers, with some being specific to turners. You will find all of these terms helpful to know when you are starting out turning.

# Annual rings or growth rings

The concentric rings of wood added yearly to the growing tree; in wood from temperate zones these are visibly distinct.

# **Bark inclusion**

Sections of timber which have areas of bark or embedded areas of bark in among the solid sections of timber.



Bark inclusions in a burr poplar (*Liriodendron tulipifera*) bowl blank

### **Botanical nomenclature**

We usually refer to woods by their common or local names, such as walnut (*Juglans regia*), ash (*Fraxinus excelsior*) or jarrah (*Eucalyptus marginata*). Much of the time

this is adequate, but the names for various types of wood can vary considerably from place to place, and the same name may be used for quite unrelated species. We can avoid confusion by using the system of nomenclature devised by the Swedish botanist Carl Linnaeus. The science of classification, for both plants and animals, is called taxonomy. The full classification for a plant is quite long, but there are usually only two categories that a woodworker need be concerned with: genus - plural genera and species. The names used are usually in Latin or Greek, but are not that difficult to memorise with a little practice. European walnut, for example, is termed Juglans regia, whereas American black walnut is Juglans nigra; the first element of the name is the same because both these species belong to the same genus (Juglans). Genus and species names are conventionally written in italics, the genus with a capital letter, the species without.

### Blackheart

Abnormal brown or black non-fungal staining/discolouration of the heartwood, which is not necessarily decayed. Ash can be prone to this, but other timber shows such colouration too. There is no degradation in the timber quality just a colour change.

### Brittleheart

Heartwood that snaps easily across the grain as a result of compression failure in fibres during growth.

# Cambium or cambial layer

The layer between the sapwood and the inner bark, where new wood is created.

# **Case hardening**

A defect caused by excessively fast kiln-drying. The surface of the wood dries faster

than the core, causing permanent stresses that are released when the wood is cut, resulting in severe distortion.

# Checks or checking

Cracks running along the grain, caused by uneven or too rapid drying, which creates stresses within the wood that are greater than the latent strength of the wood. In most cases they are not very deep – hence the term surface checking.

# **Close-grained**

Having narrow growth rings usually indicates that the wood is slow-growing and therefore relatively dense and heavy. Conversely, if the wood is faster-growing, the rings will be wider apart and the wood can be described as open-grained or coarsegrained.



The piece of pine (*Pinus spp.*) on the left has clearly visible and widely spaced growth rings, the maple (*Acer campestre*) on the right has narrower spaced and not so clearly pronounced growth rings

# Collapse

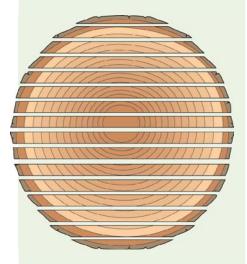
A situation in which the outer layers of the wood dry at a faster rate than the inner parts; this creates tension, which compresses and distorts the cells of the inner wood. Collapse reveals itself as a corrugated surface on the outside of the wood.

# **Conversion**

The process of sawing trees or logs into smaller sections in readiness for use. There are several different ways in which a log can be cut. Some methods are very economical from the woodyard's point of view; others produce more wastage but yield more dimensionally stable timber and, in some species, a more attractive figure.

# Through and through

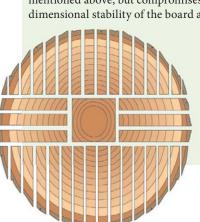
The log is sawn horizontally along its length, and this is repeated until all of the log has been cut. The boards have a wavy or natural edge running along their length. Another term for this is slab-sawing. Wastage is small, but the boards are liable to warp.

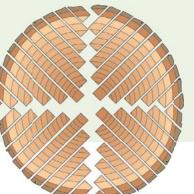


Through & through sawn - also called slab sawn

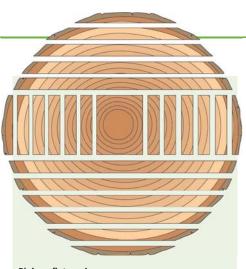
# **Quartersawing**

Traditionally, boards were cut so as to radiate out from the heart of the tree, much as the spokes of a wheel radiate from the hub. Wood cut in this way is very stable, and in some cases – oak (*Quercus robur*), for instance – the wood will yield an attractive ray figure. Because this method of conversion is expensive and wasteful, an alternative method is now used, which is more economical. It still produces the figuring mentioned above, but compromises the dimensional stability of the board a little.





Traditional quartersawn and modern quartersawn



Plain or flat sawing

# Plain or flat sawing

This is similar to through-and-through cutting, apart from the zone that includes the heart of the wood. The heart, because it is unstable, is cut out – boxed – and discarded, but the sections to either side of it are cut at a tangent to the grain – riftsawn.

# Dry weight

The dry weight of wood is typically measured at a moisture content of 12%; but take care when comparing figures from different sources, because different criteria may have been used.

# End checks or end-grain checks

Water travels more quickly along the grain than across it, so moisture is lost at a higher rate from the end grain than from any other part of the wood. This area therefore shrinks at a faster rate than the rest, setting up uneven stresses which result in checks – cracks – developing radially in the end grain.





Storing boards vertically instead of horizontally

# **End-rearing**

This refers to storing boards vertically instead of horizontally. Certain woods, such as European sycamore (*Acer pseudoplatanus*), are liable to develop fungal staining if boards are laid flat for seasoning or storage. To avoid this, and to help retain the natural colour of the wood, the timber should be stored on end. The pieces still need to be stickered to allow air movement.

# **Equilibrium moisture** content

Wood is hygroscopic: it loses moisture when relative humidity is low, but absorbs water when it is high. There is, however, at any given temperature a point at which no water is lost or taken back: this is the equilibrium moisture content.

# **Extractives**

Substances such as metallic oxides and other chemical compounds deposited in the wood that give it its distinctive colour and resistance to decay.

# **Finish-turning**

The process of creating a finished piece of turned work from a blank that has previously been rough-turned and set aside to season and dry further. During the seasoning process, the wood will have moved as a result of stress relief and shrinkage, altering the shape of the original rough-turned item. Once the required moisture content has been reached – which can often take many months – the piece can be remounted on the lathe and turned to the shape that you require, then sanded and finished.

Rough-turned bowl ready for finish turning

# ◆ Grain

The arrangement of the fibres in the wood relative to the longitudinal axis of a tree or piece of wood. Many types of grain pattern are distinguished, such as fine, coarse, interlocked, wavy, etc. The word 'grain' tends to refer to the regular pattern of the wood, whereas figure refers to interesting irregularities.

### Green or unseasoned wood

Wood from trees that have been freshly cut has a very high moisture content and is said to be 'green'.

### Hardwood

Wood from a broad-leaved - dicotyledonous - tree. It is usually harder than softwood, but not always: balsa (Ochroma pyramidale) is a familiar example of a very soft hardwood.

# **Heart shake**

A shake that starts at the pith of a log and radiates from there out towards the edge.



Log showing signs of heart shake

# Heartwood or true wood

The central part of the trunk, which provides support for the tree. It is the hardest, heaviest and most durable part of the timber, and usually the part of most commercial interest.

# Honeycombing or honeýcomb checks

A form of internal damage caused by case hardening, which as a result of stress causes the tissues of the timber to break up and form internal checks. These are usually not visible from the outside.

#### In the round

A term used to describe a project which uses a whole section of the trunk, bough or limb of a tree, rather than a previously prepared blank.

# Kiln-drying

A process that uses a heated chamber, operated by gas, electric or solar power, to dry the wood to a predetermined moisture content. Some woods need to be air-dried before they are kilned, to prevent degrade; others can be kilned immediately after conversion from the log. The best results are obtained when the pieces in the kiln are of a uniform size or thickness; otherwise each piece will respond differently and dry at different rates. Each species of wood requires a specific drying regime in order to produce stable timber that does not degrade during drying.

# Moisture content (MC)

The moisture content of wood varies a lot depending on whether the wood is green wet - or seasoned - dry. The way to tell is by weighing it. The completely dry - ovendry - weight of a given species of wood is a constant, and the moisture content of the wood at any given moment can be expressed as a percentage of this constant. The formula is: MC = weight of water present in sample  $\div$  oven-dry weight of sample  $\times$  100.

# Movement

A general term for the various ways in which wood shrinks and distorts as it seasons, due to moisture loss or the relief of inherent stresses within the wood

# Natural-edge work

Any piece of work which retains part of the natural, unadulterated outer surface of the tree, often including the bark, to create visual contrast with the 'finished' surface.



Natural-edge bowl by Nick Arnull

# Partially seasoned

Not fully dried. More often than not this refers to air-dried wood, but it may apply to any wood that has not been seasoned or dried to the moisture content required for the place in which it will eventually be situated. In the UK, for example, air-dried wood often has a moisture content of 17% or higher, depending on how long it has been cut and stored, whereas the average moisture content in a

centrally heated room is 10-12%. Any wood whose moisture content exceeds that of its immediate environment is deemed to be partially seasoned, and is liable to show movement.

# Radial crack

This happens when the tangential shrinkage in a trunk, log or branch generates stresses which the wood cannot withstand, so that

it splits along the grain. These cracks are usually very deep and can penetrate right to the heart of the tree. It is not uncommon to find more than one, starting from different positions.

Boxwood (*Buxus* sempervirens) branch section showing a radial crack



# Radial surface

A wood surface cut at right angles to the annual rings, as when a log is sawn through its centre. It seldom shows interesting grain patterning, except in woods which exhibit ray fleck or ribbon figure. Surfaces cut at an angle to the annual rings are described as tangential.

### Reaction wood

An area of wood on a branch or a leaning trunk which shows distinctive characteristics because of the tensions and pressures due to gravity. It is denser but much more brittle than normal wood. In hardwoods, it generally occurs on the upper side of the branch or trunk, and is called tension wood; on softwoods it forms on the underside and is known as compression wood.

# **Relative humidity**

The amount of moisture currently held in the air, expressed as a percentage of the amount which the air would hold when fully saturated at the same temperature.

# Ring failure or ring shake

A separation of the wood fibres, occurring parallel to and between the annual rings in the growing tree.

Ring shake on a squared-off log





Yew log clearly showing the sapwood – the creamy coloured outer area and the heartwood – the orange inner area which has a darker outer ring delineating it from the sapwood. Not all timbers have such a clearly defined delineation between them

# **Sapwood**

The softer, less durable, less dense wood towards the outer surface of the trunk, confined in most species to a narrow band in relation to the heartwood. It is not always easily distinguished from the heartwood.

# Seasoning

The process by which 'stable' timber is created. This entails reducing the moisture content, but also relieving the inherent stresses in the wood so as to minimise the likelihood of movement when it is placed in the environment in which it is to be used. Dry wood is more dimensionally stable than wet – green – timber. Strength, hardness and stiffness are increased by up to 50% over that of green wood.

# **Shake**

A serious split in a piece of wood, which is not necessarily a result of the drying stresses.

# **Softwood**

Wood from a coniferous – gymnosperm – tree. It is generally softer than hardwood, but not always; yew (*Taxus baccata*) is a good example of a very hard softwood.

# Sp., spp.

Abbreviations for species, singular and plural. 'Quercus sp.' means 'an unspecified unidentified species of the genus Quercus'; 'Quercus spp.' means 'various species of the genus Quercus'.

# Specific gravity (SG)

This is the measure of the density of a substance relative to that of water. Anything with a specific gravity of more than 1.0 is heavier than water, and sinks when placed in it; an example is satiné bloodwood (*Brosimum paraense*), which has a specific gravity of 1.15. Specific gravity may vary considerably from one specimen to another of the same species. Conversely, field maple (*Acer campestre*) has a SG of 0.69 and therefore floats when placed in water.

# Stump

The base section of the tree, just above and just below ground level. This can exhibit some interesting figuring.



A tree stump showing some interesting figuring

# Synonym or syn.

Scientific names of plants are occasionally changed, as botanists revise their ideas of the relationships between individual species and genera. A synonym, in this sense of the word, is a botanical name that is no longer current in scientific use, but may still be found in older textbooks or in less scholarly sources.

# Wane or waney edge

The natural edge of a plank or board, which may be irregular and have bark on it.

Section of a board of timber with waney edges

# Wet turning

This is the process of turning freshly cut or unseasoned wood. Large shavings are produced – instead of chippings and dust – as well as a lot of water. If you want to turn an item in one go, the piece should be turned to a thin, even wall thickness to reduce the likelihood of splitting. Uneven thickness will cause differential drying rates across the work, and the resulting tension and stress is likely to cause splits. Even when turned thin there will be movement and the piece will shrink, twist and alter in shape. The degree to which this will happen varies depending on the timber used. You can rough turn wet wood leaving even, thick walls, then set them aside for dry turning later on.



Wet turning a piece producing ribbon-like shavings



#### IN THE NEXT ISSUE

In part two, we will be covering grain and figuring in wood in more detail and of course more terms that will be helpful to know about







# Setting the Standard for Carbide Tipped Tools

# Osprey #1 & #2

Wouldn't it be great to have a gouge that never needs sharpening? A gouge that's really stiff so that it can be used way over the toolrest in deep work? These super-gouges are at home on spindles or bowls, inside or out. Super sharp yet never needful of sharpening, these could be the tools that turners everywhere have dreamed of owning. Dream no more: the reality is here, the dream made flesh - sort of!



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# Jimmy Clewes Design - #5 Hunter Tool

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# Mark St Ledger #1 Box Hollowers

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In profile: the work of Andy Cole

Walter Hall answers some frequently asked questions on pen turning

We are in the workshop with Belgian turner **Luc Boeye** 

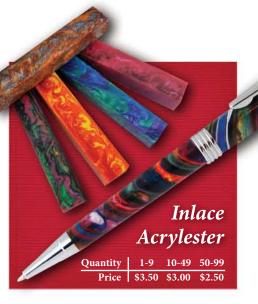
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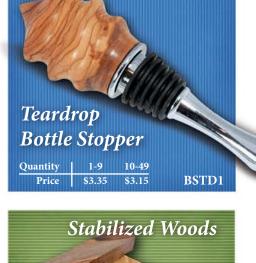
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Philip Greenwood turns a decorative box on a stand

his box is made with zebrano (Microberlinia brazzavillensis), also known as African zebrawood, which comes from Central America. The box's size makes it useful for storing small items, such as jewellery. The stand is made from cherry (Prunus spp.) to contrast with the box, but you could use the same timber for both if preferred. The stand could be omitted if you wish, but including it makes this a more stunning and decorative piece. As with most things, design can be very personal and I would class this as a decorative item.

I used a block that I cut in two to make my box; an alternative is to buy two thinner blanks of timber or buy a plank and cut two pieces from this if you don't have a bandsaw. You could use a hand saw instead, which will warm you up on a cold day in your workshop! The downside of using two blocks is that you do not get grain continuity running through the box

if the timber has a strong grain pattern, so in that case I would go for a 'bland' timber and use a more striking timber for the stand. Once cut in two, the zebrano is only 23mm thick, so I used a sawtooth bit so I could hold it in the recess with the chuck jaws. I could have used a screw chuck and placed a packing piece to reduce the screw length, or used a faceplate with short length screws. You need to make sure the piece is fixed firmly to the lathe and you are wearing a face shield, and, as always, wear a dust mask while in the workshop.

The stand for this box to sit on is shallow, but a more arched one could be turned to give extra height if desired, or you could even turn a flat board with a dip in it to accommodate the box. The choices are endless, as with most projects. Choose whatever style you like, or if this item is a gift, then alter it to suit the style of your friends and loved ones.

As normal, I am only using basic tools that can be found in your workshop. People are often surprised by how many different items can be made with a good-quality set of basic tools and basic equipment, such as the lathe I use for this project.

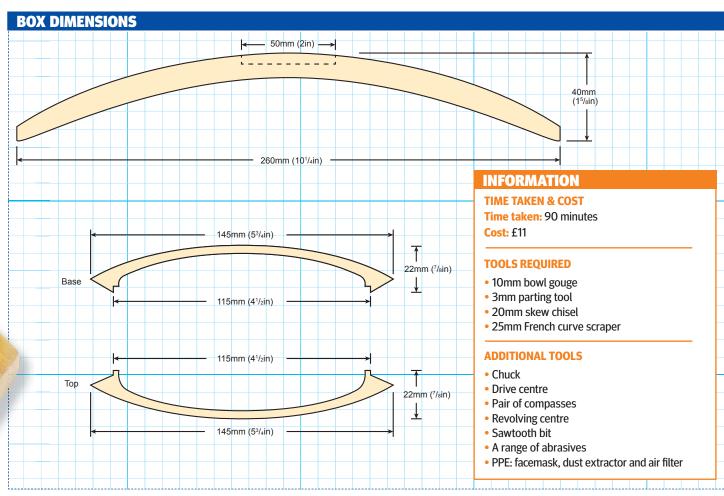
### **PHILIP GREENWOOD**



About the author: Philip has been turning wood since 1980 and started turning professionally in 1986. He was accepted onto the Register of

Professional Turners (RPT) in 2006. He is also a member of the AWGB. He can be seen working in his workshop in North Yorkshire and has demonstrated at the woodworking show at Harrogate since 2008. He also runs courses at his workshop.

**Email:** philip@woodturningintoart.co.uk **Web:** www.woodturningintoart.co.uk









Begin the project by cutting the block in half on the bandsaw, keeping the guard as low as possible to keep the blade covered, and use pushsticks to gently push the block through the saw. Notice how the grain is running horizontal to the blade. Connect a dust extractor to the bandsaw to remove the dust

Next, mark the centres of the blocks on the cut face and, using a pair of compasses, draw a circle on them. Bandsaw the corners off, keeping as close as possible to the line. Use a sawtooth bit the same size as the recess needed for the chuck jaws to fit in and clamp to the drill table for safety. This only needs to be 4mm deep

# "Connect a dust extractor to the bandsaw to remove the dust"

3 Mount on the chuck in the recess you have created and mark the spigot diameter on the face. Use a parting tool to cut the recess; I cut this 3mm deep. True up the diameter with the bowl gouge and then take a cut down the face until you meet the recess

Use the long point of the skew chisel to cut the dovetail to match your chuck jaws. Hold the skew horizontal and flat on the toolrest and take a light cut until the dovetail is cut clean. Do this for both the lid and base

5 Hold on the spigot; this one will become the lid. Mark a pencil line for the joint around 18mm from the edge. Using the bowl gouge, start turning the centre out but don't get too carried away – this is only a thin piece of timber, so just aim for a shallow curve

6 Use a scraper to clean the surface until it's smooth and any tool marks are removed. Use the scraper in a trailing mode, i.e. with the tip lower than the handle – you will need to raise the toolrest so the tip is at centre height. Now sand the centre going through the abrasive grits until you reach 400

Vise the parting tool or a skew chisel to cut the recess. This needs to be 4mm deep and parallel to the lathe bed; this will make fitting the lid easier later. Sand with 400 grit abrasive only as you do not want to round over the corner edge. This is why it is best to sand the centre before

You can now chamfer the outer edge of the box with the bowl gouge, using a push cut – you will need to take several small cuts to achieve this. Work towards the edge leaving just a small flat near the joint

The only part that needs sanding is the chamfer that you have just turned. Go through all the grades until it's smooth and then apply cellulose sanding sealant to all areas of the underside of the lid. You can put this to one side for now

10 Now mount the base in the chuck holding on to the spigot. Use the bowl gouge to clean the face of this until it's flat at the outer edge

# **Handy hints**

- 1. Wear a dust mask and safety glasses when turning. If turning an odd-shaped item, always wear a full face shield. A catch could mean a piece may break off or the piece could come off the lathe
- **2.** Only sand an irregular shaped item by hand as it is too dangerous to sand with the lathe rotating
- 3. You need 100% concentration when turning a stand like this a distraction could mean disaster
- **4.** Make sure your timber is sound with no cracks or faults in it































11 Take a measurement from the lid recess and then add at least 4mm to this to give you a safety margin. Divide this number by two to give you the radius and mark from the centre. Double-check this measurement; remember: measure twice, cut once

12 Start removing the centre of the bottom half, leaving at least 6mm from the pencil line. Again, do not go too deep. You will finish the rest of the centre later on

13 Now we need to fit the lid. Use a parting tool to cut close to the pencil line; this cut should be 3mm deep. Remove the waste to the left to aid fitting. Keep trying the lid and only take very light cuts off the diameter until the lid fits very tightly. It is all too easy to take too much off and then the lid will be slack, which we do not want

14 Now that the lid is fitted to the base, bring up the tailstock with the revolving centre in for support. Use the bowl gouge to take light cuts to shape the lid. Keep the tailstock in place until you only have a small pip in the centre, then remove the tailstock to remove the pip

# "It is all too easy to take too much off and then the lid will be slack, which we do not want"

15 Use a scraper to remove any ridges and tool marks. Hold the scraper lightly as you are only taking light cuts and remember to hold it in a trailing mode to avoid any catches. You can achieve a keen edge on the scraper by drawing a diamond file down the front edge three or four times

16 Sand the lid to remove any small marks left by the scraper. Start with 120 grit or finer, going through to 400. Keep checking to make sure all the marks have been removed. Seal the lid with sanding sealant, then de-nib

17 Remove the now completed lid and start to finish the inside of the base. Start with the bowl gouge before moving on to the scraper to refine the surface. Do not remove too much near the lip or it will weaken the lip. Chamfer the edge as you did for the lid in step 8. Sand and seal all areas

18 Mount a scrap piece of timber in the chuck to make a jam chuck. Mark the diameter of the base lip and keep making the recess diameter larger until the base will fit in the recess. This must be a tight fit, so remember to take small amounts away

19 Now the base is held in the jam chuck with tailstock support, start shaping the bottom of the base with the bowl gouge, taking small light cuts, and looking for a flowing curve

20 With the tailstock removed, finish the centre part using the bowl gouge, then switch to the scraper to refine the surface.

Sand and seal the base as before

21 Place a screw in the chuck and then mount a piece of timber to make the stand, this will become the top. Always keep your fingers and hand at your side of the toolrest. Take small cuts starting at the edge and working towards the centre until you have a nice curve. Use a push cut with the bowl gouge, keeping the bevel in contact all the time, to achieve a smooth surface

22 With the lathe stopped, mark the centre with a pencil and then mark 25mm from this. Now rotate the stand by hand and mark the 50mm diameter

# "Take small cuts starting at the edge and working towards the centre until you have a nice curve"

23 Create a small recess for the box to sit in; this also becomes a chucking point to enable you to turn the underside. Use a parting tool to cut down the inside of the pencil line but only go 3mm deep. Now remove the centre with a bowl gouge, refine the centre with the scraper and use the skew chisel's lone point to cut a small dovetail. With the lathe switched off, sand by hand only, going through all the grits, then seal. It is too dangerous to sand with the lathe switched on and rotating

24 The stand is now mounted on the chuck using the recess. Bring up the tailstock for support. Now start shaping the underside from the outer edge, take this down in layers to the final thickness as this will reduce flexing when cutting. Stop the lathe and check the thicknesses as you go, look for an even edge thickness before moving on to the next layer

25 The tailstock is removed to finish the centre part off. Once you're happy with the finish, stop the lathe and sand by hand as before. Do not forget the edges will need sanding as well. Then seal and wax by hand

**26** The completed box on a stand is now ready for displaying •

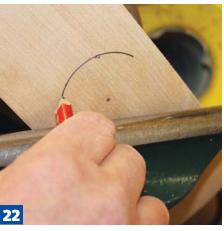














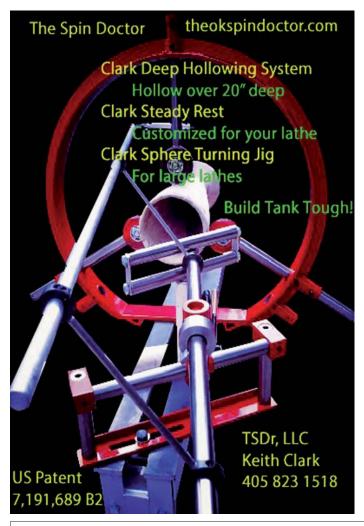




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# Ring stand

**Guy Ravine** shows you how to make an elegant ring stand in wenge

his project, based on Victorian glass ring stands, is made using one piece of wood. Wenge (Millettia laurentii) is one of the cheaper, naturally dark, woods. An exotic wood version would perhaps be made in two parts: any of the rosewoods would be suitable and ebony (Diospyros spp.) was a favourite in Victorian times, when many variants of this were made.

Skill is needed to impart grace into the design of this project. I turn these between centres, for speed of production, but the parting process must be carefully done with this method. If time is not an issue, it could be held in a chuck. A 100mm length of  $2 \times 2$  is turned into a cylinder, and 'waste' turned away with a 10mm parting tool. The spindle turning on the shaft is done with the 'solid spindle' gouge, which is a spindle gouge

without the flute. In this project, I use the solid spindle as both a cutting and a scraping tool. The spindle details are cut, but the 'bowl' section is scraped with the piece between centres.

### **GUY RAVINE**



About the author: Guy took up woodturning in 1979, following on from his father, Gus, who was also a professional woodturner. Guy

produces a wide variety of work, including both bowl and spindle pieces. His work is widely displayed throughout the UK. Guy is chair of the RPT and a demonstrator, who teaches classes as well as individuals at his Northamptonshire workshop.

Email: gr245@hotmail.co.uk

# **RING STAND DIMENSIONS**

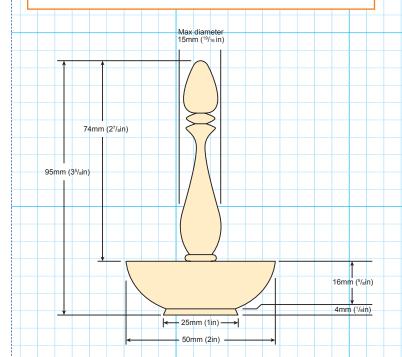
### **INFORMATION**

TIME TAKEN & COST
Time taken: Around 25 mins
Cost: £1-3

# **TOOLS REQUIRED**

25mm spindle roughing gouge

- 10mm beading & parting tool
- 10mm solid spindle gouge or a 10mm spindle gouge and 13mm round-ended scraper



#### THE BASE:

The turning of the bowl section is quick and easy once the tool is mastered. It will work as a scraper if presented in trailing mode. The toolrest can be angled in to allow good access for the solid spindle or a round-

ended scraping tool. I tend to do this section in conjunction with an arm rest; this saves moving the toolrest, a significant time saving in a production run. Mastering an arm rest is a useful thing to do, as it will be necessary in thread chasing, and can often provide a solution to difficult tool access on small projects

# **Handy hints**

- **1.** Wenge is a dusty and splintery wood, but the results usually make it worthwhile
- **2.** Don't make the centre shaft too thick. Women's fingers are generally much daintier than men's!



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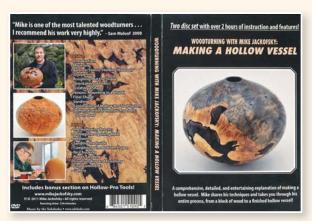
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# **DVD** review

# **WOODTURNING WITH MIKE JACKOFSKY:** MAKING A HOLLOW VESSEL



n this two-disc set, Mike takes the viewer through the full process of making a hollow form, from blank to finished piece. He explains how he approaches turning hollow forms and imparts lots of tips along the way to make things safe and more enjoyable. He explains the importance of stance and how he holds the tools to maximise control and minimise effort. He imparts some useful tips on holding the piece on the lathe and explains the turning sequence. He also explains how he eliminates a crack that appears when he initially roughs down the piece.

This DVD is very professionally produced and well structured. At the end it includes a number of images of Mike's work to provide some inspiration. I would have liked it if Mike gave a bit more explanation of how the tools are presented and cut the wood, but overall this is a very useful demonstration for those interested in starting or improving their turning of hollow forms.

Hilliard Tanner

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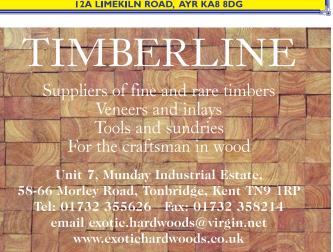


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# Dan Tilden – Madrone Dan Tilden talks us through the process for making one of his madrone 'Walkabout' vessels

s an artist I am always trying to come up with new ways to develop my pieces and take my artwork to the next level. In my latest work, I have been experimenting with adding legs to my vessels. I like to call the pieces 'The Walkabouts'. At first, I thought of incorporating longer feet onto a vessel – feet that are often seen on bowls - but I would be 'turning' the feet into legs. My favourite material to turn is green madrone burl (Arbutus menziesii) and I thought the natural movement that comes with the wood would complement the legs nicely. With the movement that occurs using madrone burl, I like to think the pieces look weathered and aged. Once I had completed a couple of these vessels I stood back to analyse and critique the work and thought the name 'The Walkabouts' was appropriate because they looked like wooden characters that had been on a long journey with nature.

I turn a vessel at the top of my turning block, leaving a solid wood cylinder at the bottom that is as long as I want the legs to be. After I turn a shape that I am happy with, I also turn a shape for the legs on a solid wood cylinder. You could have legs that spread out in a wide stance or straight legs that stand vertically. It all depends on how you shape your lower 'leg' cylinder. After marking up the outside shape on the bottom of the hollowed vessel, I remount the piece in-between centres using a tenon-friction chuck. The long tenon mounted with a chuck extends to the bottom of the vessel and the tailstock mounts the centre of the 'leg' cylinder on the other side. I then hollow out a bowl at the bottom of the vessel, stopping where I marked the bottom of the vessel so I don't go right through the wood. After the

I mark where I want the legs to be and cut away the excess bowl with a Japanese pullsaw. There is a lot of rough sanding involved to blend the shape of the vessel and down through the legs. This is a lot of extra work and removal of material, but I believe the process of developing a different idea shouldn't be comprised with the thought of wasting time or wood.

Another thing I like about the idea of legs is that you don't have to turn a foot or sand a flat surface for the vessel to sit on. The additional length of the legs provides the viewer with an opportunity to see the full shape all the way through the vessel. The foot on a vessel always seems to be a personal preference in the woodturning field. The addition of the legs provides lots of possibilities. Various pieces from the 'Madrone Walkabout' series, 380mm tall





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