

ROUTING ON THE LATHE • USING CA ADHESIVE AS A FINISH ON PENS

Woodturning

THE WORLD'S LEADING MAGAZINE FOR WOODTURNERS

Kurt Hertzog's guide to what you need to know about threading wood

Using bowl gouges and scrapers

PROJECTS

- Neil Scobie – textured platter
- Hollow forms & shelves
- 3 turned vessel designs for you to make

Richard Findley on how to achieve a perfect finish on you turnings

In profile: Charlie Shrum's turned & carved work



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- Hollowing tools
- Spoke shave blades
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WG250/R Stone Grader

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Speeds: 90 - 150 rpm

Stone Size: 250 x 50 mm

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Woodturning

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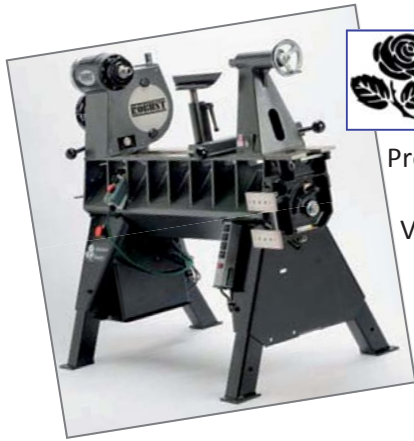
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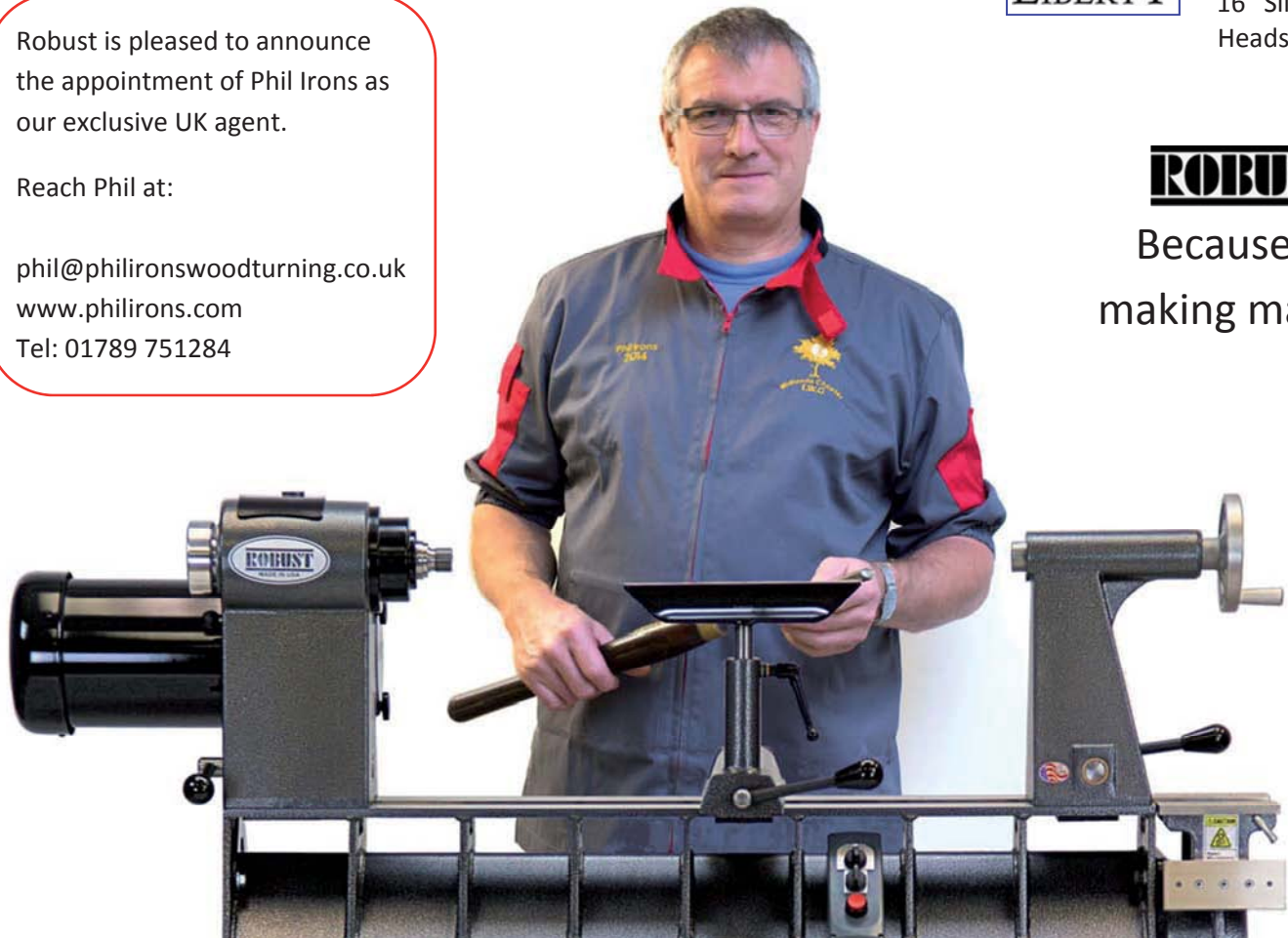
Robust is pleased to announce
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www.philirons.com
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25th year celebrations

There are no certainties in life apart from when trying to do something important. Something crops up that throws those plans into disarray – usually something that just has to be dealt with now! You know the type of things I mean and how at the time you are told they are critical, have to be done now and as a result, you have to drop everything to sort them out. In real terms, they invariably do not involve serious injury, imminent danger or something akin to these, but as a rule, one is not given the full details so it is hard to make a value call as to whether it should take precedence over what you are currently doing. I have resolved this year to be a lot more hard-nosed about my time so I can get the things done I need to and that which I am committed to do for others.

I mentioned before that this year – autumn in fact – will be the magazine's 25th anniversary and that is a huge milestone for any publication, so we are wondering what we can do for that. This year will also see my 25th wedding anniversary so I'll be away on holiday celebrating this during the earlier part of the year. With my being away so much, my wife says that we have only really probably spent seven years of that time together, but something is working so I will stay quiet on that comment!

I am, as usual, out and about a lot this year with visits and demonstrations and I also have to complete two books and it has been hinted at that there is also some house redecoration. Hmmm! I wonder if I can plan to be away for that time? I dare not, I think. So, as you can see, there is a great pressure on time build up and it is not always something that you want to do, but in this case, I must, if only to keep the peace and to maintain our house.

Of course none of that can impinge on my work. There are four woodworking magazines in the department and that equals 45 issues per annum. So in real terms, one going to press about every six working



Turning just one of the items on my list

days, plus we have our website – www.woodworkersinstitute.com – and I also have to get involved in other aspects of work as required. I must admit to loving the mix, but where does that leave turning? Well in truth, I do it where I can. Many will nod sagely and agree that this comment is an all too often repeated phrase. I need to do some R&D on

some new items I have in mind to create and also have some presents and presentation items to make so it is still happening, but the turning activity will not be as frenetic as last year, but hopefully just as much of a giggle.

Have fun,
Mark

markb@thegmcgroup.com



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, or see us on Facebook & Twitter.

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Neil Scobie turns a shallow bowl and shows you how to add a variety of different textures

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After spending hours, days or even weeks creating works you're so proud of, it's often difficult to find a way of drawing attention to each form's individual integrity



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Terry McDonald crafts a wooden beer mug



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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

Subscribers!

Turn to page 60 for subscription special offers and you could save 30%!



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Find out what's in store for next month



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Charlie Shrum in profile

We find out more about Florida-based woodturner Charlie Shrum

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We find out more about woodturner David Bettinghaus

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Featured Artist – Mike Mahoney

Mike Mahoney shares this nest of madrone bowls with us, which despite looking stunning, are a real challenge to turn



Kit & Tools

95

KIT & TOOLS

A mixture of tests, press releases and reviews showing the latest tools and products on the market. All prices include VAT, and are correct at time of going to press



25



77



33

Conversion chart

2mm (5/64in)
3mm (1/8in)
4mm (5/32in)
6mm (1/4in)
7mm (9/32in)
8mm (5/16in)
9mm (11/32in)
10mm (3/8in)
11mm (7/16in)
12mm (1/2in)
13mm (11/16in)
14mm (7/8in)
15mm (3/4in)
16mm (5/8in)
17mm (11/16in)
18mm (23/32in)
19mm (3/4in)
20mm (7/8in)
21mm (13/16in)
22mm (7/8in)
23mm (23/32in)
24mm (5/8in)
25mm (1in)
30mm (1 1/8in)
32mm (1 1/4in)
35mm (1 3/8in)
38mm (1 1/2in)
40mm (1 5/8in)
45mm (1 3/4in)
50mm (2in)
55mm (2 1/8-2 1/4in)
60mm (2 3/8in)
63mm (2 1/2in)
65mm (2 5/8in)
70mm (2 3/4in)
75mm (3in)
80mm (3 1/8in)
85mm (3 1/4in)
90mm (3 3/8in)
93mm (3 3/4in)
95mm (3 7/8in)
100mm (4in)
105mm (4 1/8in)
110mm (4 1/4-4 3/8in)
115mm (4 1/2in)
120mm (4 3/4in)
125mm (5in)
130mm (5 1/8in)
135mm (5 1/4in)
140mm (5 1/2in)
145mm (5 3/8in)
150mm (6in)
155mm (6 1/8in)
160mm (6 1/4in)
165mm (6 1/2in)
170mm (6 3/4in)
178mm (6 7/8in)
180mm (7in)
185mm (7 1/4in)
190mm (7 1/2in)
195mm (7 3/4in)
200mm (8in)
305mm (12in)
405mm (16in)
510mm (20in)
610mm (24in)
710mm (28in)
815mm (32in)
915mm (36in)
1015mm (40in)
1120mm (44in)
1220mm (48in)
1320mm (52in)
1420mm (56in)
1525mm (60in)

HEALTH AND SAFETY

Woodturning is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines. All readers should observe current safety legislation.

Pen Turning and Gouges at Olivers Woodturning

Pen Turning Tools and Supplies

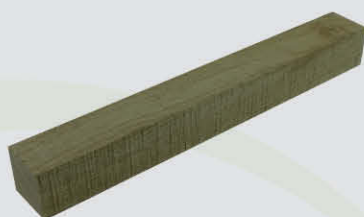
7mm Brass Pen Tubes (10)	£3.64
Pen Bushing Kit	£5.40
Cigar Pen Kit (Gold/Chrome)	£8.38
Gold Fountain Pen Kit	£10.09
Gold Rollerball Pen Kit	£10.40
Gold Twist Pen Kit	£16.78
Premium Twist Pen Kit	£17.10
Satin Chrome Twist Pen Kit	£16.78

Acrylic Pen Blanks	£3.75
3/4" Wood Pen Blanks	From £4.72

Universal Pen Mandrel	£27.60
Deluxe Collected Pen Mandrel	£37.50
Pen Turning Kit	£65.82
Deluxe Pen Turning Kit	£77.94
Pen Blank Vice	£68.10
Pen Blank Trimming Tool	£16.20
Pen Blank Trimming Tool Kit	£32.10
Pen Insertion Tool - Soft Handle	£10.39
Pen Insertion Tool - Wood Handle	£13.14
Pen Press	£53.95



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English Walnut



Bog Oak



Olive Wood

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Ashley Iles Bowl Gouges

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Robert Sorby 843H Roughing Gouges

3/4" £41.33 - 1 1/4" £62.68

Ashley Iles Spindle Roughing Gouges

3/4" £54.60 - 1" £58.08 - 1 1/4" £67.56

Robert Sorby 840H Spindle Gouges

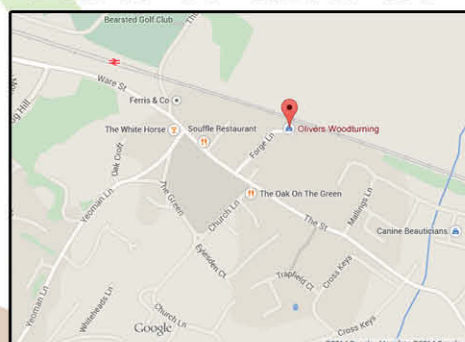
1/4" £21.26 - 3/8" £23.96 - 1/2" £29.88

Ashley Iles Spindle Gouges

1/8" £18.96 - 1/4" £19.80 - 3/8" £22.32 - 1/2" £24.00



How to find us



If you would like to visit us you can find us near Bearsted Green. Look for the Bearsted and Thurnham's Club (with a clock on the front). Follow the small lane next to the club and at the top turn to the right. We are in the last of the units with green cladding.

If you have any trouble call us on 01622 370280 for directions.

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

MSWA celebrates its Silver Jubilee



Mid Staffs Woodturners Association celebrated its 25 year anniversary at a special hands-on and social evening, which was held back in November, 2014. Some woodturning did take place, with three lathes available but, as expected, the event was mainly an opportunity for socialising and reminiscing.

History

The club was formed by Ken Allen in 1989 at an informal meeting at his home. Ken had already started South Cheshire Woodturners – later to become Staffordshire and South Cheshire Woodturners' Association – the previous year after many years demonstrating in Australia and the UK. The first 'official' meeting of the MSWA took place in October, 1989 at a church hall in Rugeley, Staffordshire and was attended by 18 members and included a demonstration of how to set up and use a bandsaw. Ken, along with several other founder members, still attends regularly and occasionally demonstrates at club evenings. Early the following year, the club moved a short distance to its present venue, Etching Hill Village Hall.

Over the first year or so, the club grew to a peak of 60 members, but since then membership has fluctuated from 30 to 40 and currently we are delighted to have five female members. The club is affiliated to the AWGB.

Sadly, but inevitably, many of the founder members have now passed on but the club has continued to recruit new members and maintain an enthusiastic committee. The majority of members are retired, as seems to be common in many woodturning clubs, but there appears to be enough younger members to hold hope for the future of the club. We do hope to encourage more young people to take up woodturning.

For several years, Ken also hosted an annual event at his home workshop, with up to seven lathes operated by friends of his who came along free of charge to the club. Among the list of names he attracted were Rolly Munro, Ken Sager, Reg Sherwin and Ray Key.

Monthly meetings

These take place in the evening on the first Friday of the month and usually take



PHOTOGRAPH COURTESY OF THE MID STAFFS WOODTURNERS ASSOCIATION

Members of the Mid Staffs Woodturners Association

the form of a demonstration by a professional demonstrator. Occasionally the demonstration is provided by a club member and for the last two years, hands-on/social evenings have been introduced and have proved popular, with several members bringing their own lathes to supplement the club one. These meetings have also included lathe tool sharpening and hand-saw sharpening workshops and wood sales.

Members are invited to bring items for the display table at all meetings, including those that are 'in process' and 'disasters'.

Competitions

Competition in earnest seems to have started in 1996 when three competitions were introduced with trophies being awarded at the AGM. Alternate months are for novice and more advanced turners – winning the novice trophy excludes a member from that class in future. The entries are judged by members and visitors using a blind ballot during the refreshment

break and the results are aggregated using a weighted points system to produce the winners for the year. The third, annual, competition is for the Premier Trophy, open to all members, and is judged at the AGM.

Outside events

The club attends a number of local craft fairs and country shows as a means of promoting the club and woodturning in general. The club lathe is not portable but a lathe is provided by a member for these events so we can demonstrate our hobby. These activities provide an opportunity for members to display their work and to raise funds for the club and to enable it to make charitable donations.

Hugh Field

When: First Friday of the month – 7pm start

Where: Etching Hill Village Hall, East Butts Road, Etching Hill, Rugeley WS15 2LU

Contact: Mid Staffs Woodturners Association (MSWA)

Web: www.mswa.co.uk

Gorey and District Woodturners – one-day seminar

Gorey and District Woodturners will be holding their one day seminar on 7 March, 2015. The event this year welcomes demonstrators Binh Pho, Nikos Siragas and Richard Kennedy. The Gorey seminar is the first seminar of the year in Ireland and has gone from strength to strength. Last year saw 180 delegates sitting down for a fantastic three-course meal in the Amber Springs hotel and this year could prove to be the biggest one-day seminar Gorey has seen yet. The event promises some great demonstrations, good food and a sociable atmosphere. The venue is situated an hour and a half away from Dublin airport,

40 minutes from Rosslare Euro Port and there is also a train station located next to the hotel. The cost for the day is €75 (£60), which includes a three-course meal.

When: 7 March, 2015
Where: Amber Springs Hotel, Gorey, Co. Wexford, Ireland
Contact: Terry Cruise
Tel: 086 8115243
Web: www.goreywoodturners.com



A piece turned by a member of the Gorey and District Woodturners

Coombe Abbey Woodturners Club – Festival of Crafts

Coombe Abbey Woodturners Club is bringing back the hugely successful Festival of Crafts event, which will be held at the picturesque location of Coombe Country Park in Coventry from 12–13 September, 2015.

Due to the massive popularity and success of last year's one-day event, this year's will run for two days. The Festival of Crafts was set up to promote traditional crafts, which all the family and friends can enjoy. For more information about this event, see details below.

When: 12–13 September, 2015
Where: Coombe Country Park, Brinklow Road, Coventry, Warwickshire CV3 2AB
Contact: Martin Hitchiner
Email: coombeabbeywoodturners@gmail.com
Web: www.coombeabbeywoodturners.webeden.co.uk



'Brampton 2014 winners'

Northumbrian Woodturners' annual tool auction

Northumbrian Woodturners recently held their annual tool auction, which proved to be a very busy and productive evening and was enjoyed by around 75 members and guests.

Auctioneer Stan Oakey reported a total of 108 lots being sold with bidding brisk and some spirited offers being made by club members. Of special interest were goods on offer, which had been donated by trade supporters.

This was the fifth year in succession that the club has held the auction, which has now

developed into an annual event and grown in size and content each year. The next event will be held on the the second Friday in December this year. Be sure to put the date in your diary – you could pick up a bargain.

Northumbrian Woodturners would like to thank the following persons and companies for their help and support:

- Ashley Iles
- Axminster Tools & Machinery
- Country Barn, Widdrington
- Crown Hand Tools
- Hamlet Craft Tools

- John Boddy Timber Ltd
- Mark Baker
- Martin Pidgen
- Robert Sorby
- Snainton Woodworking Supplies
- The ToolPost
- Turners Retreat

Contact: Northumbrian Woodturners
Email: stan.oakey@talktalk.net
Web: www.northumbrianwoodturners.com



Walnut (*Juglans regia*) bowl, 305 x 100mm, by mark.a



Burr elm (*Ulmus procera*) platter, 300mm dia. x 10mm thick, by walshp



Post box inspired by Ian Wilkie's design, tulipwood (*Liriodendron tulipifera*), made in four separate parts, 200mm tall x 90mm at the widest part, by Dalboy

Steve Ungi – a tribute

Steve Ungi had a career in the Royal Electrical and Mechanical Engineers where he attained the rank of Major. After he retired from the army, he took up a second career in teaching.

I first met Steve when he was working at Rookwood school in Andover teaching technical subjects, including woodturning. We discussed him forming a

turning club at the school and this he did. He linked the club to the Young Turners Development Programme, which is sponsored by the Worshipful Company of Turners, London and the AWGB.

He was a gifted tutor and was passionate about the craft and golf. He gave up a lot of his time teaching golf and woodturning, in particular to youngsters.

When the Worshipful

Company donated a wood lathe to Grateley House School for children with special needs, Steve very quickly agreed to teach tutors the necessary skills required for these students.

Two weeks before he died, Steve confirmed to me that the main tutor at the school had reached the required standard to take turning into the future at the school.

Steve was well known in local woodturning circles and was an enthusiastic member of the Stuart Mortimer woodturning group in Grateley, Hampshire.

Steve was a devoted family man and was also very patient and generous with his time in helping others. He will be sadly missed by all.

Stuart Mortimer

PHOTOGRAPH COURTESY OF SEAMUS CASSIDY



Seminar day with Seamus Cassidy

Chelmer Valley Woodturners will be holding a demo day with artistic woodturner, Seamus Cassidy later this year. Seamus' work varies from functional pieces to artistic sculptural pieces, with many being created from native woods. His award-winning piece 'Jugular' was the 'Featured Artist' feature in issue 269 of *Woodturning*. The event is open to all interested woodturners and woodworkers, not just AWGB members and the hall has full disabled access. For more information, see below.

When: 23 August, 2015

Where: Mountnessing Village Hall, Roman Road, Mountnessing, Brentwood, Essex CM15 0UH

Tickets: £16, including refreshments and buffet lunch (10am-4.30pm)

Contact: Louise Biggs

Tel: 01245 400 728

Web: www.chelmerwood.co.uk

Turners Retreat – diary dates for 2015

One of the features of Turners Retreat is the woodturning demonstrations, which are held at Faraday Close, Harworth. These take place most months of the year on the second Saturday. The demonstration events usually last from 10am-4pm, unless stated otherwise. Some demonstrations do require a £3 entry fee, which gives you entrance to the demonstration, free refreshments all day and a ticket for the prize draw. Car parking at the store is free.

The next demonstration taking

place is the two-day spring event, which features Stuart Mortimer. The autumn event in September also features a demonstration from Mark Baker. More information can be found on the website.

When: Spring event – 25–26 April, 2015; autumn event – 19–20 September, 2015

Where: Turners Retreat, Faraday Close, Harworth, Nottinghamshire DN11 8RU

Contact: Turners Retreat

Tel: 01302 744 344

Web: www.turners-retreat.co.uk

The Midlands Woodworking and Power Tool Show

The next date in the woodworking event calendar is this year's Midlands Woodworking and Power Tool Show, which takes place from 27–28 March. Advance tickets are now on sale for the event and the demonstrator list has been announced. There is something to appeal to every woodworking discipline, whether you're a woodturner, woodcarver, have a special interest in finishing, or prefer general woodwork. On the turning side of things, you can expect to see Jennie Starbuck, Tony Wilson, Mick Hanbury, Reg Slack and Andrew Hall. Master woodcarver Michael Painter will also be demonstrating as well as finishing expert Mark Raby and furniture maker Peter Sefton. This event is billed as a great day out full of demonstrations, personalities, trade stands and fun. In addition to this great line-up, the show also boasts free parking, show guide and raffle. You can receive the latest news and keep up-to-date with the latest announcements by visiting the Facebook and Twitter pages for the event. See below for further details.

When: 27–28 March, 2015 **Where:** Newark Showground, Lincoln Road, Newark-on-Trent, Winthorpe, Newark, Nottinghamshire NG24 2NY

Contact: Nelton Exhibitions **Tel:** 01474 536 535 **Web:** www.nelton.co.uk



Box in ash (*Fraxinus excelsior*) with teak (*Tectona grandis*) lid, by Vwsorensen

'Pot of Gold', 360 x 200mm, finished with Chestnut gold gilt cream, by edbanger

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Chucks



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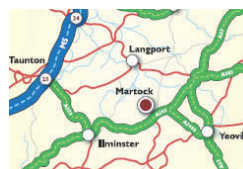
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Using CA adhesive as a finish

Walter Hall looks at using CA adhesive as a finish on pens

REFERENCES

1. Concise International Chemical Assessment Document No.36
Online: www.who.int/ipcs/publications/cicad/cicad36_rev_1.pdf
2. Health and Safety Executive:
ISBN 978-0-7176-6454-2
Online: www.hse.gov.uk/pubns/priced/hsg53.pdf

In the search for a long lasting, robust and high gloss finish for pens and other small turnings, many turners and pen makers have found that using cyanoacrylate adhesive – often referred to as CA – is an effective way of doing the job. This article explains the nature of cyanoacrylate, the health and safety risks associated with its use, suitable personal protection and also its applications as a finish and some of the methods used to apply and polish it.

WALTER HALL



Walter Hall is a woodturner who has specialised in making pens and pencils for more than 20 years. Based on the beautiful Northumberland coast in the UK, Walter sells his bespoke pens and pencils through local craft centres and via his website.

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www.walterspens.co.uk

What is CA?

Cyanoacrylate adhesive is an acrylic resin. In chemical terms it is a monomer, which cures by polymerisation. In simple English this means that it consists of single molecules that are capable of reacting with other molecules to form chains known as polymers. The trigger for this chemical reaction is water and the normal levels of water vapour in the air are

sufficient to enable cyanoacrylate to polymerise – cure or harden. Certain other chemicals such as cellulose will also trigger polymerisation.



PHOTOGRAPHS BY WALTER HALL



ABOVE: Cyanoacrylate is available in thin, medium and thick formulations

LEFT: Using an accelerator will speed up drying

Health and safety

As cyanoacrylate polymerises it gives off fumes, which are acrid and unpleasant. These fumes are not toxic and contrary to myth they do not contain cyanide, but they can cause irritation to the eyes, nose and throat. In approximately 5% of people they can cause an allergic reaction with flu-like symptoms and there is evidence that they may exacerbate asthma in some individuals. Contact with the skin, while it may result in the inconvenience of gluing your fingers together, is unlikely to cause significant harm, although there is some evidence that repeated exposure can cause skin irritation in some people. Those interested in a full assessment of the health risks may wish to read the World Health Organisation publication Concise International Chemical Assessment Document No.36, which is available online – www.who.int/ipcs/publications/cicad/cicad36_rev_1.pdf.

Although the risk of harm is small it makes sense to avoid inhaling the fumes and this can be achieved either by good ventilation – for example, drawing the fumes away using a workshop vacuum or dust extractor, or by wearing a suitably rated face mask. Woodworking dust masks are not suitable as they will not protect against chemical fumes, a mask or respirator rated for gas and vapour is required.

Do not be tempted to wear a powered woodworking respirator as this will draw



A suitably rated respirator will protect against both dust and fumes

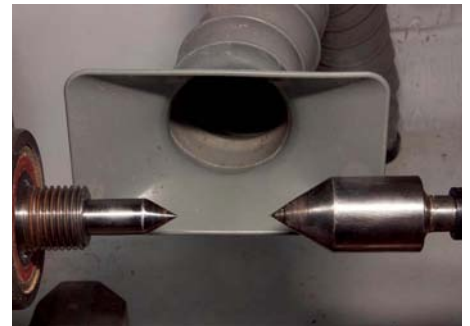
the fumes in towards your face rather than protecting you. Powered respirators for use with CA should be fitted with gas and vapour rated filters. A useful guide to respiratory protective equipment is available from the Health and Safety Executive.

You can protect your hands with polyethylene gloves which the CA will not stick to. Nitrile and latex gloves will also provide protection, but will stick to the CA. Avoid using cotton cloths with CA as the cellulose in the material can accelerate the polymerisation causing overheating and giving off unpleasant fumes.

Manufacturers of CA are obliged by law to make available Safety Data Sheets for their products. It is good practice to obtain a copy and ensure that the advice they contain is followed.

CA USES

- CA is mainly used as a finish for pens, although there is no reason why it may not be used for other small spindle turned items. Achieving an even coverage on larger turnings such as bowls and vases would be difficult and I cannot recommend it
- CA is an effective finish on wood and some other substrates, such as polymer clay. Acrylics and polyester resins do not require an applied finish, but CA can be useful to repair and hide chips, cracks or uneven surfaces in these materials
- CA can also be used to 'stabilise' difficult or spalted woods and to fill voids in burrs and other highly figured timbers



An extractor inlet placed near the work will draw fumes away from the user

Finishing methods

There are probably as many ways of applying and polishing CA as there are turners applying it, but in the following paragraphs I have set out the principal methods.

The first choice to make is between the different consistencies of adhesive. CA is generally available in thin, medium and thick formulations. Most turners prefer medium CA as a finish, although this is by no means universal and many swear by the thin formulation. I do not know of anyone who uses the thick CA for finishing, but I have no doubt it could be and has been used. Thin CA is more generally the consistency of choice for stabilising wooden blanks and filling voids.

A decision is also needed with regard to the use of an accelerator. I rarely use accelerator, but some turners do so for all their work. Excessive use of accelerator is one cause of unsightly blooming or whitening of the finish. It is definitely best avoided when filling cracks and voids as it can cause the adhesive to whiten as it polymerises leaving an unsightly blemish rather than a neat repair.

Some turners use boiled linseed oil – BLO – in conjunction with CA and while I do not see the need for this myself and find that it increases the emission of fumes, many people obtain excellent results with this combination of materials. BLO can also be used to enhance



Too much accelerator can cause the CA to go white

the appearance of the untreated wood surface before the application of CA.

One of the problems many turners experience when finishing with CA is that the CA will stick to the bushings. A thin coating will break away cleanly when the blanks are removed, but a thick layer can cause unsightly chipping at the ends of the blank. Numerous weird and wonderful methods have been devised to overcome this problem, ranging from smearing the bushings with wax to using the point of a skew chisel to cut the blank cleanly from the bushings. In my experience none of these methods are wholly effective and it is much better to remove the blank from the bushings and finish it between centres or between cone bushings, so that there is nothing in contact with the ends of the blank for the CA to adhere to.

My personal finishing method of choice



Paper towels or non-woven safety cloths are best for applying and polishing CA

is to apply a thin line of medium CA to a folded paper towel or safety cloth and wipe it quickly from side to side, while turning the blank slowly by hand or with the lathe set at its slowest speed. I then leave this to harden, sand away any ridges with fine abrasive – 1,500 to 2,000 grit Micromesh – and repeat.

I find three or four coats sufficient. Some turners purport to apply up to 20 coats, but as far as I can tell this is mostly being sanded off again between coats; however, the choice is yours, apply as many coats as you need to produce the result you want to achieve.

Once I have achieved an even coating of finish, I then turn up the lathe speed to about 3,000rpm and continue to work through the grades of Micromesh abrasive to 12,000 grit or use a suitable burnishing cream or paste abrasive to bring the surface to a high gloss.

Some turners follow a similar process to my own, but with the lathe running at high

speed, using the heat from the friction to assist the polymerisation process. When I have tried this I usually end up with the paper towel stuck to the blank and/or my fingers, but some people manage to produce a top quality finish with this method so don't let my lack of success with it put you off trying it.

A third method, usually done using thin CA, is to apply the adhesive directly to the blank from the tube or bottle, while simultaneously wiping the blank with a paper towel to spread it evenly over the surface. This method can be very effective, but is best

done with the lathe set at a low speed to avoid splashes of CA being distributed around the workshop by centrifugal force.

The CA/BLO method preferred by many pen makers uses a small quantity of boiled linseed oil applied to a paper towel or safety cloth onto which a few drops of CA are then placed and applied to the revolving blank, moving the cloth from side to side until the CA polymerises. This process is repeated as many times as necessary to achieve the desired finish. Removal of ridges and polishing is done in the same way as in my preferred method.



A line of CA applied to a paper towel is wiped quickly over the blank



A drop of BLO may be applied to the towel before a few drops of CA



Keep the applicator moving to avoid sticking

Other uses

Punky, dry or spalted blanks that may be difficult to turn cleanly may be made much more stable by applying thin CA so that it wicks in to the timber. Care is needed as the thin CA will flow everywhere if it is not carefully controlled. Once set, the stabilised blank can be turned and finished by any of the normal methods using CA or any other finish.

Voids in burrs or chips in acrylic can be filled with CA. Whether to use thin or medium CA depends on the size of the void, but whichever is used it must be built up in thin coats. Thick layers of CA will not polymerise properly, a thin layer or skin of polymerised adhesive will form on the surface preventing the liquid CA beneath from setting. This may not become obvious until the lathe is turned on when it will become only too apparent as a fine spray of glue engulfs the turner and his tools. The use of accelerator when filling voids is not recommended as it can result in the hardened CA turning white inside the voids from where it can be difficult to remove.



Thin CA can be used to repair voids in burrs or chips in acrylics



Micromesh abrasive is available in sheets, rolls or foam-backed pads



Fine paste abrasives provide a high gloss finish

Polishing

After application CA must be burnished or polished to achieve a high gloss, using fine abrasives. The choice is between Micromesh abrasives and burnishing or polishing creams. In practice these choices are equally effective so long as you always work from the coarser grades of abrasive to the finer, ending up with 12,000 grit Micromesh or a fine

burnishing cream.

My preferred method is to work through from 1,500-2,000 grit Micromesh and then polish with a burnishing cream or fine abrasive compound, such as the Farécla 500 compound. A moderately high lathe speed – 1,500-2,000rpm – is required to achieve a good gloss, but excessive speed or pressure can cause overheating. Foam-backed Micromesh will help to reduce the risk of overheating.

Problems and solutions

1. Blooming is a whitening of the surface during or after finishing, caused by using too much accelerator, applying the CA too thickly or by high humidity. The only solution is to sand away the defective finish and reapply.

2. Cracking or crazing can be caused by using old adhesive or by applying it too thickly. It may also be brought about by overheating during the polishing process. The cure is removal and reapplication, as above.

3. Paper towel glued to the blank. Caused by holding the paper towel for too long against the work. Pull away as much as you can and remove the rest with abrasive. If necessary, apply further coats of CA before polishing.

4. Fingers glued to the paper towel or the blank can be released by using proprietary debonder or acetone.

5. White spots in the wood grain, caused by applying a second coat of CA before the first has fully hardened, or by the pores of open grained timber not being properly filled with CA and filling up with polishing compound. Strip back to the bare wood, fill the pores with thin CA and refinish. ●

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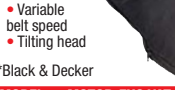
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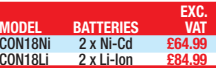
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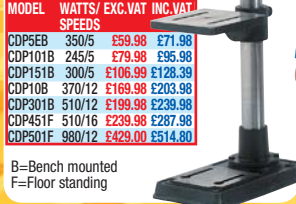
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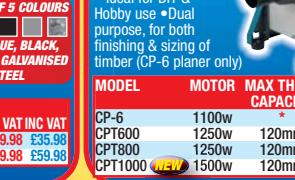
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Tiger 7/250	2 Hp	7	24ltr	£89.98	£107.98
Tiger 8/36	1.5 Hp	6.3	24ltr	£109.98	£131.98
Tiger 11/250	2.5Hp	9.5	24ltr	£119.98	£143.98
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Making textured rim bowls



PHOTOGRAPHS BY NEIL SCOBIE

Neil Scobie makes a textured rim bowl and decorates the rim using a variety of texturing techniques

When you have plain grain timber with little or no natural features, this is the time to think about adding some of your own flair to it. I use a simple rule, 'less is more', meaning that I do not want to have too much going on in a simple piece. If the timber has a prominent grain pattern, then I let the grain do the talking; if it is a plain boring pattern, then I add either texture, some carving or colour.

The design for this piece will have a simple form so the texture will be the focal point. I like the idea of having a round or rocking bottom so the piece will find its own level on a table. The piece will need to have a temporary chucking spigot so that the top can be shaped and textured; this will be removed at the end. Believe it or not, the textured surface shown can be produced in about 10 seconds, so it is so much faster

than many other texturing methods. I have chosen rose mahogany – rosewood (*Dysoxylum fraserianum*) – for this project as it is a dense timber that cuts nicely. You can use most timbers for this project, but I would

NEIL SCOBIE



Neil is a full-time woodworker who makes custom-made furniture and woodturned and carved art pieces for private clients and selected galleries. He also writes for a number of woodworking magazines. Neil lives in New

South Wales, Australia.

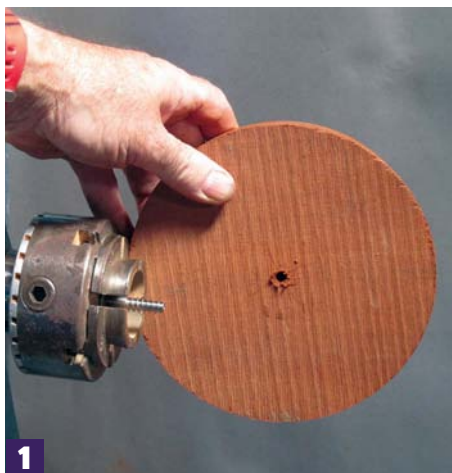
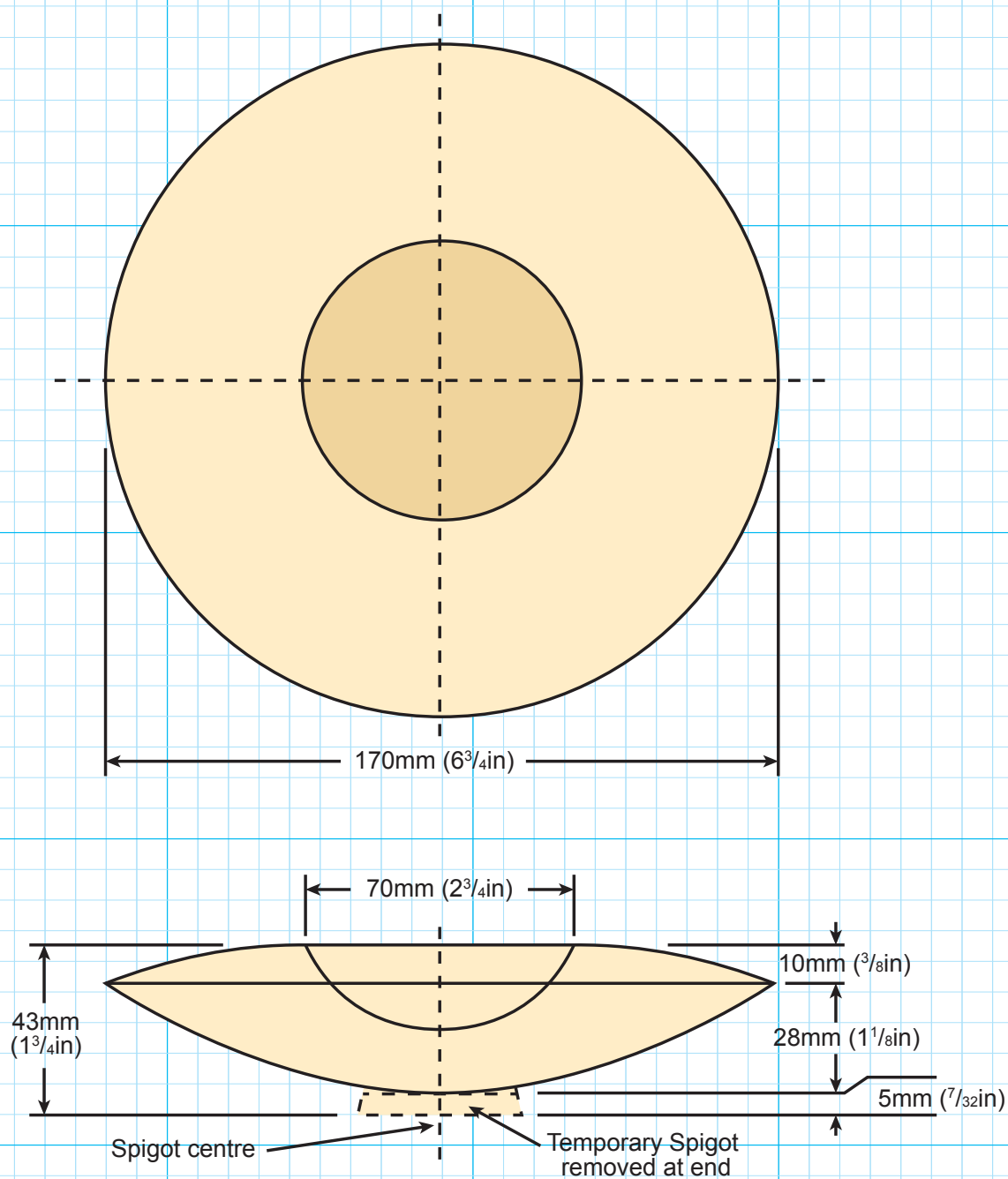
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recommend a close grain, harder timber for the best results.

EQUIPMENT USED

Small bowl gouge
Skew chisel
Angle grinder and Arbortech mini carver
No.5, 7mm carving gouge
Tormek sharpening system
Ebonising solution
Masking tape
Sandblasting setup
Shellac and Wax
Small V-tool or V-shaped carving tool
Cone-shaped burr
Rotary tool
Small diameter ball-shaped burr
Pyrography machine
PPE: latex gloves, facemask, respirator/dust mask and extraction

PLANS



1



2

Making a textured shallow bowl

1 The first step is to hold the top of the blank with a screw centre inserted into the top side. You can then drill the hole to the correct depth to suit your screw centre – I drilled a 6.3mm diameter hole, which was 19mm deep

2 Using a deep fluted bowl gouge, you can now begin to shape the outside of the bottom. Point the flute to 10 o'clock and use the bottom half of the gouge to do the cutting. By cutting from the middle towards the rim you will be cutting with the grain

3 Use a round skew chisel to cut a clean spigot with a sharp internal corner so that the chuck jaws will locate accurately. Shape a slight dovetail profile to suit the jaws

4 The next step, using the same skew chisel as before, is to turn a small hollow in the centre – this will be needed when you turn off the chucking spigot

5 Using a small deep fluted gouge with the leading vertical edge doing the cutting, make a trim cut to create a smooth surface finish. You will need to rub the bevel to help you achieve a smooth surface

6 You can then hand-sand the bottom surface of the bowl, but only to about 320 grit – the finer grits can be used when removing the chucking spigot

7 Turn the piece around in the chuck so you can hold the temporary spigot, which will allow you to work on the top surface of the bowl. To shape the top rim, use the same method as for turning the bottom side. Create a slight convex curve on the rim; this will work better when texturing

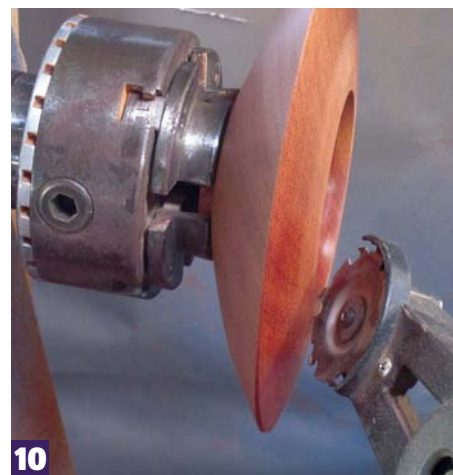
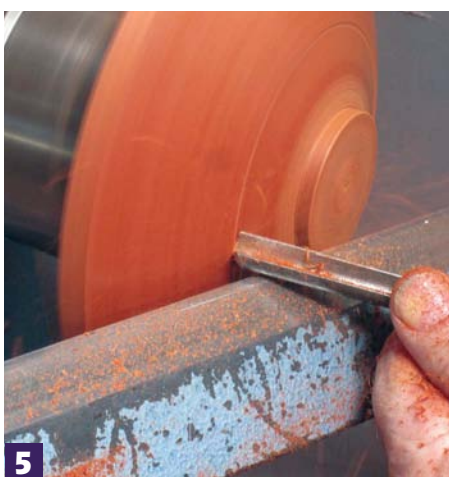
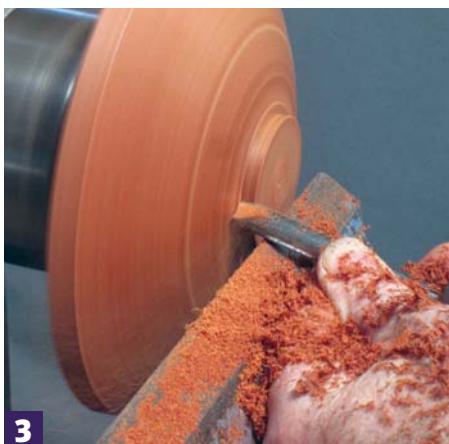
8 To hollow out the bowl centre, roll the bowl gouge over on its side so that the flute is pointing to 2 o'clock and you are using the bottom half of the gouge to cut with. The shape will be a semi-circle profile, which will match the simple design of the rim and bottom

9 To take a trim cut on the inside, use the small deep fluted gouge – which I call a trimmer – to take a fine cut with the leading vertical edge. This trimmer saves a lot of sanding as the gouge bevel rubbing should give you a smooth clean surface before sanding. At this stage, I do not sand as the ebonising solution may bleed into the inside bowl shape and will need to be sanded out

10 Creating the texture is achieved by using a mini Arbortech pressed metal cutter in a mini carver while both the disc and the bowl are spinning. This may seem a little drastic or some may think unsafe, but if you think about what is going to happen and which part of the disc you should use, it is an easy and very fast method of adding texture

SAFETY NOTES

- 1.** Keep both hands on the angle grinder or Proxxon carver while the disc is spinning
- 2.** Use the spinning disc on the bottom half of the rim of the platter while both disc and platter are spinning
- 3.** Use the bottom half of the Arbortech disc to cut on the rim of the bowl





11



12



13



14



15



16



17



18

11 Here you can see the surface produced with just one pass across the rim with both disc and platter spinning. Always turn off the lathe and check what you have created before making a second pass with the spinning disc. I suggest that you experiment on some scrap wood before you try the process on your best bowl. Try making some notes on what works and what doesn't

12 Make your ebonising solution by half filling a container with brown vinegar, then add either some uncoated steel nails or some steel wool and allow to sit for a few days. After a week, remove the nails or steel wool so that the solution does not keep rusting. Paint the solution on the surface and let it dry for a couple of hours. If it is not dark enough, re-coat and let it dry again. The more tannin in the wood, the darker the ebonisation will be

13 When dry, hand-sand the textured surface as much as you want to expose some of the parent timber underneath. Start with some 400 grit abrasive and keep checking on the surface. I like to see some of the red colour showing through the blackened surface. Fully power sand the inside of the bowl section up to 600 grit

14 Reverse chuck the piece over a mandrel with a soft rubber protective sheet between the bowl and the mandrel. Hold the piece against the mandrel with pressure from the tailstock centre with a short point on it. Use a spindle gouge to remove the waste, but keep an eye on the rounded bottom shape

15 Use a shallow hand carving gouge to carve away the small spigot where the tailstock centre was. Note the special padded protective holding jig, which pushes against and protects the top surface. Ensure to keep both hands behind the gouge

16 Now you are ready to add the surface finish to your bowl

Chip carving

17 The carving gouge I am using is a No.5, 7mm. You can use any size gouges, but I find this size to be about right for a bowl of this size. The gouge will need to be really sharp as some parts of the rim you will be cutting across the grain. I use a Tormek sharpening system to grind the bevel of the gouge when it is blunt, followed by the buffing system. Using the buffing side of a Tormek sharpening system, hone the bevel side of the gouge. Cutting compound is used to help with the honing

18 To remove the burr on the inside of the gouge, use the curved part of the Tormek buffing attachment. Swap backwards and forwards until you remove the wired edge

19 Supporting the gouge with both hands, push small hollows across the rim. Try not to have all the gouge cuts in line with each other. I like to start from the inside of the rim and make two cuts side by side, then the third cut will start between the first two cuts at the bottom end – a bit like a brick pattern

20 Once you have made all the cuts, the complete rim should look something like this

21 Ebonise the rim of the bowl and rub back on the surface so that some of the parent timber shows through, as with the first bowl

22 Here you can see a close-up view of the textured rim

HANDY HINTS

1. The ebonising solution does not penetrate too deep so if you have some bleeding, it will easily sand off
2. With the chip carving, experiment with using larger and smaller cuts with different size gouges. Cut the large ones first followed by the small ones
3. Keep the shape simple so the texture is the main feature



19



20



21



22

Other texturing techniques – sandblasting

1 Here is the sandblasting setup, ready to use. Note the masking tape to protect the non-blasted areas. This photo is taken with the sandblasting box door open. You need to protect yourself when sandblasting by having a concealed chamber and heavy gloves. The process will only take about 5-6 minutes once you are setup

2 Here you can see a close-up of the sandblasted rim. You will get the best results when you choose timber with a stronger growth ring pattern

“Note the masking tape to protect the non-blasted areas”

3 After the masking tape is removed, set the bowl back on the lathe and sand the inside and outside of the rim and the bowl hollow. This bowl was finished with a coat of shellac followed by a coat of wax

4 Here you can see a close-up view of the finished piece



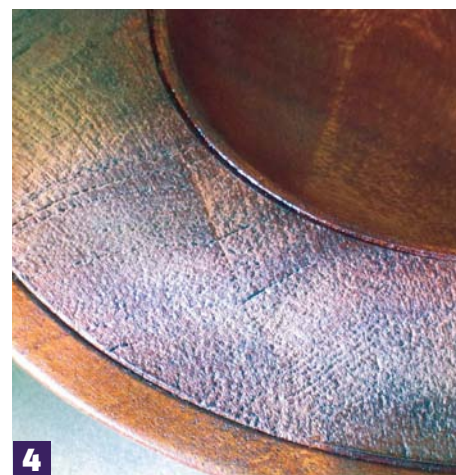
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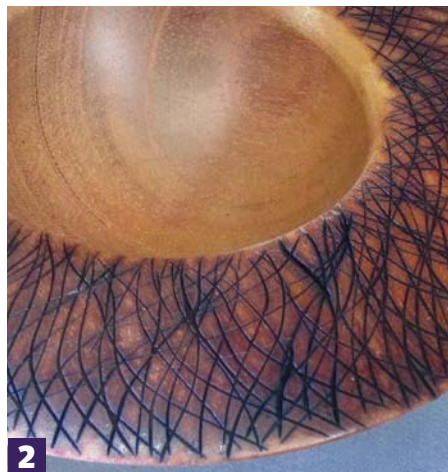
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4



Using a burner

Again, many different effects can be created by using a burner. You can buy or make all sorts of burning tips. The one I use for most of my burning is a tip shaped like a curved knife. I hammer out, file and hone the bottom edge so it actually cuts into the wood rather than slide across the surface. The narrow curved edge can still be used for stipple burning and the more gentle bottom curve for making the cuts

1 Here I am using the red hot knife-shaped tip to create a series of cuts

2 Here you can see the result of the random cuts that cross over each other. As in the

project, the surface can be sanded back to expose some of the natural timber or just left to look burnt. In either case, you will need to rub over the surface with some fine steel wool to remove the scale from the burning process

Conclusions

This article is meant to get you thinking about the different possibilities for adding texture. I always find it best to have a few practice goes before adding the texture to the finished piece; this will save you some disappointment if it does not work out. Remember the rule, less is more so you do not create pieces that have too much happening. One major focal point is all that is needed to set a piece off. ●

Stippling

Stippling is a good way of adding texture and can be used with many different shaped burrs, each giving a different effect. As mentioned earlier, do some experimenting on scrap timber until you know you can get the desired effect. As a general rule, I use a burr with cutting teeth for harder timbers and a diamond burr for softer timbers. Generally, I like to use borders when stippling and these can be created with a small V-tool while the bowl is spinning on the lathe. Alternatively, you can use a V-shaped carving tool to hand carve a border

1 Using a cone-shaped burr, produce different depths of cut by pressing harder or softer into the timber. The burr can be used in any type of rotary tool, such as a Dremel, Foredom or similar

2 Here you can see a close-up of the texture created with the cone-shaped burr

3 When carving borders with a V-shaped carving tool, you can create windows in which to stipple, separated by non-textured areas. The borders can be curved or straight – whatever you prefer

4 When using a small diameter ball-shaped burr, the amount of pressure you apply will give you different effects

5 On the left you can see the result the small ball burr made applying slight pressure. On the right is the effect when three different diameter ball-shaped burrs were used. Cut the largest holes first, then move onto a medium ball and finish with a small ball, which measures about 1.5mm in diameter

HANDY HINTS

4. Practice any texturing on scrap timber before committing to the finished piece
5. When making the ebonising solution, take out the steel after about three or four days so it will not go rusty
6. For stippling, use diamond burrs for soft timber and faster cutting burrs for harder timber
7. I keep telling myself that any time spent experimenting is not wasted time, as the results you get will help you work out the best method to use. Try making some notes on what works and what doesn't
8. A power sanding setup really speeds things along
9. Experiment with ebonising the rim first, then chip carve through to expose the parent timber underneath
10. When stippling, do not have all the different designs on the one bowl as it will look overdone

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What you need to know about threading in wood

Kurt Hertzog explains about threading in wood

KURT HERTZOG



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 currently president of the American Association of Woodturners (AAW).

kurt@kurthertzog.com www.kurthertzog.com

As you make your various creations in wood, you may run into situations where you wish to have the ability to assemble or disassemble multiple pieces, open and close things securely yet repeatedly, or fasten your turnings to something else in a removable manner. The natural solution to all of these is that threads be included in your turning in some manner. The needs for size, pitch and strength may vary, but the ability to use threaded fastening solves so many needs that it behooves us as woodturners to be able to add threading to our skill set. The three methods I know of are simply: thread the wood, embed or fasten pre-made threads to your turning, or add material to your turning that is more conducive to taking and holding threads than

the wood itself. Let's explore some options we can use to create the threaded function.

Inherent grain considerations

The simplest, yet sometimes the least desirable is to thread the wood itself. This is fraught with problems simply because of the material properties. If we think about the orientation of the wood fibres in either spindle or faceplate orientation, both present problems. Threads cut into a spindle-orientated piece of wood have the fibres of the wood cut into short little pieces bonded together only by their lignin bonds. The threads and especially the peaks of the threads are very fragile regardless of the pitch

because of the short fibre lengths and limited bonding strength. Threads made in wood in the faceplate orientation might have some additional strength in the face grain portions of the rotation, but the entire thread function is susceptible to changes in roundness, causing binding or sloppy fit. Even fine-grained woods that are well cured can have their shape changed with varying humidity conditions and stresses. When planning threads cut directly into wood, select the denser, fine-grained woods. I find that African blackwood (*Dalbergia melanoxylon*) or boxwood (*Cornus florida*) lend themselves to the best threading. Both are costly, but you can also insert a small quantity into the key locations as needed for economy. More on inserting materials for threading later on.



Even without sharp 'V's on the threads, wooden threads are very vulnerable to damage



Faceplate orientation cut threads also have challenges. The fragility based on grain orientation along with roundness changes

❑ Threading wood directly



Woodturning retailers usually have the headstock and tailstock taps, which allow for direct mounting of work or making fixtures



My tailcentres all have a 3/4-10 threading, allowing me to make many tailcones, mandrel savers, adaptors and hold 6mm shaft items



The penmakers among you know the many thread sizes that pens use. All difficult to find for purchase. Pen by Brian Gisi



The pen taps and dies are available but only by special order. Along with special order and low volume comes very high prices

Threading wood directly can be easily accomplished using the traditional taps and dies that are readily available in the machine tool suppliers' trade. There are some taps that woodturning retailers stock but they tend to be the thread combinations used for mounting work. You'll often find taps for M33, 1in-8, 3/4in-10, etc. These will allow you to easily mount items to the headstock threads or tailcentre threads directly. Not as

frequently found is the mating die for those threads. Since our focus is on 'assemble-able' and 'disassemble-able' threading points, we'll need both the tap and die function to match. I do have high-quality machine tool taps and dies but not nearly in the wide assortment of sizes you can get in large combination kits from the discount automotive suppliers or economy machine tool retailers. There are also 'non-standard,

standard' taps and dies. These non-standard, standard sizes are almost never found in the usual sales venues, but need to be specially ordered from select manufacturers. They are a little used standard for specific applications such as the barrel and cap on a fountain pen. An odd, little used thread size that is always used in this application. There are only a couple of these sizes to choose from.



The very inexpensive tap and die sets are available in metric and unified. They will be more than serviceable in wood



While the kit contents aren't Starrett quality, they will work well. You usually use the chuck in the lathe and hand turn

The large combination of tap and die assortments sold through the discount automotive shop or machine tool sales venues provide inexpensive taps and dies sets that are fully serviceable in wood. Perhaps their lesser quality would have limited life in metals, but they are certainly functional and economical in wood. I buy them when they are on sale or with a discount coupon and keep them in the wood shop for use there. Remember, regardless of the diameter and thread pitch, you are at the mercy of the density of the wood you are working with.



Learning to hand chase threads in wood is not difficult. The huge advantage of hand-chasing threads' diameter independence

Be certain to thoroughly degrease the taps and dies before using on wood. The preservative oils used prior to their overseas shipment can cause you finishing problems if it finds its way to your wood. I don't degrease the entire set, but rather use denatured alcohol to degrease the individual pieces prior to use. These taps and dies are used on wood exactly as you would on metal. A machinist's look-up chart will give you the correct diameters needed for either the tap or the die to work effectively. Turn or drill, as appropriate, to

the given dimension and use the tap or the die. Not as critical as with metal, but certainly good form is 'breaking the chip'. That is, advance the cutter a short way and back the tap or die off slightly. This will allow the curl(s) being cut to break and be shed rather than clogging things up. Don't be afraid to totally extract the tap or die and begin again after clearing the work and tap or die of debris. Just be cautious to start on exactly the same start point to continue the existing thread rather than create a new one and destroying the original.



One of the challenges of threaded tops and bottoms is making the grain match. There are some tricks for lidded boxes



One way to improve thread life in softer woods is to not cut the threads to a sharp peak. Leaving the thread flattened will help



You may have immediate need for tapered threads, but hand-chasing allows you the capability to cut any size and angle you wish

An alternative to taps and dies is hand-chasing threads. While a bit more challenging, it can easily be mastered with a bit of time and practice. The huge advantage that hand-chasing threads has is being diameter independent. Rather than selecting a threading based on diameter and pitch, you can select the pitch and make the diameter any size that suits your threading needs. This is quite convenient for larger diameters as taps and dies get enormously expensive once you get beyond fractions of an inch. Dies are far more costly than taps when the sizes get larger but both are expensive. Both Crown Hand Tools and Robert Sorby make thread chasing tools. Years ago they were available in pitches from 12-20 threads per inch. I've had mine for many years so the current range of thread pitches available might be more limited. It is beyond the scope of this article to teach you

how to hand-chase threads but there are many great tutorials on the method and ways to practise in order to develop proficiency. I remember a booklet on the subject by Allan Batty. It is an excellent resource that I used when learning. The beauty of hand-chasing threads is not only the freedom to choose your own diameter, but also the ability to easily cut tapered threads. Tapered threads are a bit more of a challenge but not too difficult once you've mastered the basics of hand-chasing.

There are also threading attachments that will cut threads using the lathe or a stand alone fixture in the indexing and workholding mode. Most use Foredom or Dremel-style rotary tools with a cutter installed to set the standard 'V' threads. The diameter is set by adjustment of the threading attachment mechanism. The pitch is indexed to provide the proper final thread. These threading

fixtures or attachments provide the advantage of adjustable diameter with a fixed pitch. Cost is their major downfall along with setup time.

KEY POINTS ON THREADING WOOD DIRECTLY

1. Dense, fine-grained woods lend themselves to threading directly
2. Both spindle and faceplate orientation present problems with threads
3. Larger sizes can be cost prohibitive with traditional taps and die pairs
4. Hand-chasing threads provides infinitely selectable diameters
5. Pitches from 12-20 threads per inch are most suitable for wood
6. Stabilised wood or addition of CA adhesive can strengthen threads

❑ Embedding pre-made threads



Fine pitched threads can be taken from old pens, scavenged kit parts, or other items and embedded as needed in your turnings



Using kit parts made the custom pens possible. The metal threaded sleeve was embedded allowing for thin walls with strength



Even if you don't make pens, grasp the concept. You'll find plenty of sources for inside and outside threads by just looking around



For larger and higher demand applications, I use steel or brass nuts and bolts. Wide array of sizes at a modest cost



Even if you are using higher strength materials, remember your wood, mounting depth and method may be much weaker

Skipping the threaded items that you simply use while completing any particular kit, let's focus on using some of those threaded components in one of your own applications. Because wood isn't particularly conducive to being threaded, especially finely pitched threads, I often use moulded or metal pieces with threads from kits to embed into my other turnings. These inserted threads might not have incredible strength, but they do have the ability to be fastened and unfastened many times without wear or damage. Being readily available, I often use them for my low strength needs. When there is need for higher strength from the threaded fastener portion of the turning, I resort to the standard steel nut and bolt. Lengths of threaded rod, called 'All-thread' in the US, are readily available in many different thread sizes from home improvement centres and hardware stores. Modestly priced and available in three or six foot lengths, it is ideal for use where the length from a bolt cut off isn't sufficient. My nearby full service hardware store can provide high strength nuts and bolts in

sizes ranging up to two inches in diameter, as well as the metric hardware in the same range. These sizes and strengths aren't often needed for turnings but they are very handy for home built faceplate mounting systems. When using the steel nuts and bolts for the threaded portion of the turning, be certain to consider the embedding methods, strengths of the adhesives and surrounding wood strength. There is no purpose in having a grade five or grade eight piece of hardware embedded only 12mm deep in a piece of poplar (*Liriodendron tulipifera*). Always remember that the maximum strength of any chain is the weakest link. I highly recommend that you avoid putting strenuous demands on any of your fasteners as used in your woodturnings. Those who are doing sculptures or high weight, high leverage applications are in a different class than what we are discussing here. They will need to focus far more on safety. For the hobbyist with the need to take their awkward yet reasonably weighted turning apart for shipping,

always be aware of the strength of the wood surrounding your fastener as well as the mechanics of insertion and methods of securing. Using metal fasteners is only for the purpose of size, convenience, and durability for repeated use.

KEY POINTS ON EMBEDDING PRE-MADE THREADS

1. Inexpensive fasteners are usually low quality and low strength
2. For better fits and longer durability, select the most appropriate hardware
3. The long-term needs of the application dictate the fastener materials
4. Method of embedding, depth, fastening method and wood itself all impact final strength
5. Kit components are often good sources of low strength threaded fasteners
6. Use fasteners in wood for cosmetic or convenience fastening, never in critical applications

Inserting better threading materials



A great spot for better threading materials or inseting already cut threads. This urn will look good with a tall slender finial

Because the wood itself is often the problem, let's explore how to put better threading woods or other materials into the needed location. It really is a continuation of embedding threads. Rather than embedding a fastener itself, let's embed something that will take and hold threads nicely. This will not only provide for a wood-to-wood thread that works smoothly, but is serviceable throughout the life of the product. Boxwood (*Buxus sempervirens*) threads marvellously, but it has many drawbacks in use. Availability, maximum size, cost and



You can embed better threading materials or thread them prior to embedding. Far easier to err with the matching thread sets beforehand

colour are the usual reasons for not making your entire project from boxwood. However, if you need to put a threaded function in your turning, embedding a small piece of boxwood in the area where threads are needed works well. Using only a small piece, size and cost become manageable and you can usually hide it from immediate sight.

You then thread the boxwood as needed to mate it to the other portion of your turning. You might have an embedded piece of boxwood there as well or it might be of a species more conducive to threading. I've often seen this on funeral urns where the hollow vessel is a beautiful piece of burl with a blackwood finial. The blackwood will thread well, but the burl may not. By embedding a small piece of boxwood in the throat of the urn, the threads needed can be created without any compromise of the beauty and colouration of the final product. This can be applied to lidded boxes as well. If you want a beautiful threaded top and bottom of the box, you can inset a small

piece of boxwood into the body for threading and address the threading capability of the top by material selection or insert.

Of course, if you are fortunate enough to make the entire lidded box from boxwood, you'll have no issues at all. We've focused on boxwood, but your use of hard, dense woods that will thread better than the parent material is always your choice. Plastic inserts to receive the threads work quite nicely. An inset piece of plastic is very easy to thread with a fine pitch if needed and has sufficient strength to be durable. Corian is a great choice. You certainly have the option of pre-threading your boxwood, Corian, or other material and embedding it as detailed above. A clever way that hasn't seen much traction over the years was a method I learned long ago from Petter Herrud. Petter used to cast epoxy into a pocket specifically cut to receive it. It was positioned exactly where he wanted the threads to be. By casting the material to be threaded into position, he had the best of both worlds. He had a material that would thread nicely, exactly where he wanted it but also had an easily repaired insert if the threading process goes awry. Because this process usually involves hand-chasing to have the variable diameter selection, there is always the opportunity to mess things up when cutting the threads. If you mess up your threading in an embedded block of boxwood, you need to cut the boxwood away and embed another piece or change the thread diameter. If you don't create an acceptable thread in your epoxy inlay, you simply cast over it and repeat the process. No need to cut it all away and start over although you certainly can if you wish.

Conclusions

Lidded boxes often have threaded tops. Funeral urns almost always have a threaded lid or finial to provide for access to the inside. Obviously, the walking cane kits have threads to allow for shorter turned sections and breakdown for storage and travel. Some of the more not-so-obvious threaded turnings are larger pieces that need to travel. Being able to disassemble things and pack into more convenient shipping containers is a very important advantage. Fastening woodturnings to other objects is easily accomplished via threaded fasteners. You can apply threading to an extensive and diverse array of turnings. Custom pens, lidded boxes, funeral urns, walking canes, awkward sculptural type turnings and more lend themselves. If you think about your own turnings, I'm certain there are things that lend themselves to threading. The many methods you can use to install threads should give you an option that will meet your needs. If you'd like to learn to hand-chase threads, go ahead.

It is a very satisfying event when you are successful. If you are more inclined to get to the end point without that particular challenge, you've seen several methods that allow you to create the threaded function quite simply. Once you've used it once with success, I'm certain you'll be incorporating threads into more of your turnings. ●



Once you start thinking of threads, you'll find applications. Of course, you can create hand-chased threads just for the fun of it



A collaborative piece with Anthony Harris, made many years ago, not much of which wasn't threaded



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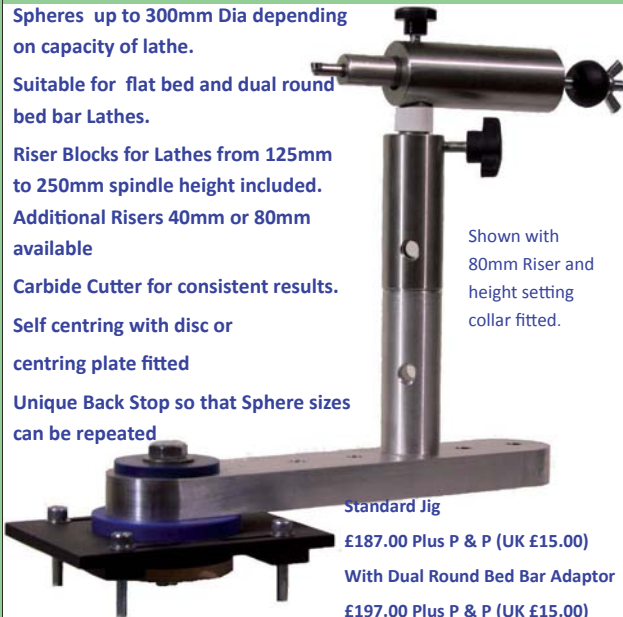
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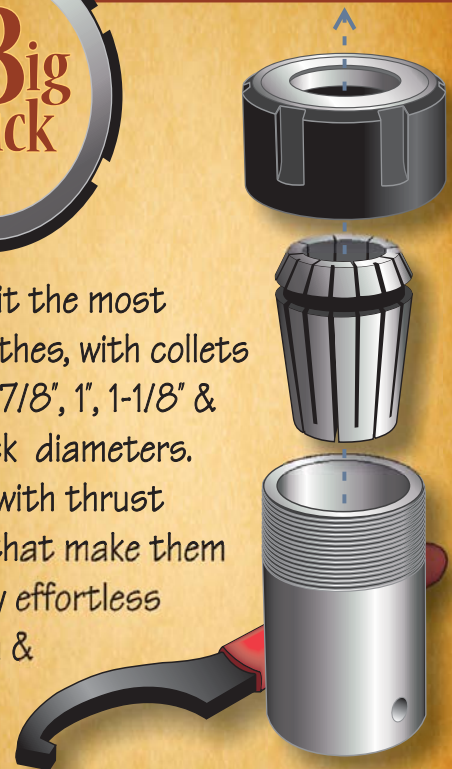
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The completed softwood leg, which was made using a small diameter corebox cutter

Fluting jig for spindle work

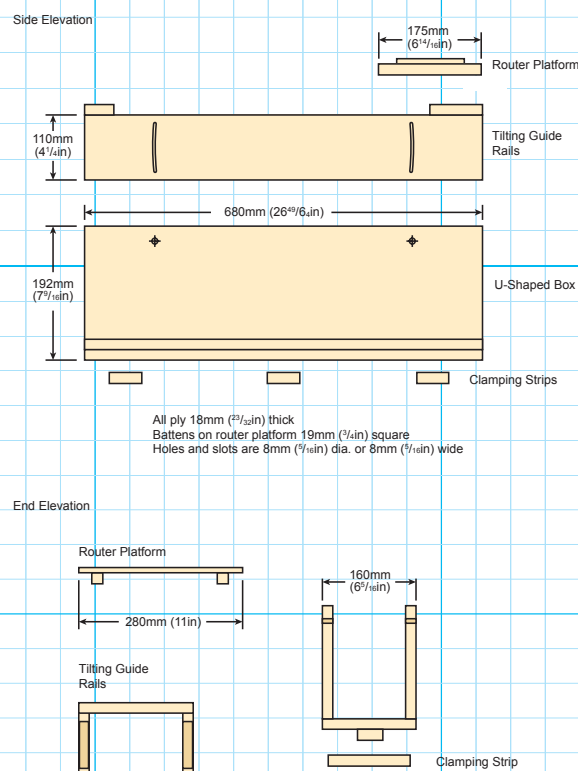
In the first of a new short series about routing on the lathe, **Anthony Bailey** shows us how to build a jig for successfully machining decoration on spindle work

While it can be easy enough to turn legs, columns and other spindle forms, applying decorative fluting lengthwise is another matter and this is where the router, which is typically more of a general woodworking tool, can play its part. To do this requires the making of a special jig and it needs to be versatile and adjustable enough to do more than one job. The version shown here fits a flat bed lathe with a slot in the middle, but it would be possible to create a version that will fit on a twin-rod model as well. The jig will also need to be sized to fit your capacity lathe and the length of work you intend to do.

INFORMATION & PLANS

EQUIPMENT USED

Piece of 18mm ply
Crosswise ply offcuts
Spiked T-nuts
G-cramp
Router trammel
Long, thin piece of MDF
6.4mm straight cutter
Large diameter Forstner bit
A piece of 19mm ply
Spirit level
A piece of 9mm birch ply
Portable saw
Guiderail





1 This is the bare turned spindle I will be experimenting on. Getting the router cutter to reach it may be limited by the square top section as it rotates to machine each flute. The jig needs to be able to tilt to match the slope of this and any subsequent legs and columns

2 The first job is to measure the gap in the bed so a piece of 18mm ply can be cut to be a good fit in the gap; this will locate the U-shaped box jig firmly in place

3 The next step is to check the width clearance needed for a typical piece that will need fluting. You must allow for the corners, as it will be rotated each time to create successive flutes

4 You are now able to work out the dimensions of the U-shaped box. Take the length between centres, the height which you feel should be slightly above the centreline and the clearance width. Carefully mark out each component on some 18mm birch ply and cut out with a portable saw and guide rail

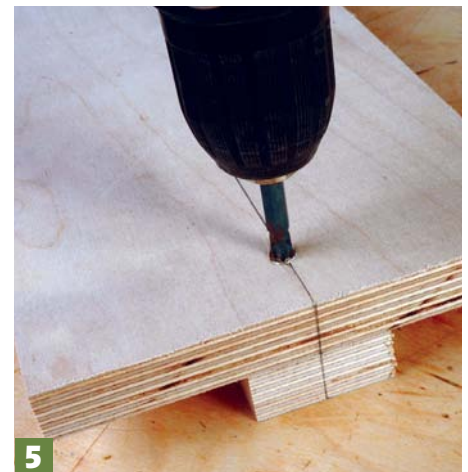
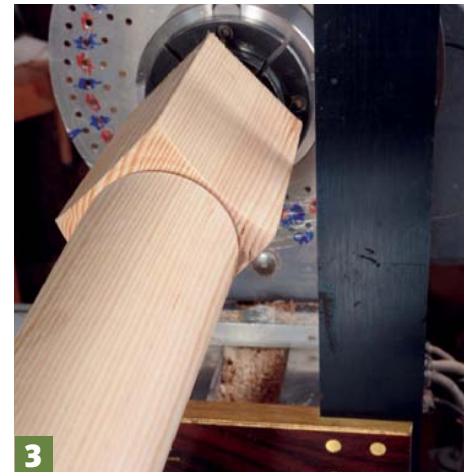
5 Drill the base of the U-shaped box and screw exactly to the middle of the strip, which will sit in the lathe bed gap. Mark both pieces to ensure they locate accurately

6 It is best to not take any chances, so fit the base in place and check the centreline at both the headstock and tailstock ends; this way you know that the flutes will be parallel to the turning

7 Now the sides can be screwed to the base. They must be perpendicular so the sides are accurately positioned. The width clearance in the box should match your earlier measurement

HANDY HINTS

1. Birch ply is the best jig-making material there is. It is clean looking, stable, reliable and available in a wide variety of thicknesses. Standard Far Eastern ply is often of variable quality, depending on which grade you buy and it doesn't look, well, 'jig like'. It is not nearly so pleasing on the eye or as solid and dependable in the core structure. 18mm ply is best for rigid structures like this jig but a selection of thinner boards is also useful – 9mm, for example, is rigid enough to carry the weight of a router without reducing cut depth unduly. One of the most useful thicknesses when you need it, such as creating the curved stands for turned items as previously seen in *Woodturning*, is 1.5mm birch ply. Very thin but tough and flexible, it is perfect for laying up in several curved layers glued together





8 Screw some crosswise ply offcuts into the box from underneath; these will hold the box firmly on the lathe bed



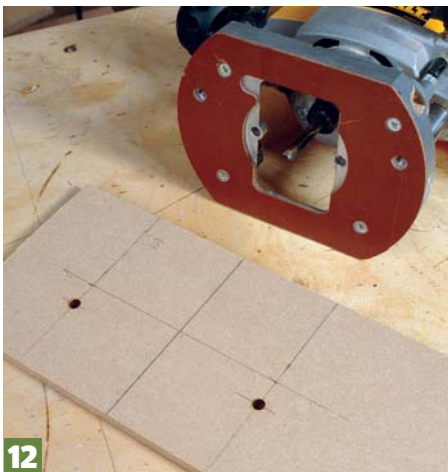
9 The basic box jig should look something like this. At the headstock end the index plate is located behind the chuck and will be essential for accurate positioning of the flutes



10 Drill four holes 25mm down from the top edge and 120mm in from the ends of the box on both sides – these should be the same 8mm diameter as some spiked T-nuts. Squeeze the T-nuts into the holes from the inside using a good old-fashioned G-cramp



11 The T-nuts have to sit completely flat on the ply surface so the bolts will be perpendicular when screwed into them



12 You need two identical movable pieces of 19mm ply to create the running surface for the router. In fact, they must raise and lower at both ends to take account of different size turnings. In order to do this, you need a router trammel. Mark the router's mounting hole positions on a thin, long piece of MDF



13 Once you have drilled the mounting holes, the router can then be fitted on with the correct diameter machine screws and a 6.4mm straight cutter plunged through it. Next, remove the router and using the cutter hole as a centre, guide a large diameter Forstner bit to drill a bigger hole; this will ensure you have good vision of the machining area



14 Use the router to drill a hole at the other end of the trammel, which corresponds to the distance between the T-nuts on the U-shaped box. Matching length marks make it possible to mark an arc limit at the end because the intention is to create short arc slots; this will allow each side piece to move up and down at both ends to match the slope of the turning. Here I am using the trammel to machine the first arc. At the other end, it is pivoting on a 6mm bolt in a hole drilled in the ply underneath

HANDY HINTS

2. In terms of hardware, most of us keep a collection of nuts and bolts and washers for repairs and jig making in the workshop. I have a case each of coarse metric nuts, bolts and washers and, in addition, our local independent DIY superstore has every variety of fixing I could wish for. If you need knobs, T-nuts and other specialised fittings, companies such as Trend – www.trend-uk.com – and Axminster – www.axminster.co.uk can supply them. It is always worth keeping a selection in stock – you never know when you might need them

15 Here you can see the arc as it is machined – the centre hole in the trammel makes it possible to start and stop at the pencil lines, which denote the limit of the arc

16 The bolt at the other is held in the ply using a nut just below the MDF trammel. This bows the trammel slightly at this end but is insignificant to the resulting cut

17 Creating the second arc by pivoting is a slight problem because there is no longer a single hole but a freshly machined slot. Carefully tighten the same bolt with a washer and nut in the middle of the arc, as denoted by the pencil centreline

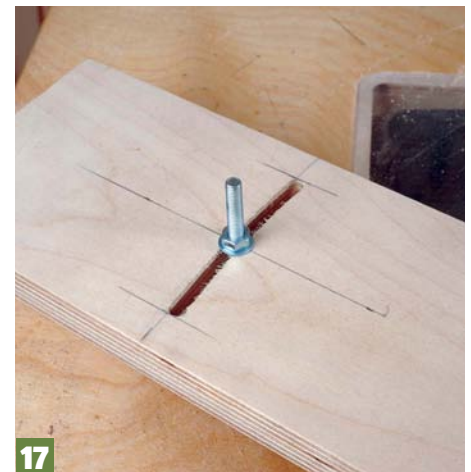
18 Bolt the two movable side pieces onto the outside faces of the U-shaped box. Next, screw a piece of 19mm ply across the top of both at each end. At the headstock end, fit a wider piece with a cutout in the middle so it will fit around the chuck. If the lathe is sitting level, use a spirit level to check the movable assembly is also sitting level at each end

19 Now cut a piece of 9mm birch ply and drill and fit to the router base, then glue a small fillet underneath on each side. This router carriage must slide smoothly along the top of the box from end to end. It is best to do this while the glue is still wet, which will ensure a good fit with no waggle

20 The final assembly should look like this. Note how it consists of three parts: the fixed U-shaped box, the movable guide assembly and on top of that, the sliding router carriage

HANDY HINTS

3. There are plenty of router cutter brands that have suitable cutters for router lathe work in their ranges. Wealden Tool Company – www.wealdentool.com – Trend, Titman – www.titman.co.uk – Axminster and CMT – www.cmt-tools.com – to name but a few. The trick is to find cutters that are the right diameter and the right profile. Whatever diameter of turning you intend creating, you need to work out in advance how many flutes you can machine successfully. To make the trial one in this article, I needed to have 20 equally spaced registration holes so the same number of flutes would be showing in-line with each flat face at the top of the leg. This narrowed down my cutter choice as did the diameter at each end as the cutter flutes would start to overlap at the bottom of the leg. The cutter manufacturer's website should show each profile with its dimensions from which you can work out which size and type to buy





21

21 Here you can see a close-up view of the carriage sitting on the guide assembly. If necessary, you can lightly wax the meeting surfaces; this will give a smooth sliding action, although I didn't find it necessary

22 Each fluting job will be different. In this case, the fluting needs to stop slightly short of the long flat section. Use screws in the end blocks, which will limit router travel. This one is at the headstock end

23 At the tailstock end the screw is hardly extended at all as the stop block will already be sitting over the leg end



22



23

24 There are a variety of possible cutters you can use, which are available from all good cutter brands. However, some will work better than others and you need to choose the right sizes. Too big a diameter and the cuts will overlap at the narrow end of a taper. I have started by using corebox and V-cutters as they are easy to work with but there are curved profiles too. I decided to reverse the index plate as it was unmarked and then used a felt-tip pen to mark 20 evenly spaced holes to register on

25 Rest the cutter on the job and set the depth stop to give a modest cut depth to start with. Once you have done a pass and checked the depth, you can set it deeper if necessary. To defurr the cut, you can run the cutter back in the other direction, which will clean up the cut, then move to the next registration position and repeat the process, etc.

26 Here you can see the first completed leg in softwood, which was made using a small diameter corebox cutter. Now it's time to experiment with some other cutter profiles and see what you can produce ●



24



25



26

HANDY HINTS

4. In terms of indexing, I have used a proprietary indexing jig, which is convenient and reliable especially if you already do indexing work on the lathe. However, it would be possible to make up your own plate if you have light engineering skills. It needs to be accurately bored and have a perfectly circular shape for balance when running, if you are doing turning. The advantage of making your own is that you can decide what index spacing you actually need. For router lathe work, you need less rather than more index positions, so you can create spacings that may not be available on a ready-made one. You will obviously need a rigid but adjustable indexing pin arm to lock into each hole; this could consist of a standard metric bolt, for example

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Hollow forms & shelves

After spending hours, days or even weeks creating works you're so proud of, it's often difficult to find a way of drawing attention to each form's individual integrity

ANDREW POTOCNIK



Andrew sees inspiration around him every day. He 'arrived' on the Australian woodworking scene in 1983, and since then, his work has developed into areas of sculpture, furniture making and the odd bit of cabinetwork.

andrewpotocnik@telstra.com



PHOTOGRAPHS BY ANDREW POTOCNIK

I'd made a series of small hollow forms from timber that had been felled by one of those 'once in a hundred year storms', which seem to happen all too regularly these days as our climate continues to change. Turning these forms was great fun, providing an opportunity to explore small-scale hollow turning of many shapes in a relatively short period of time. These forms looked great grouped together on a flat surface; however, with nearly a dozen of them, I wanted to create a display surface where each individual form could

be highlighted, so here's a solution to my particular display quandary.

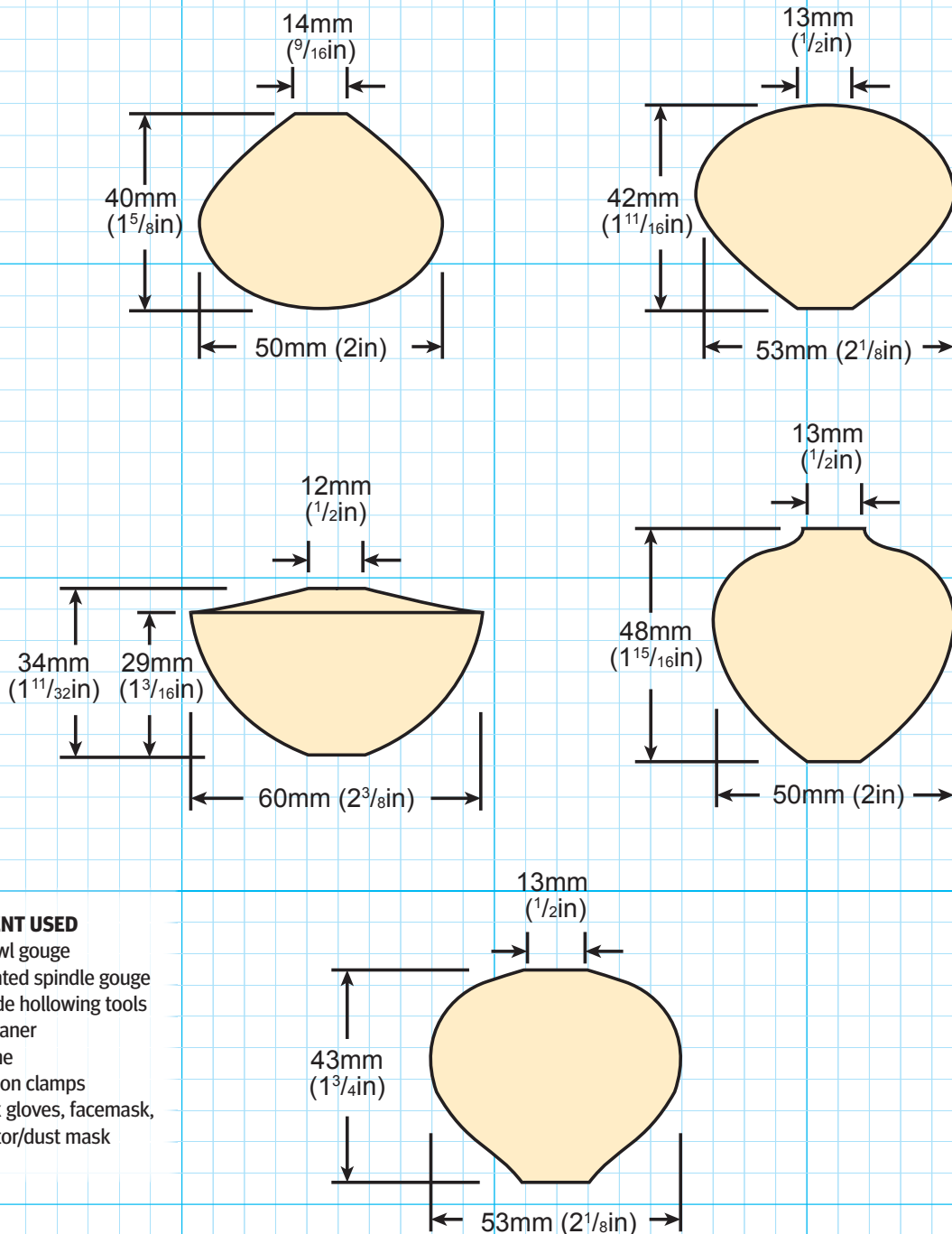
Initially, I needed to isolate which forms I really wanted to display. As you can imagine not every piece you create is worthy of display, so it's important to identify pieces that complement each other and blend without simply being repetitions of the same form.

Considering I planned to enter this combination of pieces in an exhibition based on timber salvaged from the initial storm, I felt obliged to make the display unit from the same wood, so here's how

I went about the non-turned stage of this project as well as how the hollow forms were turned. This article has been split into two sections, to avoid confusion!

In terms of tools used for the hollow forms, I used homemade tools formed from hardened concrete nails held in wooden handles, something I have adapted from techniques I learned from New Zealand turner, Athol Jones. Athol learned the technique from David Ellsworth. We are constantly building on techniques refined by those before us.

INFORMATION & HOLLOW FORM PLANS



EQUIPMENT USED

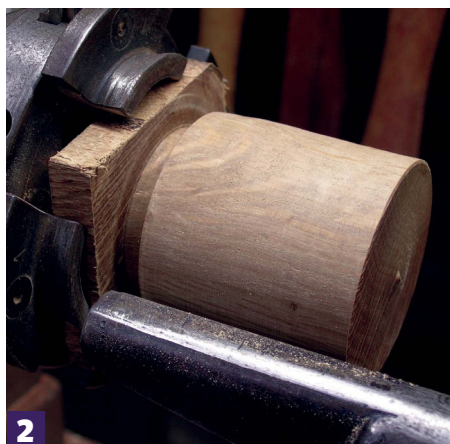
- 12mm bowl gouge
- Long-pointed spindle gouge
- Homemade hollowing tools
- Electric planer
- Hand plane
- Quick action clamps
- PPE: latex gloves, facemask, respirator/dust mask



HOLLOW FORMS



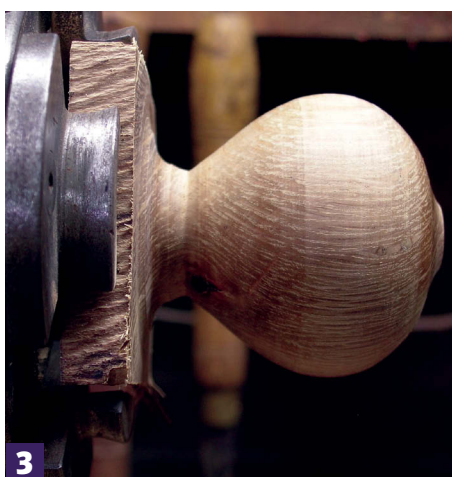
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1 Mount a blank of about 60 × 80mm long in the jaws of your scroll chuck, ensuring the flat surfaces of the blank are parallel to the jaws so the outer edges of each jaw can 'bite' into the blank and grip it firmly. Alternatively, you could mount timber between centres, trim it down to a cylinder and then turn a tapered step for the jaws to attach firmly into

2 Turn the blank down to a cylinder and establish the diameter you feel is appropriate to the form you wish to turn



3



4

3 Rough-turn the form keeping the base of the blank as large as possible for as long as possible. Keep in mind that hollowing the form will place lots of stress on a thin base and could lead to unwanted chatter and possible cracking

4 Once a pleasing form is established – keep in mind there should still be room for refinement later – rough sand the form



5



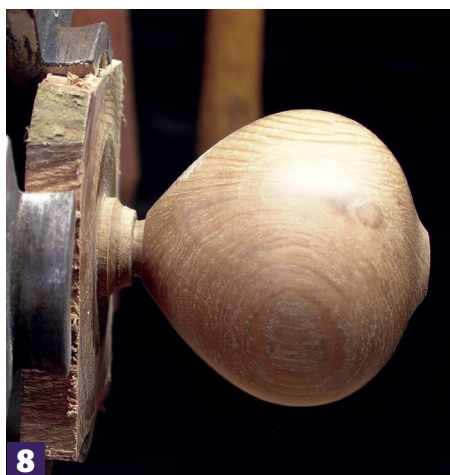
6

5 To hollow the form, I used several homemade tools consisting of hardened concrete nails bought from a hardware shop, bent to suitable angles and ground down to form scrapers, which were then fitted into 19mm dowels to act as handles. For hard to reach undercuts, Allen keys can also be ground down to work as scrapers; however, the further the cutting tip reaches away from the central shaft of the tool, the more danger there is of the tool catching and you losing control of the cut. To overcome this, drill a hole through the tool handle and insert a dowel that your hand can grip and override pressure exerted onto the cutting tip. Secure the tool into the handle with several drops of Cyanoacrylate glue

6 Two simple tools can be used to either empty waste from the hollow form, or determine wall thickness, which can be made of coat-hanger wire. For clearing residual shavings from the form, a simple hooked piece of wire will do the trick; however, for safety reasons, wait until the form stops spinning. This may enable you to see just how well you've hollowed, but a potential wrist injury won't do anything to help your turning! Alternatively, you may prefer to blow shavings out with compressed air; however, do some research before going down this path



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7 Once hollowed, refine sanding of the outer form, but don't forget to trim the base down to a pleasing taper and diameter before sanding everything down to 320 grit

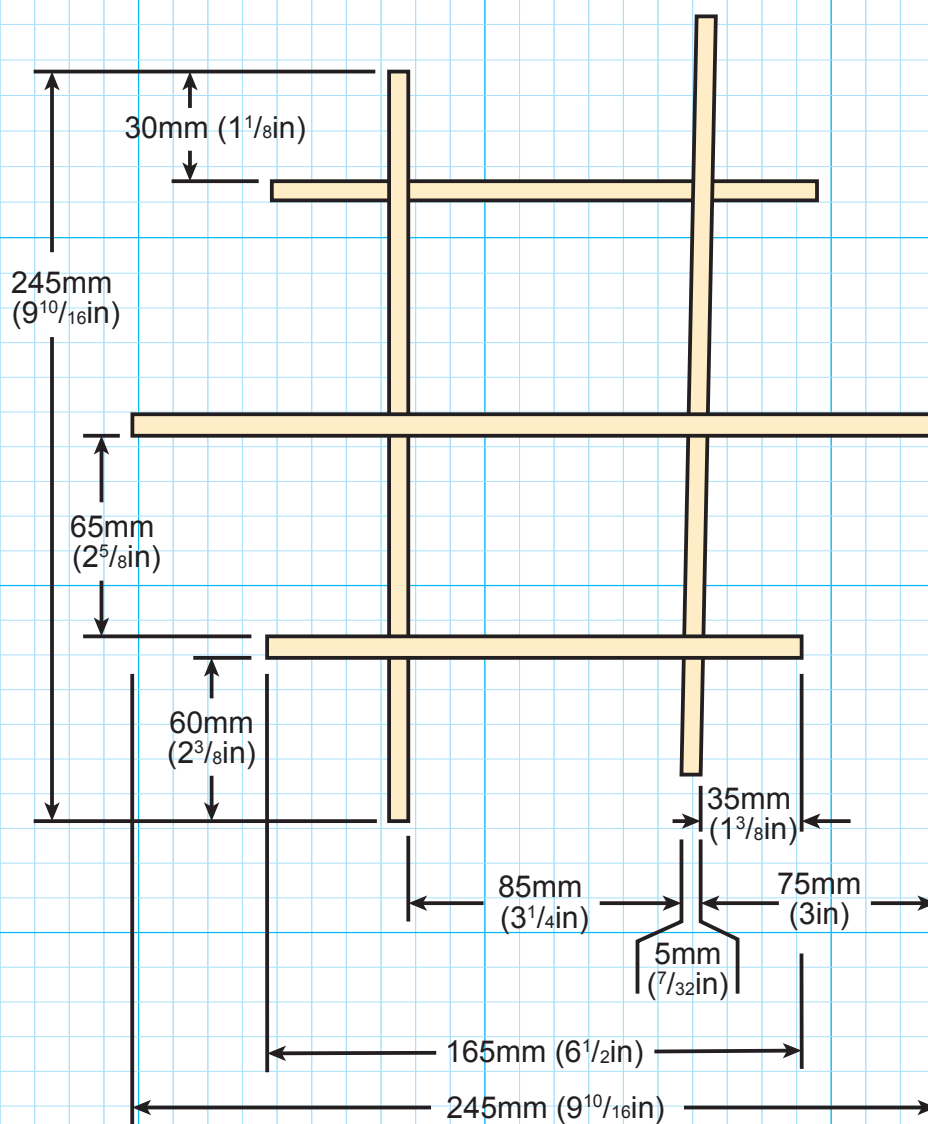
8 The final turning stage involves trimming the stem to a small enough stub, which can be removed from the carrier with a deft twist of the wrist, leaving little more than some final hand cleaning up

9 Final touches for your hollow form consist of a couple of important processes. The first step is to carve away the stub with a carving gouge, followed with hand sanding of the surface, before...

10 ...hand carving a 'hallmark' or personal identification to the base of the hollow form. You could just as easily add your 'hallmark' using a permanent marker, it's a matter of personal choice. Finally comes the application of a finish of your choice. I prefer a wipe on, wipe off polyurethane, but you may opt for wax or a myriad of other finishing techniques

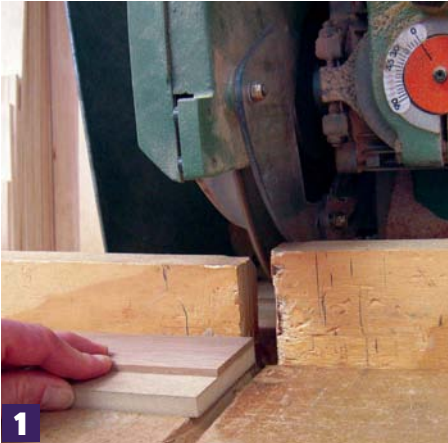


THE SHELVES PLANS



All timber is 5mm (7/32in) thick

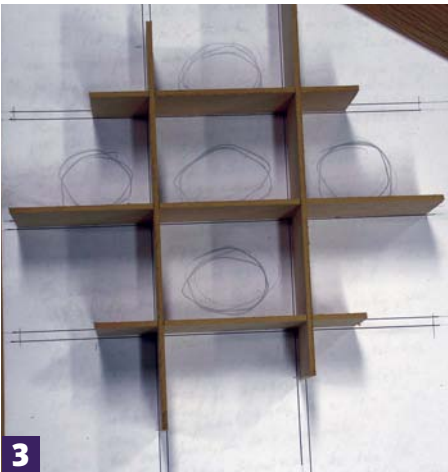
THE SHELVES



1



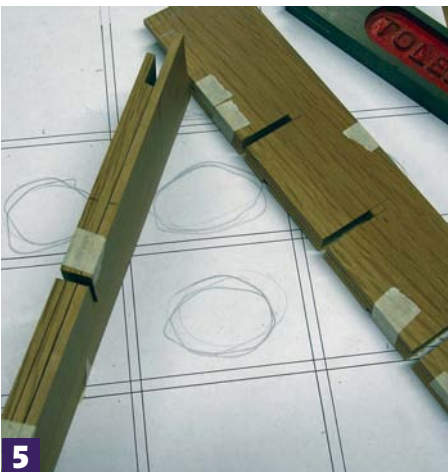
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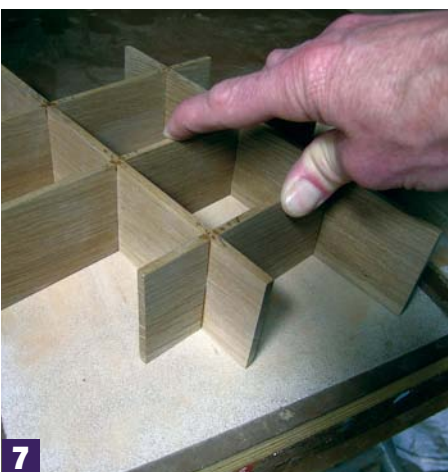
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1 Machine a number of slats down to about 5mm thickness and 60mm wide before cutting them down to the required lengths, using sacrificial backing material to reduce the possibility of tear-out caused by the radial arm saw. The timber I used had been air-dried for a couple of years, cut into smaller flitches, allowed to sit, cut into boards and allowed time to dry even further and settle before final machining. Hand-sand all material to 320 grit; however, you should leave all pieces at a longer length than needed so 'snipe' at the ends can be removed

2 Make a drawing of the proposed structure in full-size, with sketches of the forms included. This will show you how the size and spacing would look, followed by a mock of the shelves made of MDF

3 Place the mock over the drawing to see whether it looks OK in a 3D form. Things look different in real life compared to how they appear in 2D drawings

4 Then, set up the mock and forms to fit into the shelves to see how everything looks. One of the verticals is propped up so the shelves sit horizontally. Lengths of all vertical and horizontal components can now be finalised before cutting the final material

5 Tape the timber together, cut the joints on the bandsaw and file to a snug fit. To prevent tear-out place a sacrificial piece of MDF underneath the pieces while cutting

6 On my shelves the fit was so snug that I needed a clamp and extra blocks of wood to fit all the components together. Better a little tight than a little loose, I think! A single clamp provides localised pressure, ensuring every joint closes completely, as flush as possible, before running a small amount of cyanoacrylate into the back and front of each joint

7 Once the glue has dried, sand the front and back of the shelves on a sanding board. Sand the ends using a sanding block and finally 'ease' all of the edges with 320 grit abrasive. Apply a polyurethane finish to complete the shelves. An appropriate method of hanging them still needs to be resolved. There are many types of hooks and brackets available on the market and there is the option of making your own, but I wanted to retain the clean lines of this structure. You could place a small bracket in a spot where one of the hollow forms would hide it; however, you can simply drill a 2mm hole in the back of a shelf, which will slip onto a 2mm nail protruding from a display stand – which I needed to provide for the exhibition

8 The completed hollow forms on their purpose-made shelves ●

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INDULGE YOUR PASSION



Achieving a perfect finish

In the third part of his new series, **Richard Findley** turns his attention to the common problems experienced by turners in achieving a professional finish on their work

RICHARD FINDLEY



Richard 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 and a range of woodturning supplies.

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After the first two articles, which focused on the problems of poor shape and torn grain, the natural next step seemed to be to take a look at the problems associated with achieving a professional level of finish on your work. Because there are so many different types of finish out there, there is little point trying to look at each in turn, so this article, as with the others in this series, will focus on common problems that turners face and address ways to solve those issues. In this article I will look at:

- Sanding issues
- Application of finish
- Patchy finish
- Finishing options

The problem

No matter which finish you use, or how you apply it, you always find evidence of smears, swirls or rings and struggle to achieve an even sheen level throughout the piece of work, as you had hoped.

What causes poor finish?

There are a number of reasons you might struggle to achieve the perfect finish:

- Preparation

- Sanding technique
- Choice of finish
- Application of finish

Surface preparation

The place to start in finishing your work is with your preparation, rather than with your choice of finish. As I talked about last month, if you have a surface that is anything less than perfect, the application of finish will not improve it, in fact it will often highlight these issues for all to see.

Sharp tools and good cutting technique are the first step toward a perfect finish. With torn or crushed grain, the finish will suffer, no matter what you use. Torn grain will always be rough to the touch and will soak up more of the finish, causing the timber to appear darker and less glossy in those areas. If the grain is crushed or compressed, which is most commonly seen on end grain in projects such as boxes or in the tight curve of the inside of a bowl – this often shows as a pale ring on the work – then it needs to be lightly cut away before sanding and refinishing.

The message I am trying to convey is that good finish starts with good turning technique and is not solely about which product you choose.

❏ Poor sanding

Often, turners try to make up for poor turning technique by sanding. The problem is, as I talked about last month, oversanding to compensate for the poor turning will only misshape the surface and more often than not, will not remove the deepest of tear-out.

Poor sanding technique, even on a well turned surface, will cause issues in itself. Heavy handed power sanding can misshape even the best turned curve and rushed or haphazard sanding will only cause scratches or heat shakes – the latter will once again need to be turned away rather than removed with further sanding.

Choice of finish



A selection of abrasives and finishes available to the woodturner

The wrong choice of finish will often lead to disappointment. High gloss and natural sheen require different finishing products. Work with large flat areas often needs a different type of application to smaller or highly detailed work. Items that will be handled need a hard wearing finish, whereas those that will sit in a display cabinet can have a 'softer' finish.

As with most turners, I have experimented with finishes over the years and now tend to stick with two or three products that I know I can rely on, and will give consistent and predictable results. The worst outcome for me would be that a product is returned a few months after the sale, with a complaint that the finish has been damaged or looks dull.

Application of finish

How you apply the finish is important. Get it wrong and your work will suffer with brush marks, smears or streaks; get it right and you should have an even finish all over. The most common issue I see is the finish settles into rings or lines. There can be a number of reasons for this and thankfully, there are a number of solutions if you find it happening.

Solutions

Assuming the surface of the work is turned smoothly without torn grain, it is ready for sanding. The natural place to start then is with the sanding of the work, because this is the first step in achieving that perfect finish. As with all things, there is never just one thing that will make a finish perfect and

professional, it is a combination of factors that, when each is done properly, come together to produce that elusive perfect finish.

Always sand with patience and care



Sanding should be done using a good quality abrasive, with care and patience

The abrasive you choose is a vital consideration. Poor quality abrasive will often be stiff, produce uneven scratch patterns, overheat the work and not cut efficiently. The difference a good quality abrasive can make has to be seen to be believed. The problem is that most people assume they know how to sand and so mentally switch off when demonstrators start to talk about it. I bet you were tempted to skip this part of the article too, weren't you?

The most important thing to remember about sanding is that it can't be rushed. I know of no turner who enjoys the sanding process, but by being patient and following some simple guidelines it will not only reduce the amount of time you spend sanding, but also give an improved result.

- **Don't rush the first grit.** Whichever grit you choose to start with, whether it is 80 or 240, spend time on it. If there are any signs of tool marks or torn grain in the timber when you feel you should be done with that first grit, don't move on! If your first grit didn't get rid of those marks a finer grit certainly won't, so you either have to go to a coarser grit, or back to the tools to improve the surface.
- **Don't be too proud to use coarse abrasive.** I have heard people comment that they always start sanding at 240 grit because their tooling is so good. Sometimes I do too, but I'm certainly not shy to admit that I sometimes use 80 grit as a start point.
- **Be patient.** Once all you can see is the scratches from the first grit – no tool marks, no torn grain, just the wood and those scratches – then you can move on. This small amount of patience will pay dividends simply because the following grits will now be so much quicker and easier to use, because all they have to do is remove sanding scratches.
- **Wipe away the dust.** Between each grit,

give the work a wipe to remove the dust and debris from the surface. I guarantee this simple step will improve your finished surface, because that debris can cause scratches and marks that will spoil your final finish.

The level that you take your work to is up to you, but turners will always take the sanding further than other woodworkers simply because we are always working, at some point, across the grain. Flat woodworkers sand in line with the grain, which hides the sanding scratches. When we sand across the grain, those scratches are very visible, so to make them less visible to the naked eye, we have to go much further with our sanding. 400 grit and finer are commonplace in a turner's tool kit. Once the surface is properly prepared, you can choose your finish.

MYTH BUSTERS:

Myth – 'I keep my old abrasive because old 180 grit is the same as new 240 grit!'

I'm afraid not. Abrasive is something you can't really be frugal with, in my experience. Worn abrasive, is just that – worn. As abrasive is used it loses grit, the grits lose their 'edge', just as a turning tool does and it will also become clogged. The combination of this simply reduces efficiency and increases heat production, which means what you are experiencing is actually a burnishing effect rather than a sanding effect. So if you want an overheated and well burnished piece of work, carry on with your old abrasive; if you want a properly sanded piece of work, change that abrasive when it stops working as it should!

Which finish?

As with so many questions in turning, ask 10 turners and you will most likely get 10 different answers. There are all sorts of variables that can guide your choice of finish, but broadly speaking, you will have a choice of oil or lacquer. Oils will soak into the wood, protecting and nourishing it from within, whereas lacquers are surface finishes. Beneath those two headings there is a huge array of products to choose from. Here are a few things to bear in mind when choosing your finish:



A letter opener finished with hard wax oil and buffed with microcrystalline wax to give a little extra sparkle, made from HMS Victory oak and Royal yacht teak

• **Timber** – timbers such as oak (*Quercus robur*) and walnut (*Juglans nigra*) benefit from an oil. It seems to bring out a natural beauty in the wood, showing it at its best. Pale timbers, such as sycamore (*Acer pseudoplatanus*), maple (*Acer campestre*) and ash (*Fraxinus excelsior*) benefit from acrylic or waterborne lacquers, which are totally clear or even slightly milky in appearance, helping to maintain the natural pale look of the timber. Used on the wrong timber, though, they can leave it looking lifeless and dull.

• **Sheen level** – oil is a high build product, which means the more coats you apply, the glossier it will become. Once built up, oil tends to leave a glossy sheen, but not a high gloss ‘mirror finish’ that some people strive for. Lacquers on the other hand are available in a range of sheen levels, from full matte to high-gloss and so offer controllable, predictable and repeatable results.

• **Level of detail in the work** – depending on how you like to apply your finishes, the level of detail in your work may be a factor in your choice of finish. A platter, for example, with its large area will easily finish with oil or a spray lacquer, but a brush on or wipe on lacquer will be more difficult to apply. On highly detailed work it can be difficult to



Gloss lacquer finish sprayed onto a barrista's coffee tamper, made in oak

spray lacquer into the hard to reach details and oil can sometimes pool in crevices, so care needs to be taken.

• **End use of the product** – an item designed to be handled needs a finish that will stand up to this – a lacquer will probably be best here. A piece that will sit on a shelf or in a cabinet can be finished with a product that is purely for appearance. Friction polish, for example, is a surface treatment and so



A selection of oak walking sticks finished with hard wax oil



Group shot of oak walking stick finished in hard wax oil, oak barista's coffee tamper finished in gloss lacquer and an oak and teak letter opener with a hard wax oil finish, buffed with Microcrystalline wax

loosely falls into the lacquer category, but is only good for a visible shine, as it is not at all durable.

Other options

Buffing has become popular over recent years, as a way of bringing work up to a high shine with the minimum of effort. However, in itself buffing isn't a finish, it's a process. The compounds used in the process are actually forms of abrasive rather than polish, so to achieve best results you need to apply several coats of oil or lacquer first, allowing them to fully dry before beginning to buff. Many oils and most lacquers can be buffed, but beware that too much buffing will wear through a lacquer and spoil the work.

I don't buff often, but find it is useful for adding shine to oiled work and combined with a wax polish, it easily adds a bit of extra zing.

Wax is not really a finish in its own right, used alone the wood will absorb it and the work will, in time, become dull. Many paste waxes are based on beeswax and while this does impart a lovely glow to the work in the short term, it will not stand up to much handling as its melting point is below body temperature. Modern Microcrystalline waxes stand up much better to handling, having a higher melting point, but still need some sort of base coat first. They also work well with the buffing process.

Food safe/toy safe

If you ever make anything for sale, you need to make sure you cross your 'Ts' and dot



Buffing the oiled letter opener with the help of Microcrystalline wax

your 'Is', so if you make anything that will come in contact with food – such as a bread board – or is for a child – such as a rattle or toy – they need to be treated with a suitable finish, if they are finished at all. If in any doubt at all, then unfinished is the safest option, but in time they will become grubby with handling, so a finish will help to protect them. All finishes have a technical data sheet freely available for them; this will give details regarding the safety standards that the particular finish meets. Most manufacturers shout about this on the labelling.

MYTH BUSTERS:

Myth – 'Time is money! The best finish is the one that I can do fast and move on!'

As a production turner, I know all too well that time is money, but the thing that must always come first is quality. Just because a finish is quick, doesn't mean it's always the best option. Choose a finish that complements the timber and the turning, and is fit for purpose, rather than just the quickest, cheapest or easiest. When all the other rushed work is looking dull and sad, your work will stand the test of time. You can't rush quality



Labels on finish bottles will usually make it clear where they can be used

Methods of application

There are three main ways to apply finish: hand application, spray and on the lathe.

Hand application

Both oils and lacquers can be applied by hand. When using an oil I will usually apply with a paper towel or brush – depending on the level of detail – then simply wipe off the excess. This is the beauty of oils; they are simple to apply. The main thing to remember is that one coat is never enough. I like to use a minimum of four coats to give a depth of finish – more is usually better. The main thing to be wary of when applying by hand is finger marks. Wear gloves – vinyl works best with oil – and try to hold the work with a piece of cloth or paper towel in one hand, while wiping away the excess with another piece in the other hand.

Spray application

While lacquers can be applied in a similar fashion, I tend to spray them. I am fortunate to have a small industrial spray booth, making this a natural choice. Because not many readers will have a setup like mine, there is little point going in to too much technical detail about the process. That said, because many modern lacquers are now available in spray can form, spray finishing is a relevant option. The nice thing about spray cans is that the product is always the right consistency – there's no thinning or mixing needed and you don't need to know all about setting up a spray gun as the nozzle on the can always produces a consistent spray pattern.

Spray lacquer hits the work as a pattern of spots, which gradually merge together to form a smooth film over the work. If you don't apply enough lacquer, then there isn't enough for it to flow and merge into a smooth coat. If you apply too much, then it flows too freely, causing runs, so it is a fine balancing act. With a little practice, it is a pretty simple process and the finish can be superb.

On the lathe application

If you must finish on the lathe:

- Clean down the area first to remove as much dust as possible
- Have a break to allow the last bit to settle from the air
- Apply the finish with the lathe stationary
- Only use the lathe as a holding device and as a final burnishing process after the finish is applied

One of my pet hates is the infamous 'turner's wax stick', with which you are supposed to rub over the spinning work, burnish and 'hey presto,' you have a perfect finish. In reality, this product tends to scratch and mark your neatly sanded work and all it does is produce rings of scratches and thick wax across the



Applying oil with a brush



Spraying the coffee tamper with gloss lacquer in the spray booth

surface. If you want to use wax, apply a soft paste wax at the end of the process and buff with a soft cloth for best results.

Health and safety

Most finishes contain various chemicals and while modern finishes are considerably less hazardous to health than they used to be, care should still be taken. Use of gloves and a spray quality mask – known as PPE or Personal Protective Equipment – is vital. As with all products, it is strongly advisable to read and understand the manufacturer's instructions before use.



PPE should be used when applying finishes

Cutting back

An important part of applying any finish is to cut it back. This simply means that you smooth the surface before applying the next coat of finish. This is particularly important when using waterborne finishes as they can raise the grain of the timber. Some people will do this between each coat – often I will just do it before the final coat. Cutting back is done with a fine abrasive – I will often use a 600 grit pad where possible with the grain or back on the lathe if remounting can be easily achieved.

It is possible to apply oil and wax on an abrasive pad, which cuts back as it applies the finish, doing both jobs at the same time. This cutting back process helps to ensure a silky smooth finish. ●

“Sanding sealer is basically a thicker version of a lacquer...”

TROUBLESHOOTING GUIDE

Q: My finish appears patchy. Why?

A: Timber is a porous material – some more than others – so the first and sometimes the second coat of finish will often absorb unevenly. You need to apply more coats until an even finish is achieved. Be prepared to apply four, five, or even more coats for a perfect finish. When using a lacquer, you can use a sanding sealer first to minimise this effect.

Q: I have some sanding sealer, but I'm confused about when to use it.

A: Sanding sealer is basically a thicker version of a lacquer, the idea behind it being that it is a base coat for lacquer finishes. Being thicker it can't be absorbed by the timber so much and this means that the following coats of lacquer build to a finish more quickly. It should not be used as a base for oil, as it will stop the oil penetrating into the timber.

Q: I applied a lacquer to my work on the lathe and have thick streaks on the surface of the work. Why?

A: These have been caused by the lacquer gathering together unevenly as the lathe has spun and caused streaks. Thinning the lacquer can help, although this will affect how glossy it dries. Spread it over the work with the lathe stationary and allow it to settle before starting the lathe. Only apply very light pressure at the start, gradually increasing pressure until an even finish is achieved.

Q: The work looked perfect until I applied a gloss finish to it, now I can see scratches on the surface!

A: Unfortunately, a high gloss finish is the most unforgiving of them all and will only highlight any flaws. The only answer is to sand it back and refinish it. It will be worth the effort – honestly!

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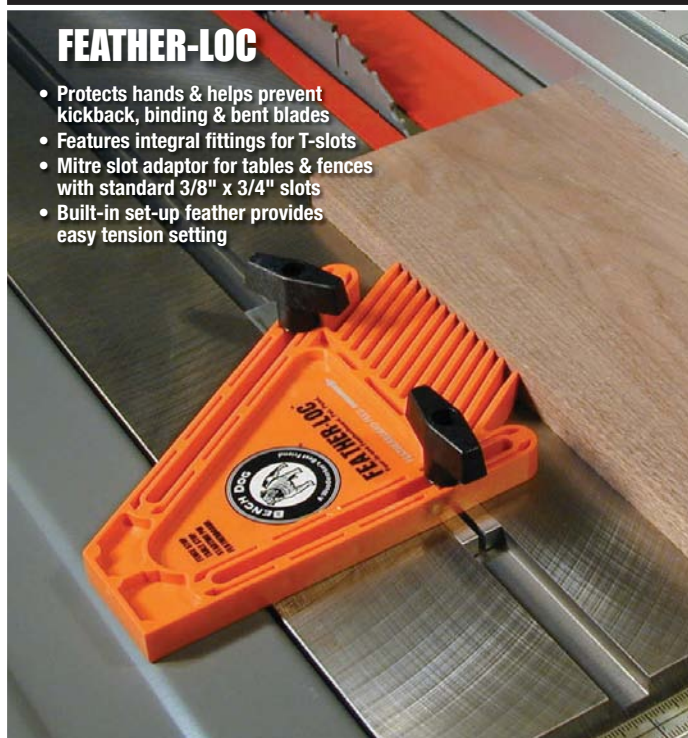
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Charlie Shrum in profile

We speak to Florida-based woodturner **Charlie Shrum**



'Eagle's Nest', Honduras mahogany (*Swietenia macrophylla*), 100 × 255 × 100mm

PHOTOGRAPHS BY CHARLIE SHRUM

Charlie Shrum was born in Miami, Florida in 1947 and lived there until 1987, when he moved to Titusville, Florida with his wife and two sons. Growing up in Miami, Charlie's father had a woodworking workshop in the back garden where he would build the boats the pair would use when they would go out fishing. In the workshop Charlie used to do little things to help his father and he was also permitted to use the scrollsaw and other tools that his father felt comfortable letting Charlie use.

Upon graduation from high school, he enrolled in college and received the degree of Bachelor of Science in Education from the University of Memphis in 1971. After college, Charlie started teaching, mostly social studies for his first nine years and in his 10th year, he got a chance to teach a woodworking programme. He tells us: "I realised this was a subject that I had a passion for and that the students looked forward to coming to class as well!"

He continued to teach woodworking for the next 26 years. Among all the other tools in the school workshop, there were also eight

wood lathes. As a result, Charlie, as well as many hundreds of students, developed a great love for turning over the years.

Encouragement

Meeting his wife – of 42 years, now – right out of college, they married in 1972. She could see his interest in woodworking and encouraged him to buy some woodworking tools, one of which was a wood lathe. Charlie was also encouraged by his mother, who bought him a set of carving chisels one year for Christmas, which set his love for turning and carving in motion.

During his 26-year period of teaching, Charlie would challenge his students to do some real fine woodworking and carving and doing so helped this turner to stay motivated, increasing and building on his skills as time went by. Upon retirement from teaching, he decided that he wanted to continue turning and once he felt his vessel forms and skills on the lathe were sufficient, then he moved into embellishing those pieces he had turned.

Inspiration

"I think of myself as somewhat of a realist. I am inspired by nature's fluid movements; I enjoy depicting the ascent of a bird, a fish in chase of its food or perhaps just the graceful movement of a tree branch in the wind," he tells us.

Charlie has been a fisherman all of his life, which has undoubtedly impacted upon his work, as he comments: "The fish that I catch and the wildlife I see while out inspire me with my subject matter." Charlie feels most inspired while fishing, skin diving, or "driving down an old rock road with old dead trees and the birdlife that accompanies the habitat." But, it's not only nature that inspires Charlie, telling us that his wife has certainly been the greatest inspiration in his quest to become better at all that he has attempted to accomplish, in any of his woodworking skills. He explains: "She has always encouraged me to purchase the finest of tools; she is at every art show that I do and many of the antiques I have restored through the years were side jobs I got because she has stopped at refinishing businesses and made them aware of my rebuilding skills." He has also found inspiration from outside influences.



When looking to the inspiration for the carvings on his vessels, he tells us that the work of Ron Fleming and Ron Layport played a massive part.

Workshop

Charlie and his wife live on an acre of land and his workshop sits about 45m behind the house. "Having a large piece of property is nice," he tells us. "This means there is lots of room to store logs and lumber." The structure is 80 square metres, so there is ample room for tools. Charlie lives in central Florida, which is hot and humid in the summer but there will be several very cold days in the winter, so he has put in central air and heat. The workshop has a 4.2 × 7.4m roofed platform attached and this is where Charlie does all of his finishing work.

Tools

"I have been able to purchase commercial grade tools and I have just about any woodworking tool that there is, because I like making furniture as well," he explains. His major lathe is a Powermatic 4224 with an outboard turning capacity of about 1,270mm.

'The River's Edge', ambrosia maple (*Acer saccharum*), 495 × 255mm

The carvings on his vessels are accomplished with various rotary tools from the tiniest dental bits to the ¼in shank carbide burrs.

We asked Charlie about his 'must-have tools' and the list was pretty long! It included a large boring bar system with a great hollowing bit; a 50mm Grex 105° pneumatic random orbit sander; a jigsaw; his assortment of rotary tools for carving; ½hp Wecheer; NSK pneumatic carver for dental bits; Mastercarver Micro Pro and a Phingst micro sander for tight spots used with a good cloth-backed paper. Charlie tells us that if he could only have one carving unit, then he would choose something like the Mastercarver Micro Pro.

Work ethos

First of all, Charlie believes one needs to be truly interested in what it is that they want to accomplish. Once an athlete – pole vaulting



in college – he also plays jazz piano and turning and carving are a part of his daily life now. "I obviously have enjoyed each of these, but I have also always been very competitive and I enjoy being in the forefront. If someone is better than me at something, I don't let it bother me, I just try harder to catch up." Woodturning has been a tough one for Charlie, as he explains: "We all know there are some truly amazing turners in this world who are making some amazing artistic statements with their turnings."

If Charlie turns a bowl with a single redfish carved into it, he will spend about six to seven hours on the piece. His research for these was done previously and he has templates to draw

the redfish on the bowl, having made many of them before. If he makes a one-of-a-kind piece, he will spend a day or two on research alone. Charlie may practise on a scrap piece to figure out how to carve an eye on a new subject, explaining: "If I carve on one side of a vessel I may spend a week on that piece alone." He has spent as much as 100 plus hours on a turning when he carves all the way around the piece, advising: "You have to slow down because they become fragile and there is a great deal of sanding involved."

Other interests

Charlie rides his bike several days a week, has recently started lifting weights to try to stay fit and has just bought new fishing kayaks that are pedalled along. On days Charlie fishes from the kayak he won't ride because he will get all the cardio he needs in the kayak. He tells us that he likes being outdoors and finds himself outdoors often: "As I am writing this, I have a night fishing trip planned today and we will be fishing off my 5.5m boat."

A day rarely goes by where he doesn't go to his workshop and work on his artwork or a side job for a client. Charlie tells us: "I will be carving acanthus leaves into four chair legs this week for someone. I eat well because my wife loves to cook and I built her new maple (*Acer saccharum*) kitchen cabinets this year. I usually have friends stop by several times a week to chat or to come



ABOVE: 'The Guiding Light', Norfolk island pine (*Araucaria cunninghamii*), 185 x 160mm



LEFT: 'A Fragile World', Norfolk island pine (*Araucaria cunninghamii*), 380 x 318mm

for some help in my workshop. Sharing friendship is very satisfying to me," he comments.

Selling his work

"My work is mostly sold in art shows and I, as well as others, have to pay for the cost of the show and hotel bills. Consequently, I have to do a lot of mass-production work," Charlie explains. "Turning mass-produced pieces is not the most satisfying thing to do, but it helps pay the bills and it also helps to increase skills." Although Charlie believes this, his true love in woodturning is mostly in the larger vessels that he turns and carves.

Promotion

To promote his work, Charlie has a website and takes part in various art shows. He also gives out his business cards when possible – "as they are a cheap form of advertisement." As well as this, Charlie does demonstrations using a Jet mini lathe, finding that people love to watch someone turn and he usually sells several pieces. "I have pieces on display



'The Hunt', Cuban mahogany (*Swietenia mahogani*), 413 × 318mm



Charlie working on a piece mounted on the lathe

TOP TECHNIQUES

1. My larger vessels are end grain turnings
2. You will lose a couple of inches but attach a faceplate directly into the end of your log. I use No.10 × 38mm Hex Washer SL sheet metal screws
3. Turn the outside of your vessel to shape and sand it. It is important to remember that my style of vessels must be left thick enough to carve in the round, such as my sailfish vessel, which can be viewed at www.charlieshrum.com. The sailfish vessel is about 19mm thick
4. Hollow the interior and sand it, keeping in mind that you must sand the interior very well now, as it will become the background of your artwork
5. Draw your scene onto the vessel. If you have trouble drawing, go to Google and click on images; type in what you want, such as sailfish and you will have hundreds of pictures of sailfish come up that you can use as guides for your drawing
6. I use a hand-held jigsaw to cut out the scenery. Cut from the top down; this will help to support the pieces as you go. Cutting from the bottom up will weaken what is on top and they will start breaking off
7. Carve your vessel using rotary tools and then sand your scenery; try to stay very aware of where you grab your piece so you do not break what you are carving
8. Use a parting tool to cut most of the way through the tenon. I use a fairly slow speed to do this to keep the vessel from breaking loose from the waste material. I stop cutting with the parting tool when I get down to a piece that is about 19mm-thick and cut through the remainder with a Japanese pull saw. Chisel the remainder off and sand the bottom.

I should add an addendum to my reason for leaving the tenon on until the very end. I have a Trent Bosch deluxe pneumatic carving stand; because of this stand I can move very rapidly from one area to another while I am carving. If you do not have a stand that your faceplate will fit on, you should at least try to cut the scenery out first with the jigsaw and then cut the tenon off. Make a square cloth bag and fill it with rice to lay your vessel on while you are carving

in shops and doctors' offices around town. I have top quality photos in a gallery on my phone; I show these to anyone I meet and this happens almost every day," he tells us.

Highs & lows

"I live in a town of approximately 60,000 people; it is rare for a week to go by that I don't meet one of my former high school students or one of their parents. I am reminded by them that they greatly enjoyed the class and many of them are applying the skills they learned from me in their jobs," he tells us. Charlie has had some photos of his work used on the covers of magazines and has won a 'best of show' in an art show in addition to several other awards.

In terms of the lows, after seeing Ron Layport and Ron Fleming's pieces, it took Charlie a great deal of time to come up with his own identity so as not to copy their subject matter. He explains: "I am not particularly good at marketing my own work; it took a long time to locate someone to do that for me and it finally happened this year. With all the fine turners today it has been hard trying to become a known artist but I seem to be breaking through this year."

The future

Initially, Charlie turned utilitarian pieces,

such as pens, finials or teardrops for the furniture he was building, but his true passion in turning now lies in turning large vessel forms and carving nature scenes in them. So we can certainly hope to see more of these from him.

He explains: "I will always love teaching. I enjoy going to other clubs and sharing what I have learned through my many years of woodworking and turning. I hope to be able to travel to clubs in other states or perhaps abroad to share my knowledge as well." Charlie and his wife like to travel to juried art shows and they recently purchased a wonderful display tent and panels and shelves to display their work. It is the couple's intention to go to shows in other states and pay for their travels from the money they make from the shows. One of Charlie's goals is to get a chance to teach in the national woodturning symposium.

Charlie's ultimate goal is to become a well-known artist, as he goes on to tell us: "I am going to rearrange my workshop so that I can turn and carve pretty much full-time. I want to get away from doing furniture and cabinets because I would like to do five or six fine art shows a year and some of my more detailed pieces take weeks to complete. Unfortunately, we can't photocopy our work like the painters can!" ●

LIKES

- Mass-production turning. It keeps your skills up and they sell well in art shows
- Using a skew chisel to shear a spindle so I don't have to sand much
- Turning a tall vase and finding some gorgeous wood under the bark that will enhance my carvings
- Turning is an incredible way to relax and have your problems disappear
- Helping someone in a private lesson and seeing them smile when their tools begin to shear the wood properly

DISLIKES

- Sanding, and in particular, something like the inside of a 460mm high vase that must be as smooth as the outside
- Setting up my boring bar system
- Having to have a faceplate screwed to a large tenon until I have completely carved and sanded vases. It is scary cutting that off after working on a piece for weeks
- Having trouble with every laser light that I have bought that is used on the boring bar system when hollowing a vessel
- The dust is getting to me more and keeps a film of dust on everything in the workshop



ABOVE: 'Redfish Bowl', rosewood (*Dalbergia latifolia*), 200 × 100mm

LEFT: 'Lidded Bowl with Tarpon Finial', rosewood (*Dalbergia latifolia*), 160 × 200mm

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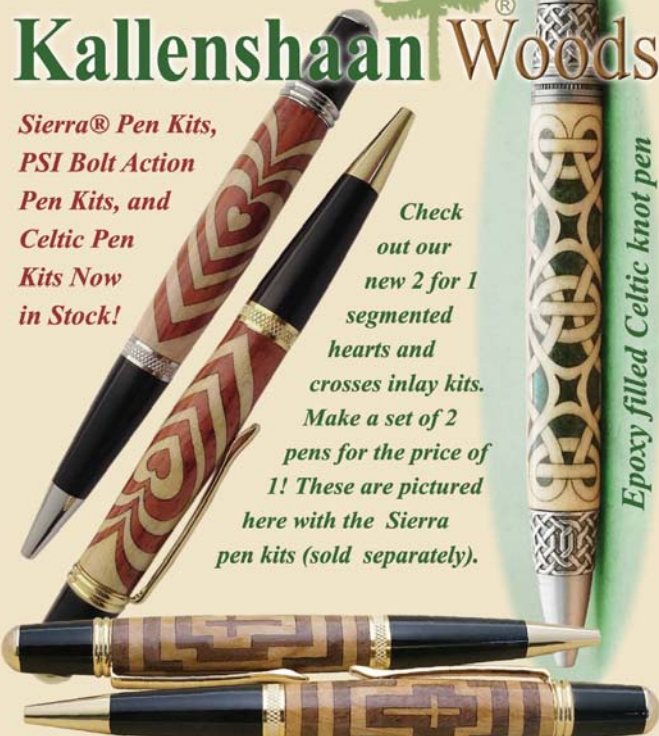
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Starting turning – part 13

In the final part of this series, **Mark Baker** deals with the fundamentals of using a bowl gouge and scrapers

Bowl gouges are the turner's primary shaping tool for faceplate work – but it is worthwhile knowing that they can also be used on spindle work for some operations. They are used initially to remove excess wood quickly, but can also be employed with great finesse to refine the work after initial shaping.

Scrapers are typically refining tools, used after the main shaping has been done. They are primarily used for faceplate/bowl work, but can also be useful for some spindle work – typically internal work, such as goblets, boxes and hollow forms. Scrapers are best used on close-grained hardwoods.

Many eschew their use claiming they damage the surface of work, but in truth they can be used to great effect to refine the shape and the surface. Much depends on the timber used and how they are used. With a little care and know-how, they can serve you well.



One swept-back and standard-grind bowl gouge



Three scrapers with different cutting-edge profiles

Two different types of spindle gouges

◀ USING BOWL GOUGES

As with all turning, before starting a cut, make sure your work is securely held and remember to use the tailstock for extra support where you can. Make sure the toolrest is in the right position, rotate the work so you know that the rest is clear of the wood before you switch on the lathe. The rest needs to be set so the gouge cuts on or just above centre.

Like the other bevel-rubbing tools, the bowl gouge enters the wood in line with the bevel. The rest is below centre and you can manoeuvre the tool across the work to shape it as required.

As with a spindle gouge, point the flute in the direction of the cut at approximately the 10 o'clock position, so the cut is made on the lower wing of the cutting edge. For the

smoothest results, cut with the grain from the smallest to the largest section, which is downhill. Keep the handle low and inclined at an angle of about 45°.

Start by nibbling off the corners with what are effectively chamfer cuts. Make straight cuts across the wood, removing waste material quickly as you make multiple passes. Altering the flute to nearer the 11 o'clock position will give you a more aggressive cut, but you run the risk of making the cut on the uppermost wing of the cutting edge; this will alter the cutting forces and may twist the blade into the cut, which will result in a catch. Pointing the flute closer towards the horizontal 9 o'clock

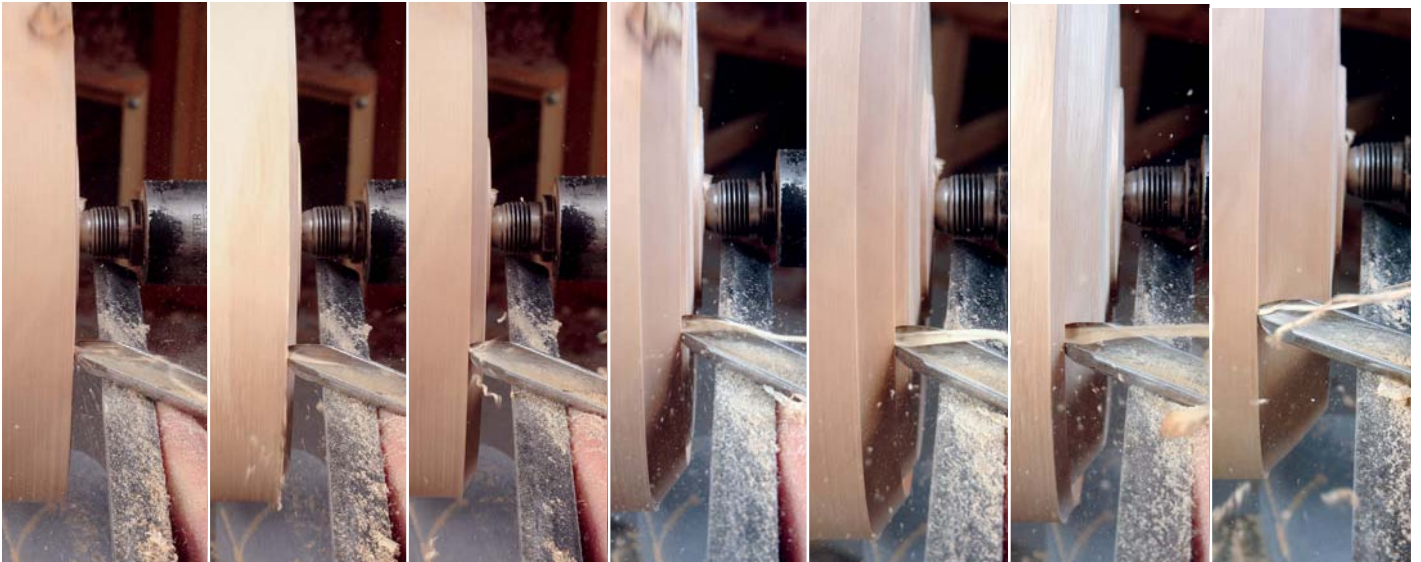
position will give you more of a scraping cut.

When you're ready to make a curved cut, enter the wood as before, but instead of pushing the blade in a straight line, swing the handle towards your body to create the curve radius you require. This may take a little practice, but just make sure you maintain the bevel rub; this enables you to control the tool by rotating the blade, raising or lowering the handle and pushing the blade in the correct direction, depending on the shape being cut.

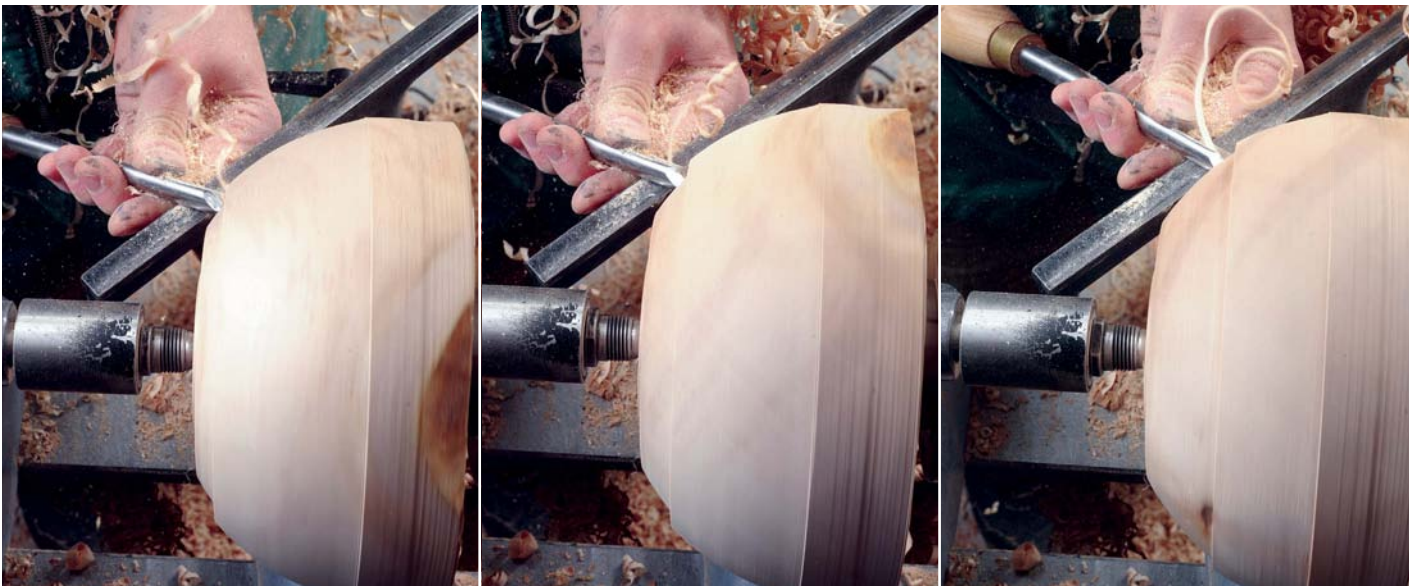
You can create deeper, quicker shaping cuts by going further into the wood with the cutting edge. This is great for shaping, but for a more refined result, cuts of about 3mm deep will clean up the surface more effectively.

External shaping using a push cut

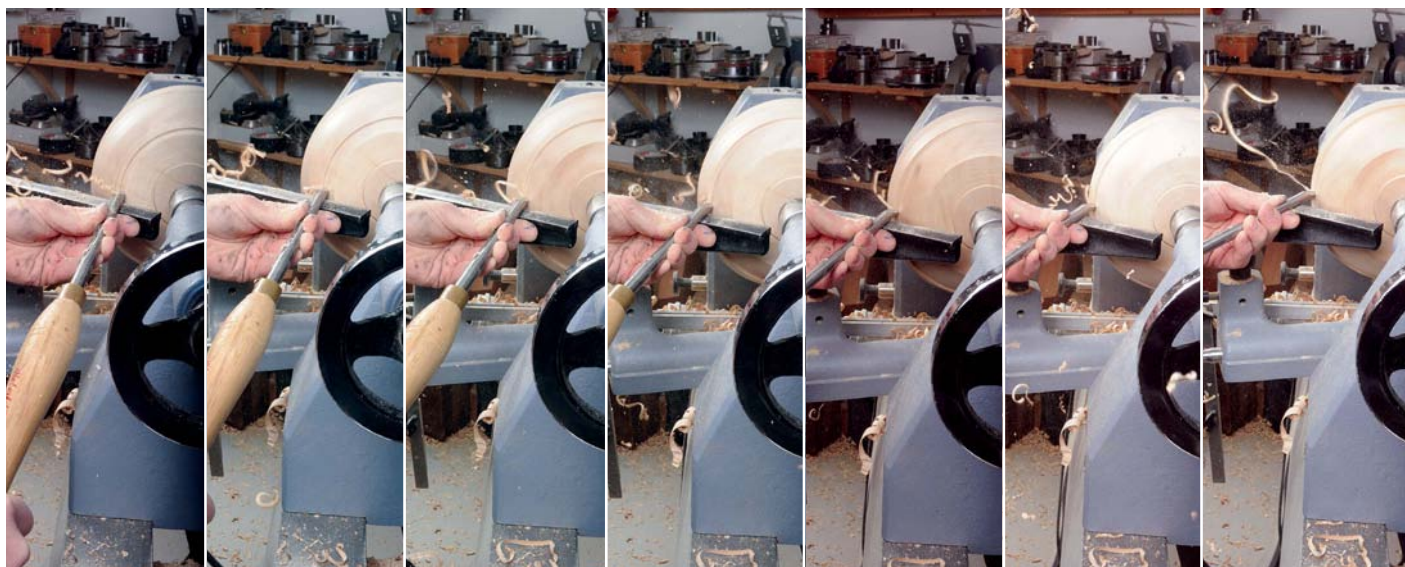
PUSH CUT SEEN FROM THE TURNER'S SIDE OF THE LATHE



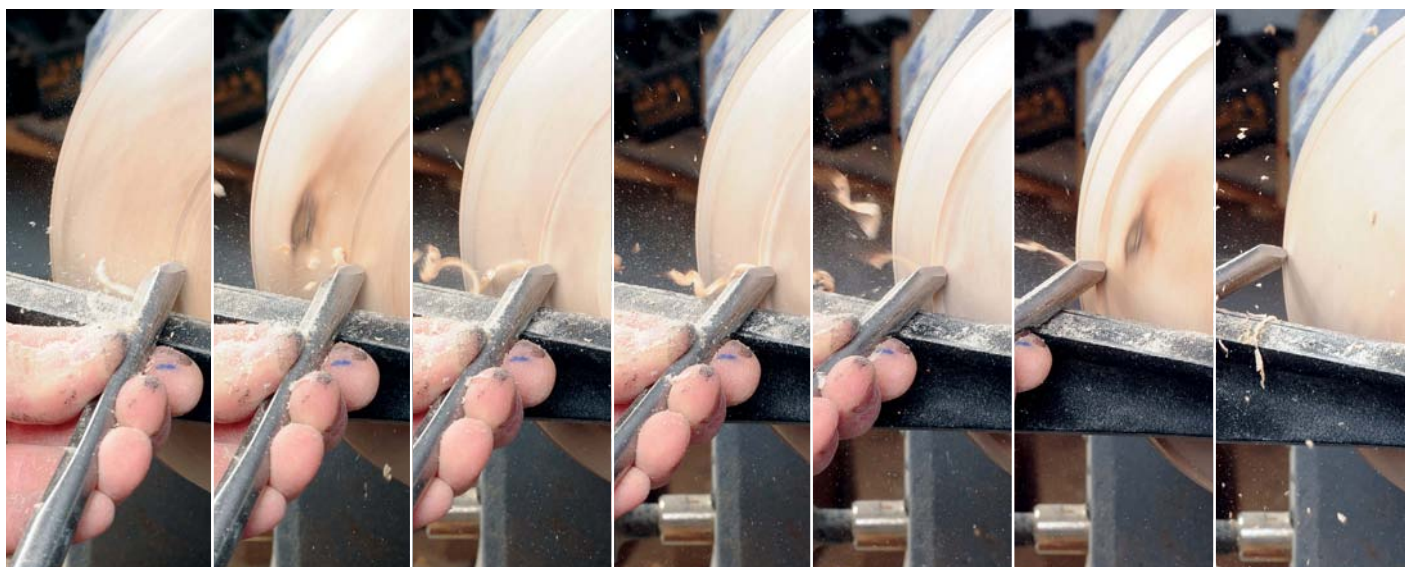
SHAPING THE OUTSIDE WITH A PUSH CUT – AS SEEN FROM ABOVE



SHAPING THE OUTSIDE WITH A PUSH CUT – SEEN FROM THE TAILSTOCK END



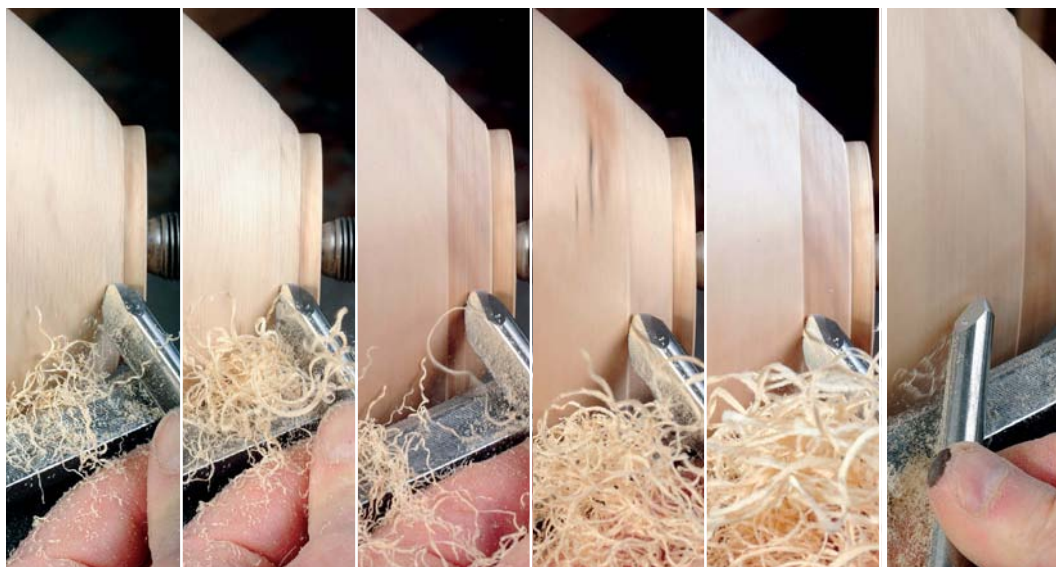
SHAPING THE OUTSIDE WITH A PUSH CUT AS SEEN FROM THE TAILSTOCK END – CLOSE UP



Refining the surface with a shearing cut

There is a cut which can be used to create a very fine surface. It is one that is handy to know when you have tricky interlocking grain found on highly figured wood and burrs, but it is also useful to know about when using softer timbers too.

Quite simply, it is a bevel rubbing push cut, but it is one where the handle is dropped quite low so as to present the cutting edge of the work at a steep skewed angle – yes, like the presentation angle of a skew chisel – to the work so you can peel off the wood more easily. By altering this angle, you can create a very refined cut or more aggressive ones.



◀ Internal shaping using a push cut

For internal bowl work, set the rest just below centre. It is worth making a clean up cut along the face of the bowl blank before starting to refine the internal shape. Once clean, you can now make the cut used to refine the internal shape of the work – effectively you will be cutting from the surface down into the centre section of the work.

Keep the gouge stable on the rest. Point the flute in the direction of the cut, somewhere near the 2 o'clock position and enter in line with the bevel. When the cut has started, the bevel rub will allow you to pull the handle

towards you as you cut to create the required curve. Work on the centre area first and when this cut is complete, make successive cuts back towards the outer rim. Always work from the top face down towards the centre section. You can alter the flute position to create a heavier or lighter cut, but always have the flute pointing in the direction of the cut and make the cut on the lower wing of the cutting edge. These rules should be followed whether you're cutting across the work in a flat plane, creating curved cuts or cutting S-shaped curves.

USING A PUSH CUT TO CLEAN UP THE FACE OF A BOWL



USING A PUSH CUT TO TURN THE INSIDE OF A BOWL



“It is worth making a clean up cut along the face of the bowl blank before starting to refine the internal shape”



The pull cut

A pull cut can be used to quickly shape or subtly refine the work. It can be made with or without the bevel rubbing, although it is more often used without the bevel rubbing. This cut is useful to know when the tailstock is in position to provide support, or when cutting up against a spigot, when it is difficult to get the handle position in the correct place for a bevel-rubbing cut. It can also be used without the tailstock in place, but if the cut is used without the bevel rubbing, the resulting surface will not be as clean as with a bevel-rubbing cut. The pull cut is a cut that can be used to rapidly remove timber – usually without the bevel rubbing so the surface of the work may not be good – prior to refining the surface with a drop shear pull or push cut or a standard push cut.

To make a pull cut, hold the tool handle close to the hip and position it at

approximately 45° so the tool is somewhere close to this angle to the work. Present the gouge to the work so that the flute is pointing at approximately the 10.30-11 o'clock position. Gently present the blade to the work and touch the heel of the bevel to the work rolling the blade until it begins to cut along the part of the bevel you need to cut with, then pull it along the work.

Due to the angle of approach, the flute is still pointing in the direction of the cut and the cut occurs on the lower wing of the blade. The near 45° approach angle creates a nice shearing cut.

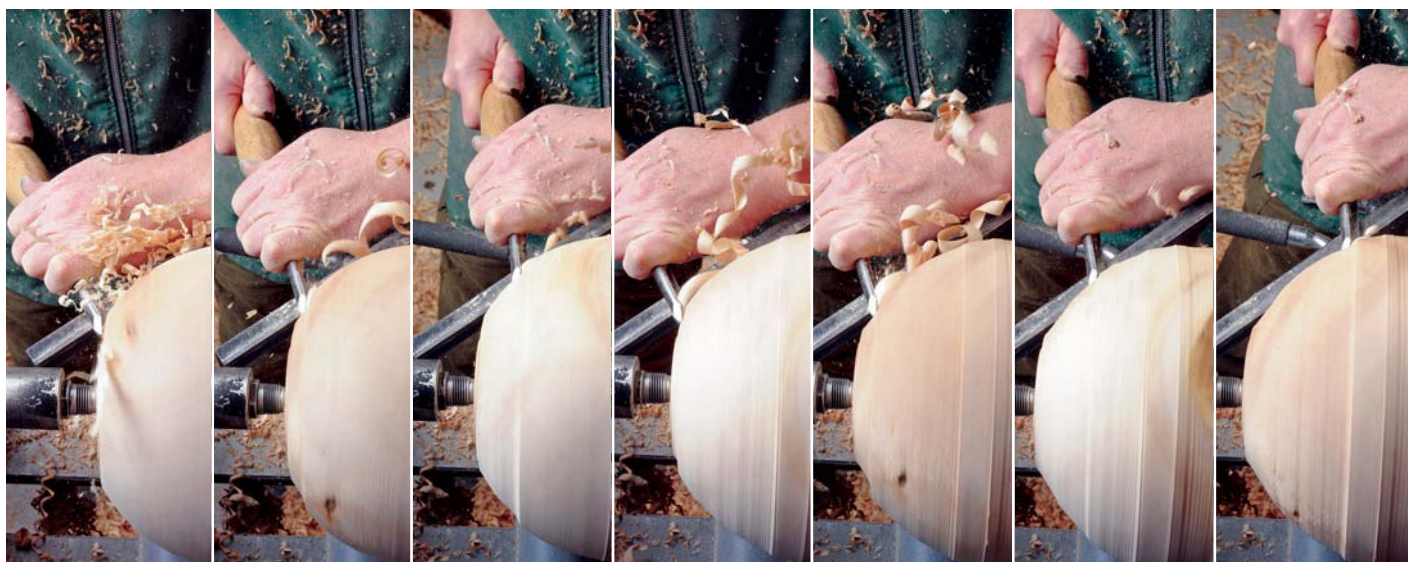
The nearer the vertical position for the cutting edge in relation to the surface, the finer the cut. Conversely, you can create a more aggressive cut by raising the handle so the cutting edge is nearer towards the horizontal, but take care, as this is an

aggressive cut that can be tricky to control.

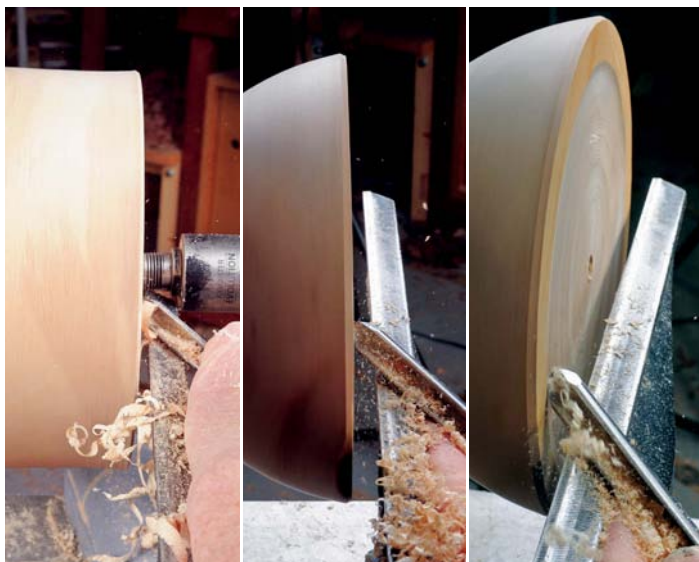
Making this cut without the bevel rubbing gives it a scraping-cut effect. With the blade presented horizontal, rotate the blade so the flute points closer towards the workpiece. Pointing the flute towards the 10 o'clock position will mean that the bevel will be almost rubbing, but not quite, so is a hybrid scrape/cut.

If you want a finer cut, present the cutting edge at an approximately 45° or steeper angle to the work with the flute pointing almost into the work but not quite. When the tool is drawn across the face of the work, working with the grain, it will create a delicate shear scraping action. As you can no doubt see, a combination of raising or lowering the handle and adjusting the flute position will create a finer or coarser cut as required.

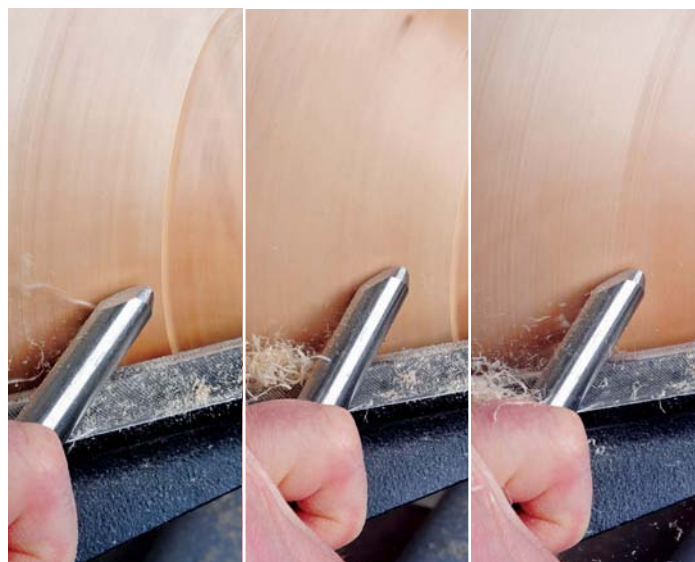
SEEN FROM ABOVE USING A PULL CUT TO SHAPE THE BOWL



USING A PULL CUT TO CLEAN UP THE FACE OF A BOWL



PULL SHEAR SCRAPING WITH A GOUGE – NO BEVEL RUBBING



◀ USING SCRAPERS

Scrapers are not used with the bevel rubbing. For maximum control, they are typically placed flat on the rest and used with a trailing blade angle where the handle is higher than the cutting edge. If the tool is held horizontally the cut is more aggressive but just about controllable, but you will find the wood tries to force down the cutting edge, and if you have the cutting edge in contact with the wood higher than the handle you are almost certainly likely to lose control which may result in a catch. A catch is where the edge digs in and is pulled

down into the wood at speed, thus raising the handle in a very quick movement that is hard to control. The scraper edge profile used should match the profile of the work being refined. It is also advisable to use the widest possible blade with as close to matching as possible profile on the cutting edge to ensure the smoothness of the shape being refined. Using too small a blade or one with a cutting edge profile that does not match is likely to create ridges; if you don't remove them, you cannot refine the shape.

USING A SCRAPER ON THE OUTSIDE OF FACEPLATE WORK

An angled or square-profile scraper is used for external work, such as a gently curved bowl. However, if you have two opposite curves running together – an ogee, for example – you will need to use a curved scraper too. Set the rest on or just below centre. Place the blade flat on the rest. Raise the handle so the blade tilts downward

a little, so that the cut will occur on or just below the centreline of the work.

Push the blade gently into the wood until the tool starts to cut and move the tool into or across the work as necessary to refine the shape. Only the gentlest of touches is required. The cutting action of a scraper is not as refined as that of a gouge and

a scraper is best used on close-grained dense timbers. To minimise tear-out, always cut in such a way that there is a longer fibre behind the one being cut. In the case of external bowl work, cut from the smallest to the largest section – downhill – so the blade is traversed around the piece to refine the external curve.



SHEAR SCRAPING THE OUTSIDE OF A BOWL USING A SCRAPER

Shear scraping occurs when the angle of the cutting edge is inclined in relation to the work to create a peeling-type cut. Imagine a knife slicing through bread – you're trying to create that slicing action. This is a more refined cut; the bevel does not rub and the blade trails, as with the standard scraping cut. However, as with a skew chisel, keep the cut in the lower half of the cutting edge for optimal control. The scraper blade is tilted so the flat face points in the direction of the cut and is presented at approximately a 45° angle.

The blade trails backwards slightly and is pulled around the work. A finer cut is achieved when the cutting edge is closer to a vertical position. The closer the cutting edge gets to the horizontal, the coarser the cut will be – just like a normal scraping cut.



CLEANING UP THE INSIDE OF A BOWL USING A SCRAPER

For internal bowl work, you need to set the toolrest on or just above the centreline. In this case, the cut is made on or just above the centre mark. You need to remember that the blade must trail down in order to give you the maximum control required. To ensure you achieve a well-supported cut, move the scraper from the largest outer section near the rim down towards the inner, lower section. This too can be

viewed as a downhill movement.

The shape of the cutting edge will help or hinder you, in as much as we need to have as much cutting edge contact with the surface as possible, but also, the shape of the bowl will affect the profile used. See the pictures below. The first one shows a round-nosed and a French curve profiled scraper. The next five pictures show a round-nosed scraper used to refine the inside curve. The handle starts off

being off to the right and depending on how deep the bowl is, you may find the handle hits the opposite side wall. So, that profile will not allow you to reach correctly where you need to go inside the work. The last two pictures show a scraper with a French curve profile. Note the profile allows you to cut more on the side of the profile so the handle is more square to the work, thus avoiding the possibility of hitting the opposite side wall.



USING A SCRAPER TO CLEAN UP AN END GRAIN PROJECT LIKE A BOX OR EGGCUP

For end grain spindle work, such as goblets and boxes, the scraper is usually only used to refine the hollow internal shapes – although on smaller work it is often used as the primary tool to create the small internal hollow sections. Present the blade in the same way as you would for bowl work – remembering to match the cutting edge

profile as best you can to the final internal profile required. Then, make the cut from the lower inner section of the work out towards the upper rim section. Remember the principle of always having a longer fibre behind the one being cut to provide support? Well, this cutting from the lowest inside section of spindle grain up towards the top

of such open forms means we are doing this. If in this case you have a small recurve, work from centre up and out towards the widest part then down from the rim to the widest section. Light cuts are all that is ever required. You are refining the shape not hogging timber out. Kiss the surface with the cutting edge and keep the edge sharp. ●



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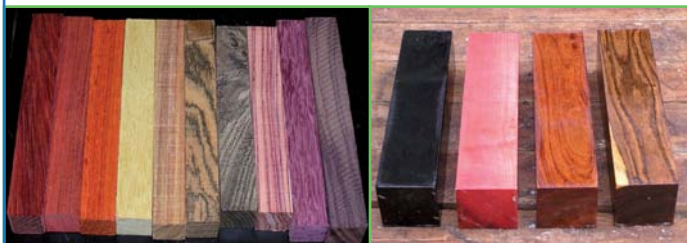
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In the workshop with... David Bettinghaus

We find out more about woodturner David Bettinghaus

PHOTOGRAPHS BY DAVID BETTINGHAUS

David is a segmented turner who was born and raised in Peoria, Illinois. He moved to the Chicago area in the late 1970s and decided to take up woodworking as a hobby, specialising in 'flat work', such as furniture and decorative boxes. An article featuring Ray Allen sparked an interest in segmented turning. David says that he was drawn to segmented turning by not only the use of all of the woodworking disciplines, but also the unlimited possibilities of design, colour and texture involved in the pieces.

How, when and why did you start turning?

For years I had been doing a lot of flat work, i.e. furniture, boxes and humidors. I started woodturning in the late 1990s. As mentioned above, I read Ray Allen's piece on segmented woodturning and in the article was a photo of Ray sitting inside his current project, while it was mounted on the lathe. It was a huge

semi-closed bowl with thousands of pieces of wood. I thought at the time 'I need to do this!'

What and who are the greatest influences in your work?

As for the 'what', I would say the many options that segmentation gives to woodturning. Colour, shape and grain pattern all influence the pieces I create. In terms of 'who', to start with, I would have to say Ray Allen. Although I never met Ray, and our styles are quite different, he unknowingly started me on the journey. Current influences include Malcolm Tibbetts, Robin Costelle, Jerry Bennett and Michael Mode.

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

Patience. Rome wasn't built in a day. Take some time out for just sitting, thinking and visualising the piece.



'3-Quarters', marupa (*Simarouba amara*) and cherry (*Prunus serotina*), 230mm high x 140mm dia.



What music and which book are you currently into?

Music is across the board, but generally, I lean mostly towards American folk music. Books are usually historical fiction. The current book I'm reading is *Paris* by Edward Rutherfurd.

What is your silliest mistake?

My biggest mistake was not taking any woodturning lessons. I'm self-taught and it took me at least five years of mistakes to get where I am today. I consider myself a better builder than a turner.

What has been your greatest challenge?

Getting local art galleries to recognise woodturning as an art form. As turners, the leap of the 'craft' stigma to art can be daunting.

Name one thing on your 'to do' list

The list is quite long. If I were to pick one, it would be John Beaver's wave forms. They are fascinating!

Tell us about the piece you are currently working on?

Currently, I'm working on introducing a more vertical look to one of my mobius ribbon sculptures. I plan to utilise a base to raise the piece off a flat plane.

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

Being a segmented turner, I seem to utilise all the tools in the workshop. With my current mobius ribbon work, I couldn't be without duct tape. It's a great clamp.

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

I would be more patient. Because I travel in my work, I don't get as much time in the 'shop as I would like. As the pieces drag along, I tend to lose interest and can't wait to start something new. I know, it's insane.

What is your favourite type of turning?

Anything segmented. Bowls, vases, ribbons, anything that results in 'oh my gosh, how did you do that?'

If you had one wish, what would you wish for?

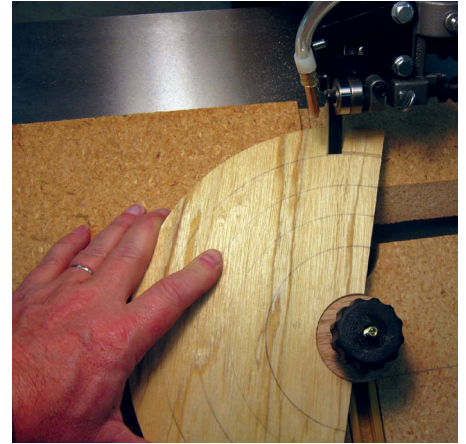
Peace on earth and goodwill towards men. I know it's not turning related, but I ask for it every Christmas – I'm still waiting.

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

I think the next piece of equipment I will buy will be a bowl/spindle steady. Right now the height of my work is limited and I would like to introduce a more vertical look.

DAVID'S HOME-MADE/BOUGHT JIG

By utilising the bandsaw 'bowl from a board' technique, I wanted to get more wall consistency, so I created this jig to cut perfect circles on the bandsaw ●



'Scribbon', walnut (*Juglans regia*), 330mm wide × 330mm high × 330mm dia.



'Bent', mahogany (*Khaya ivorensis*), walnut (*Juglans regia*) and spalted maple (*Acer saccharum*), 125mm high × 280mm dia.



'2 Face', marupa (*Simarouba amara*), walnut (*Juglans regia*) and mystery wood, 150mm high × 330mm dia.



'Scrap Bin', various woods, 165mm high × 330mm dia.



'Drunkard's Path', mahogany (*Khaya ivorensis*), birch (*Betula pendula*) and padauk (*Pterocarpus dalbergioides*), 200mm high × 280mm dia.



'Frenzy', birch (*Betula pendula*) – two ribbons combined – 355mm wide

HANDY HINTS

1. Don't be afraid to ask questions. Most segmented woodturners are givers/teachers by nature. In fact, once they start, you may have trouble shutting them up
2. In segmented work keep your tablesaw and/or chopsaw blades sharp. I have two blades for each saw and rotate them often
3. Utilise non-traditional methods, ie: duct tape clamping for irregular shapes or hot melt glue mounting. I learned these methods from Malcolm Tibbetts
4. Attend symposiums. Join a club. Practice, practice, practice
5. Don't be afraid to try something new or try to improve a technique. Just because I do something one way doesn't mean it's the best way. You're only limited by your own imagination
6. Share your knowledge with others

LIKES

- The giving nature of the segmented woodturning community. We have our own cyber woodturning club – www.segmentedwoodturners.org. Our members are from all over the world. A lot of great influences and participation. We are having our bi-annual symposium this October in San Antonio
- The 'oh my gosh, how did you do that?' reaction

DISLIKES

- Spindle turning. I don't do it very often, hence, I'm not very good at it. The skew chisel is not my friend
- Cleaning the workshop
- Glue all over me

WHAT I HAVE LEARNT

- Patience – in segmented turning, nothing gets done in a hurry 75-80% of your time is in building the blanks
- Planning – make a detailed plan and stick with it, just as it is in life
- Precision – always avoid cumulative error. One loose joint will ruin the piece. 'That's good enough'... isn't
- Companionship – belonging to the woodturning community
- Comradery – being able to give and receive constructive criticism
- Sharing – ideas, techniques and philosophies

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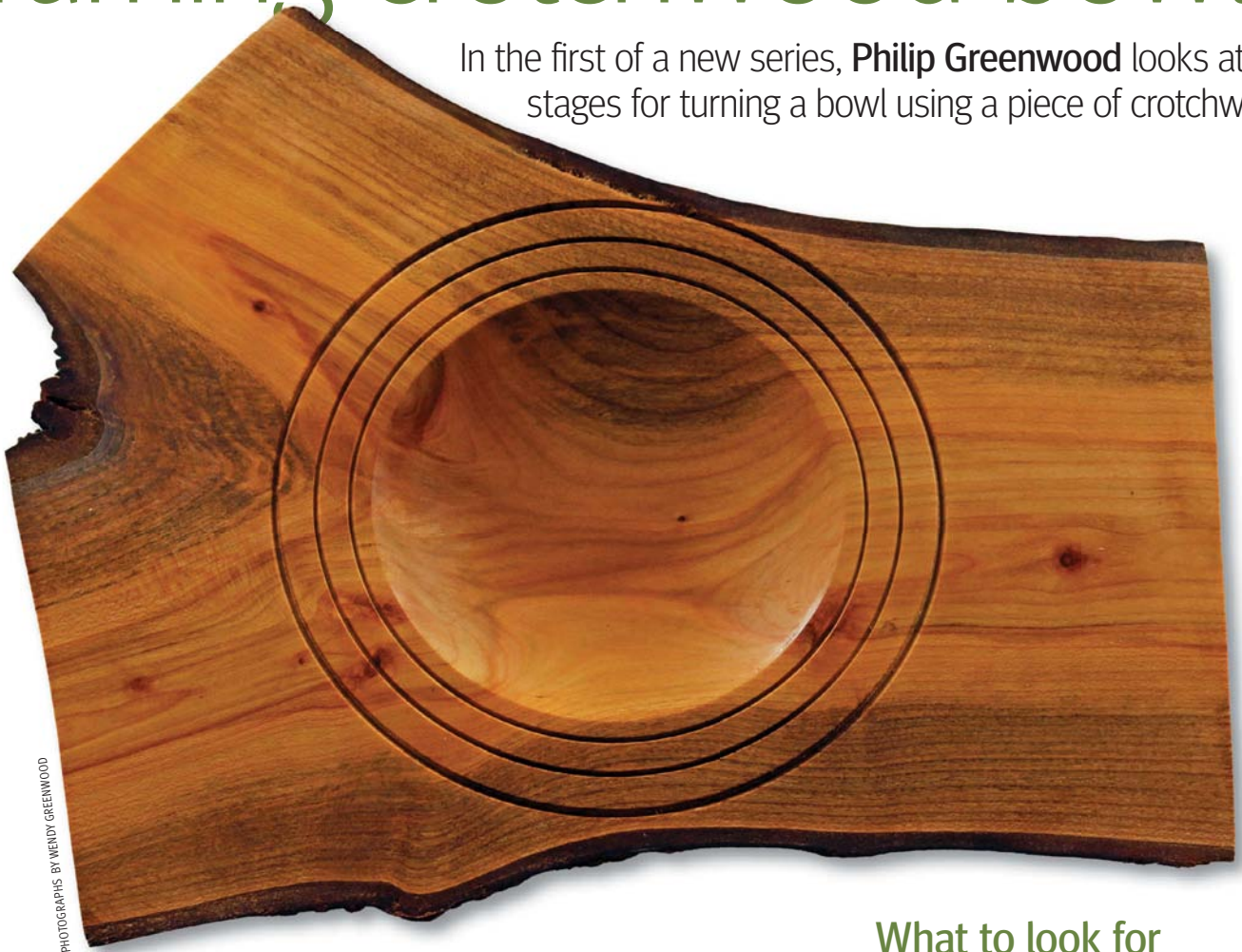
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Turning crotchwood bowls

In the first of a new series, **Philip Greenwood** looks at the stages for turning a bowl using a piece of crotchwood



PHOTOGRAPHS BY WENDY GREENWOOD

PHILIP GREENWOOD



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 runs courses at his workshop.

philip@woodturningintoart.co.uk
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I have turned a lot of crotchwood bowls over the last 30 years and these are one of my favourite types of bowls to make. Design is often governed by the way a branch has emerged from the main trunk of the tree or where the main trunk has split into two – you can't change nature but you can work with it. How much detail you add is dependent on how the piece looks for grain pattern – you may decide to leave the turning very plain or,

in this case, I have added detail to highlight the grain. You know the grain pattern as the branch splits away from the main trunk is going to look good but how good is not known until it is cut in half lengthways. I have been disappointed at times while other times I've been pleasantly surprised with the outcome. The good news is you get two halves out of one piece of timber. One point to bear in mind is the swing over the bed of your lathe. If, like this piece I am turning, it is not round, check first by taking a measurement from corner to corner; this is just a rough guide depending on where your mounting point is. It may not be in the centre, depending on the shape and any defects; this means that it may be too large to swing over the lathe bed, which will provide you with two options: cut a piece off or move the mounting point. If this is the type of turning you'd like to do more often, then you could consider changing your lathe but this is not something to be taken lightly. The timber I used for this project had been drying for four years. It was dry, but still had a moisture content of 14% so slight movement was expected.

What to look for

You are looking for a crotch piece that looks promising from the outside: this includes size, shape, splits in the bark and overall appearance of the piece. This may be in a long length with the side branch partway along the branch length, in which case you need to decide how much length at each side of the side branch to leave. Once you have cut the piece out, you then need to cut this lengthways in half, which can be done with a chainsaw if it can be held safely. Ensure to take all the correct precautions if using a chainsaw, such as wearing the correct protective clothing. Alternatively, a bandsaw can be used to cut the piece in half. Think ahead as to where the blade will touch first. If there is a danger of the blade grabbing and twisting the piece, make a jig to hold the piece safely.



Different examples of crotchwood

Holding the piece on the lathe

Holding the piece on the lathe can be done in many different ways, depending on which pieces of equipment you have available. The faceplate is one choice here if you have sufficient material depth and a faceplate that has the holes in the right place to screw onto the timber without spoiling the timber or causing problems with the design – this also applies to a faceplate ring, which fits on your chuck jaws. The considerations are the holes you have to drill, which may be a problem turning away later if too deep. Also, too small screws may not hold and this can be dangerous if the piece came loose. It could be held between centres or use a sawtooth bit and cut a hole slightly wider than your chuck jaws so the jaws can be expanded into the hole.



Using a faceplate to hold this piece on the lathe

Finishing options

With this type of item I tend to use an oil finish, which I brush onto the surface. When you have cracks and holes in the surface, a brush will get in to all the places where a cloth would not. I suggest not using a wax finish due to the hole and cracks, which leave white marks when dry. If you have had this problem before, then a toothbrush will remove the dried wax in most cases. I apply about three coats of oil, depending on the density of the timber or until I reach the finish I am looking for. Wipe off any excess after a few minutes and allow drying time before applying the next coat. This item will need three coats of oil and can finally be buffed with a soft cloth.



Finishing the piece using an oil finish

INFORMATION & PLANS

EQUIPMENT USED

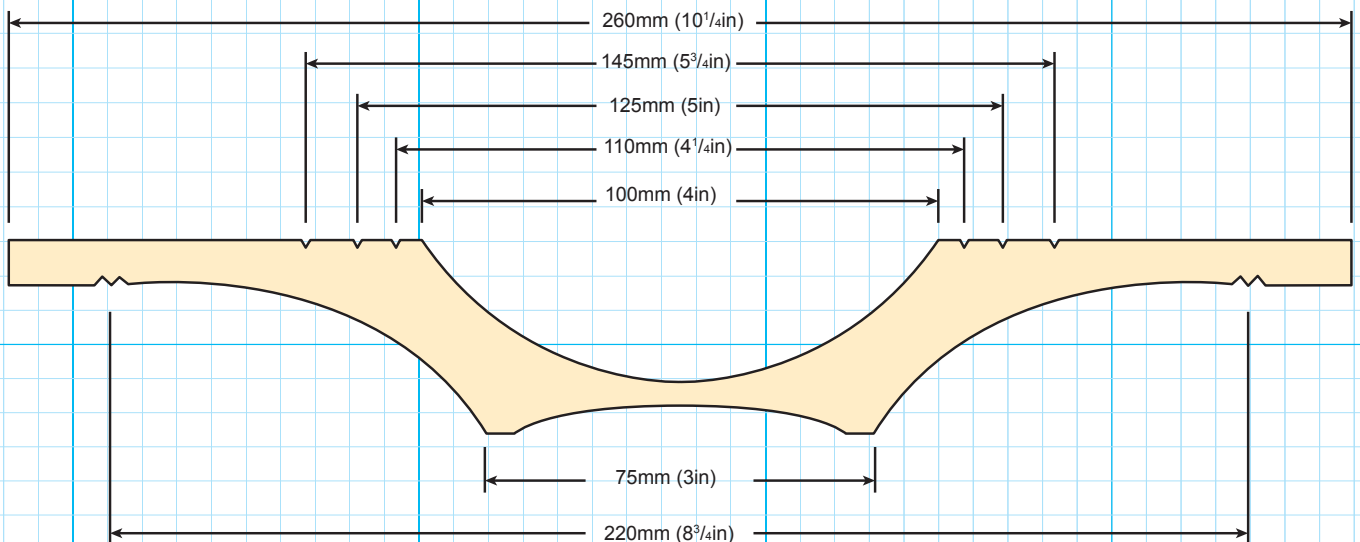
10mm bowl gouge
25mm French-curve scraper
3mm parting tool
20mm skew chisel
Bandsaw
55mm sawtooth bit
Range of abrasives
Drill with a sanding arbor

Anti-slip matting

PPE: latex gloves, facemask, respirator/
dust mask and extraction

TIMBER REQUIREMENTS

Cherry (*Prunus spp.*): 265 × 220
× 38mm thick





1



2



3



4



5



6



7



8

1 The first step is to cut the piece lengthways on the bandsaw. The piece I used was easy to guide through, but it is important to check this before switching on the bandsaw

2 Use a jig for supporting the piece; this will allow it to slide through the bandsaw. Don't take any risks when using this type of equipment

3 The next step is to measure and mark the centre of the piece

4 Look for the best grain pattern, work around any defects in the piece and think about the lathe capacity for this type of work. Use a faceplate to visualise the centre if required

5 Here I am using a 55mm sawtooth bit to cut the recess for the chuck jaws. Use packing pieces to level the top face, then clamp this to the table. A lot of twisting force is transmitted to the workpiece so be careful

6 Fix this to the chuck using the recess previously drilled out. Check the top face is running true by hand before fully tightening the chuck. Don't use excessive force when tightening the chuck; this can cause the timber around the hole to split

7 Use a bowl gouge to clean the underside of the bowl. I am using a push cut to clean this off; my flutes are facing around the 2 o'clock position if looking from the tailstock end. When you have an intermittent cut like I have on this piece, it is better to take several small cuts than a heavy cut

8 You can now mark the diameter of the chuck jaws that you will use. You will remount and remove the chocking point later and also mark the foot diameter for the bowl; this will be turned away but will give you an idea of how it will look when finished

HANDY HINTS

- 1.** Look for an interesting piece of crotch timber – you can consider any timber species
- 2.** Use a jig on the bandsaw; this will allow you to hold the piece if you are in any doubt about this grabbing
- 3.** Wear a faceshield when turning items with the bark on and always use dust protection
- 4.** Turn these items at a speed that is safe, which allows you to feel comfortable within the capabilities of your lathe
- 5.** Always spin the piece by hand before you switch the lathe on and commence turning; this will allow you to check for clearance before you begin

9 Use a parting tool to cut the chuck jaw diameter and adjust the toolrest as needed. Use the parting tool with the handle slightly lower than the tip of the tool. Just push in until your recess is around 6mm deep

10 Use a pull or a push cut to shape the underside of the bowl. You are looking for a curve from the foot to the rim. Use several cuts to rough this down, stopping to look at the shape as you progress. Remove waste as needed for the shape. If required, sharpen your gouge for the finishing cut – a sharp tool will mean less sanding later, which will have to be hand-sanded due to the irregular edge shape of the bowl

11 Taking very light cuts will allow you to achieve the best surface finish

12 Use a scraper to refine the surface, removing any tool marks from the bowl gouge. Always hold the handle higher than the tool tip so it cuts in a trailing mode. Take very light cuts here

13 I also used the long point of the skew in scraping mode to cut a decorative detail out towards the outer area. Make sure you only cut small amounts each time with gentle cuts and take your time to achieve the best finish. Two V-cuts add just enough detail to this piece. The last thing to do is cut the dovetail to match the angle of the jaws. Use the skew chisel held horizontally on the toolrest and using the long point, cut the dovetail. Make sure the bottom corner is clean or your bowl will not sit correctly in the jaws

14 The piece has to be hand-sanded due to the irregular edges, which are synonymous with crotchwood. Start with 120 grit followed by 180, 240, 320 and finally 400 grit abrasives. Try to work with the grain; this will reduce sanding any marks from accumulating on the surface

15 Mount the bowl on the chuck, tighten lightly at the start and check for run out on the bottom of the bowl. Once you are happy with this, tighten the chuck fully. If the bottom of the bowl does not run true, then the thickness will vary. Placing the toolrest at the back so when you rotate the work by hand you can see run out clearly is a neat trick

HANDY HINTS

- 6.** If a technique is unfamiliar to you, then seek the advice of a professional turner beforehand
- 7.** If the piece is still a little damp, it can still be turned but expect a little movement as it dries fully





16 Use the bowl gouge to clean off the top face; here, I am using a push cut with the gouge flutes facing in the direction of cut. Keep cutting until the face is clean, or keep turning until you have the correct thickness required for the bowl walls

17 You need to position the toolrest close to the top face of the bowl and use a scraper to clean the tool marks, which have been left by the bowl gouge. Remember to have a slight trailing angle on the scraper tip; this will give you the best finish and will also allow you to avoid dig ins



18 This is an alternative way to sand. Lock the lathe spindle and using a drill with a sanding arbor in place, go through all the abrasives grades until all tool and sanding marks have been removed. Finally, hand-sand in the direction of the grain with 400 grit abrasive

19 Don't forget to unlock the lathe spindle after sanding. Mark the bowl diameter – that way you have a visual guide when turning the centre. Mark this smaller if needed – you can always open the bowl diameter up but you can't make this smaller

“Don't forget to unlock the lathe spindle after sanding”



20 Start removing the waste in the centre with the bowl gouge. Keep a check on the diameter and depth and remember that the spigot on the base will be removed, which will reduce the thickness as will undercutting the base. Aim for a sweeping cut from the top to the centre

21 The next step is to use the scraper to clean the surface and remove any marks from the bowl gouge. Stop the lathe and check the surface for any bumps or marks and if any are found, continue with the scraper to remove them; this will reduce time spent sanding later on. Now is the time to add the detail on the top surface of the bowl. I am using the skew chisel to add three decorative rings here – the distance between each one increases as you move from the bowl centre. Take your time to ensure a clean cut, then sand to completion. Place a part-turned bowl on the chuck and cover this in anti-slip matting followed by the bowl and then bring up the tailstock to hold the bowl against the matting. Now remove the spigot and slightly dish the foot. Take off the lathe and remove the small pip by hand, then sand to completion



22 The finished crotchwood bowl in cherry should look something like this •



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Less common timbers – part 1

Continuing with his series, **Dave Bates** looks at those less common timbers

PHOTOGRAPHS BY DAVE BATES



Spalted hornbeam (*Carpinus betulus*) hollow vessel, 380mm dia. x 200mm deep

DAVE BATES



Dave started turning when he was about nine years old but didn't start taking it seriously until he saw three bark edge bowls by Bert Marsh in the early '80s. From a background in horticulture and then tree

fellings, he took up arable farming in 1979, and in 1987 following the Great Storm, set out to acquire a few trees for his hobby. Dave, along with his wife Janet and their son Pete, runs Stiles & Bates. He is also on the Register of Professional turners (RPT).

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Numerous timbers that are not part of forestry planning schemes but are nonetheless used on a small scale commercially – most often by specialists – can probably be best described as being hedgerow or parkland trees. Among those are hornbeam (*Carpinus betulus*), false acacia (*Robinia pseudoacacia*) and field maple (*Acer campestre*). These are three interesting timbers we can make good use of when the opportunity arises.

Hornbeam

Hornbeam is a rather dull, pale coloured timber with pale grey streaks and flecks, but being dense, hard and tough, it is something of a specialist timber. Over the years it has been used for such jobs as cogs, pulleys, mallets, musical instrument parts and is listed in one book as being hard enough for industrial flooring. Its one weakness, however, is that it is not at all durable outside and quickly begins to rot. Before that stage, however, it is capable of becoming as spectacular a spalted timber as you could ever turn and caught at the right stage, it still retains a density that most other spalted timbers lose. For that reason, we almost never mill hornbeam as a special use timber, but leave the logs in the weeds and wait for the fungi and bacteria to set about naturally recycling it.

The trick is catching it at the right stage. Where say, beech (*Fagus sylvatica*) will spalt in one to three years, hornbeam usually needs just one summer. We once left a batch for six months too long and lost

the lot, so it is one to keep an eye on. The markings can vary greatly, from fine lines, as is common with most timbers, to wide, dark brown lines. I guess, because the timber has wide medullary rays.

My first experience with spalted hornbeam



Spalted hornbeam dish, 255mm dia.

was the year after what is now called the Great Storm of 1987. I was gathering timber like a maniac just for my hobby use and only stopped when I got to 50 trees in 17 types and among them was a rare gun barrel tree, just under 0.9m in diameter, which had been growing in a fence line. It was leaning at about 45° and was one of a number that formed part of a learning process of getting heavy leaners on the ground without splitting or tearing them, but I got it home intact with the bottom 1.22m ingrown with three strands of barbed wire. We took the bad end off and milled the rest into planks, which we expected to be dry in about three years. Hornbeam is a slow drier. The following winter, on one of those days when you get the saw out to have a good tidy up of the accumulated offcuts for the log fire, I went to the bad end and dropped the saw either side of the barbed wire. The timber was still crisp and hard, but the spalting lines were

stunning. The focus then moved from logs to bowl blanks!

In the event, with the wire inclusions and because my first cuts had been for logs, the best blank was a 380 × 200mm lump, which I roughed down to dry out over the coming year. Once remounted for finish turning, I decided to make my first ever beaded vessel and not working out any other way, decided after drawing the beads out, that the only tool for such clean definition was a skew chisel. Wrong tool maybe, and with cuts with and against the grain direction and the fear that the piece might warp while I was turning it and lose concentricity, I did the job in one grim session of total concentration. I said to my wife afterwards that I was totally shattered by the effort and really should have called for the help of a midwife. Sympathy received? Zero. The vessel has mellowed to a dark straw colour over the years, but the spalting still shows well.

TURNING CHARACTERISTICS

- Plain hornbeam cuts well to a fine finish. Being as tight and hard as it is, it can be worked and polished to as good a finish as any of the exotics. It will take a coarse thread too
- Once spalted, although there will be the odd soft and pecky area, if caught at the right time the timber retains its denseness and peels away easily
- Most spalted timber will have a higher moisture content than plain timber left to season for utility work, so care needs to be taken not to heat the wood up with heavy abrasive work
- Oils will darken the timber quickly, but cellulose or acrylic-based products will preserve the light colour for longer

Field maple

Field or hedge maple is generally a small tree up to 460mm diameter very often branching out low down, so rarely available in good commercial quantities. It is listed as being similar to our own sycamore (*Acer pseudoplatanus*), but in reality it is much tighter, finer in texture and being denser, much heavier.

We once milled one that was over 0.9m in diameter and 4.27m long, I didn't believe it could possibly be *campestre* when I first heard it described over the phone, but true enough it was and we estimated the weight to be over 3,000kg. Thick planks are milled from big trees and that was our first – and so far, only – opportunity to mill a whole field maple into 100mm planks. Like most small operators, although we have an all-terrain forklift and all sorts of lifting gear, we still put our planks into stick by hand and just two planks into the tree we decided that 100mm was too darn heavy, so switched to 75mm. Even halved, they would have been hernia planks.

Smaller trees often have wonderful burr patches and areas of fine figure, flame and even quilting patterns. Such planks cut into book-matched pairs are popular with cabinetmakers for fine boxes and the like.



Field maple (*Acer campestre*) bowl with flame figure, 230mm dia.

TURNING CHARACTERISTICS

- Field maple is a kind timber that cuts like soap and is without doubt our finest grained *Acer* – good for the finest detail and even for high definition carving
- We have sold it to flute makers and makers of other musical instruments, but sadly supplies are spasmodic at best
- It sands easily, maybe too easily, so fine detail is best cut in after main sanding and before the finer grits
- In terms of finishing, high shine or satin, it is a pleasing and pale timber that will darken to a pale honey brown over time



125mm field maple dish with burr and ingrown bark

False acacia



False acacia (*Robinia pseudoacacia*) enclosed form with burr, 180mm dia.

Also known as black locust, false acacia must be one of the most underrated timbers out there. This might be because in numerous publications it is listed as having a marked tendency to warp, split and buckle. In direct contrast, in over 25 years of milling and using this timber, I have found it to be reliable and stable to the last plank. It is a hard, open grained timber, similar in grain appearance to ash (*Fraxinus excelsior*), but with harder texture.

It can apparently be steam-bent more reliably than ash and is almost as durable as oak (*Quercus robur*), so for me, it is a timber that could be described as 'ash with attitude' and a perfect all-rounder. Like ash and oak, it is ring porous and has a high tannic acid content, so although attractive as a plain timber, for open grain embellishment, fuming or staining with vinegar iron, it is a timber with a wide range of possibilities. If you find any with burr, it will be as tight and fine as any. One of the problems sourcing the timber in the UK is that the logs are usually bent or spiralled so milling a good yield is difficult. In the past, I bought in some gun barrel logs from France and they were a dream to mill and dry.

There is a story that back in the 1800s, an entrepreneur in the US with a high opinion of black locust decided to persuade the estate owners of England to plant their forests with it, so employed Native Americans to gather seed for his nursery beds. The trees that were grown from these seeds and subsequently

planted over here, grew bent and spiralled, so soon fell out of favour. It is easy to believe that he could have been a bad employer and was only given seeds from the deformed trees. Certainly, planks from such trees will be unreliable during seasoning, so the bad reputation might all go back to one person. Who knows? ●



False acacia hollow form with burr, iron stained, 125mm dia.

TURNING CHARACTERISTICS

- False acacia turns well, if a little hard on the tools
- It is tight enough to take fine detail and sands crisply
- It will take any finish well, from high shine products to oils and for outside use and years of neglect – as for the handle of my old garden roller – even no finish at all is not detrimental

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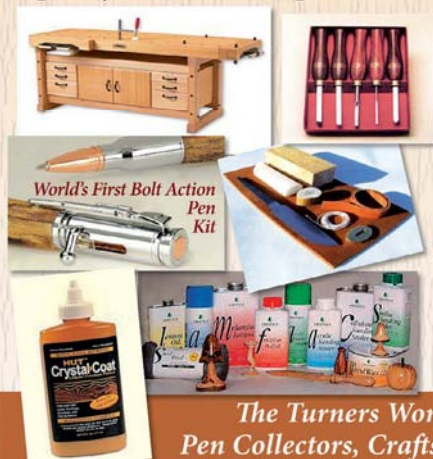
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Making a beer mug

Terry McDonald crafts a wooden beer mug

PHOTOGRAPHS BY TERRY MCDONALD

TERRY MCDONALD



Terry served in the Fleet Air Arm as an aircraft radio and radar technician and worked in avionics as a design and development engineer for 20 years after leaving the Navy. He also then worked in IT and electrical/mechanical engineering before retiring and taking up woodturning.

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The beer mug harks back to times gone by, when many drinking vessels and plates were made from wood. I first made one for myself in 2011, some four years after I had first learnt to turn, as a bit of a challenge, not that you should be frightened off by that statement.

It is not perhaps the easiest of projects, but then neither is it the most difficult; it's merely that there are some things about it, which at first sight are not easy. The handle comes to mind, which is not turned although you could do so.

I have since made a number of beer mugs for friends and am now receiving requests to make more as they seem to catch people's imagination and, of course, they find them tactile. I have modified my manufacturing methods since the first one, which you will of course benefit from, assuming that you choose to follow my methods. You may, however, choose to follow your own methods, which is fine as I am not trying to define a standard process which you must follow. After all, you may have skills which I do not possess.

So, what have I learnt from all this? Well, I have established a better method of attaching the handle and also I leave a spigot on the mug. This gives me something to hold onto while putting on the cold-cure lacquer. It enables both the inside and outside to be coated at the same time, thus saving a lot of time.

The basic mug is burnished and, because I now leave a spigot, it can be done on the lathe. After removing the spigot and finishing the bottom the mug is then ready to fit the handle. The fixing methods for the handle have been improved; originally it was glued to the mug using aliphatic glue having first removed the finish in the attachment area.

I have found that removing a little of the wood as well means the handle can be set into the mug giving a better fix.

You can, of course, style the mug to your own tastes and indeed can plan to make it weights and measures acceptable. However, I like my mugs to be slightly bigger than the standard pint as the beer is not so easily spilt as the evening wears on! The dimensions given in this article should deliver a mug of approximately one pint – you can make yours a bit bigger if, like me, you want a little extra room.

I tend to use sycamore (*Acer pseudoplatanus*) as it is food safe, but given that the wood is completely covered in cold-cure lacquer, I guess you could use most woods – I would not recommend yew (*Taxus baccata*) or the more exotic African hardwoods, however.

One word of warning: do not put cola into your beer mug as one of my friends

did; the formic acid in cola does wonders in destroying the beautiful finish inside your mug.

I dread to think what it did to his stomach! And yes, I did point out that it was a BEER MUG!

Moreover, having a whirling handle which becomes invisible while you are trying to repair the damage to the mug fitted in Cole jaws on your lathe, is not something I would recommend... yes, he is still my friend but only just! The thought of accidentally getting my fingers in the path of an invisible whirling handle was not one I wish to contemplate.

One other thing that evolved from making the first mug was the design and manufacture of a tool to hold abrasive, so that you can reach the bottom of the mug. I have very big hands and they simply won't reach into the depths of the mug. I will show you how to overcome this problem with a cheap and cheerful piece of kit that I have also used on other projects with some success.



INFORMATION & PLANS

EQUIPMENT USED

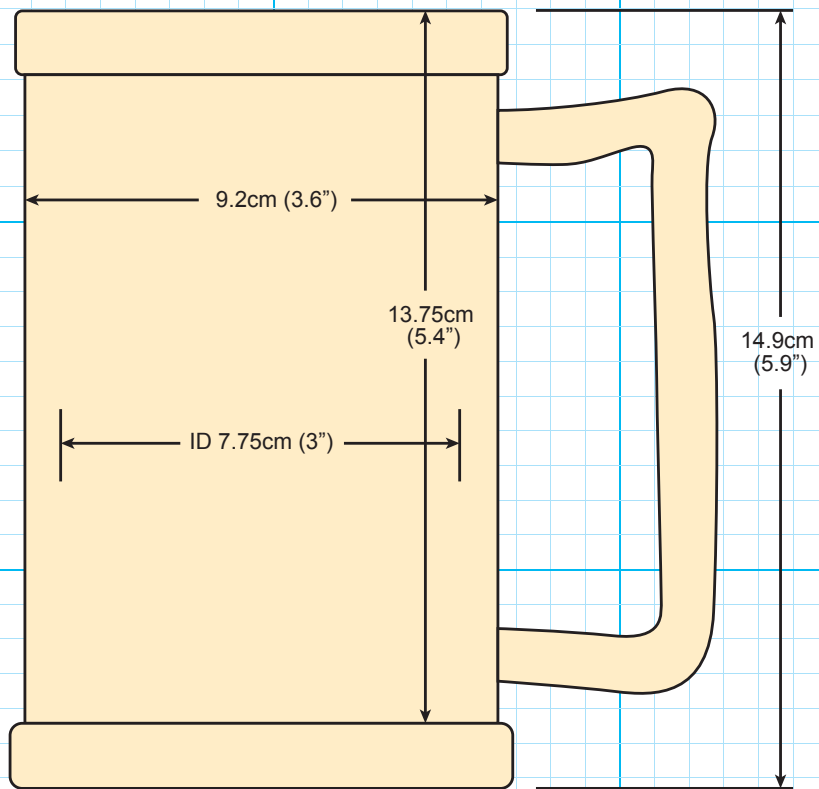
Spindle roughing gouge
Spindle gouge with fingernail profile
Scrapers as required
Hollowing tool of your choice
Parting tool
Ruler & pencil
Combination square
Bandsaw or handsaw
Jigsaw or fretsaw
Four-prong drive centre
Rotating centre
Four-jaw chuck
Jacobs chuck
50 or 75mm Forstner bit
Abrasives from 80-600 grit
Aliphatic glue
Two-part cold-cure lacquer
Thinners to clean the brush
Small soft brush
PPE: latex gloves, facemask, respirator/
dust mask and extraction

MATERIALS USED

100 × 230mm sycamore (*Acer pseudoplatanus*) spindle or other wood of your choice

DIMENSIONS

The given dimensions should result in a beer mug capable of just holding a pint. The volume of a pint is 568.26cm³. So, you can if you wish



alter the dimensions to suit the shape you want to make your beer mug using the formula $V = \pi \times r^2 \times h$ where r = radius - diameter divided

by 2 - and h = the depth of the mug. I made mine slightly taller at 180mm, so I didn't spill any beer as the evening wore on

The body

First, mark the ends of the spindle to locate the centre using a combination square – or similar method to find the centre. Create suitable holes to take the rotating centre and four-prong drive centre – I use an old rock peg ground to suit. Mount the spindle in the lathe between centres and using the spindle roughing gouge, turn until round – approximately at 1,020mm. If necessary, square up the ends of the spindle using a parting tool. The end that is to have the spigot can be trimmed down to the four-prong centre, which will leave some material standing up. This is OK as it will fit into the recess of the chuck.

Mark the length required for the mug – remember to leave an allowance for refining and sanding at the top of the mug, approximately 155mm. Using a pencil, mark this measurement with the lathe rotating. Using a parting tool, cut a mark in the spindle about 6mm on the spigot side of the pencil line to allow refinement of the bottom of the mug. Then, reduce the diameter of the



Mark the ends of the spindle to locate the centre

remainder of the spindle to a suitable size to fit the chuck you will use – my chuck required 690mm. Remove the spindle and four-prong drive from the lathe. Fit your chuck and place the spindle between your chuck and the rotating centre. Now, refine the spindle to provide a shape similar to that shown. The design is a matter of choice and each of the

mugs I have made has been slightly different. Do not remove too much from the basic round spindle, as you want the mug to hold at least a pint – no less than the 920mm. Leave the top of the mug until the inside is finished – if you cut too much away it won't hold that pint. Having achieved the desired shape, sand the outside using 120-600 grit abrasives.



Mount the spindle in the lathe between centres



Use a spindle roughing gouge to turn until round



Trim up the ends



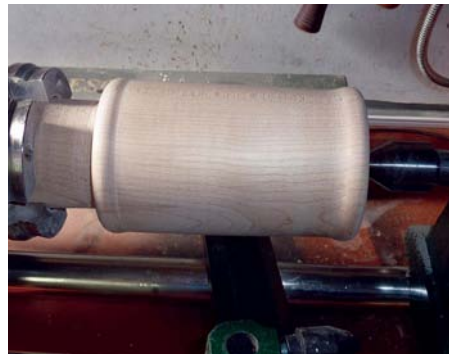
The end trimmed



Mark the length required for the mug



Turn down the spigot



Place the spindle between your chuck and the rotating centre



Refine the spindle

The inside and detail

Remove the revolving centre from the tailstock and fit the Jacobs chuck, then fit the Forstner bit. I find this method safer than trying to bore the centre of the mug with gouges, due to the depth required. Bore approximately 25mm at a time removing a little of the bore diameter each time to avoid the bit seizing in the mug as it heats up. Repeat until you have reached a point about 12mm from the bottom. You may choose to use a gouge and hollowing tool to achieve this if you prefer.

Once you have completed the bore, refine the inside of the mug using any method you feel comfortable with. I elect to use a hollowing tool and various scrapers, then sand to achieve a wall thickness of about 5-6mm with a flat bottom. You can have a curved bottom if you prefer – there are no rules, after all it's your mug. You need to

remember that you will probably want to make sure that your volume is going to be OK if you want the mug to be weights and measures compliant. This is the time to finish off the top of the mug to give the correct volume. There is also some room to increase

the internal diameter if it becomes necessary.

Now, sand the inside using 120-600 grit to match the outside. You may well wish to use my sanding tool to do this, unless you have very small hands – see separate details for this tool.



Boring into the mug



Refining the inside



The bottom refined

SANDING TOOL

MATERIALS

25mm square spindle at least 305mm long
– any timber you have will do
Small countersunk headed woodscrew

MAKING THE TOOL

Mount the blank between centres on the lathe and turn the first 200mm round, leaving 100mm square for the handle. Reduce the middle 150mm to a smaller diameter – say 19mm – leaving the top 50mm as it is.

The top 50mm should be very slightly tapered towards the top end; this allows you to angle the stick to avoid the back rubbing on the mug. Before removing

from the lathe you may wish to slightly radius the corners of the handle. Then, taking a standard hacksaw, cut down the length of the tool from the top through roughly the middle of the spindle to a depth of just short of 50mm – this is to insert the abrasive.

Remove about 4.8mm from the top of one side of the top section; this is to ensure clearance on the top of the tool, which will not be used to sand. Drill a suitable sized hole through most of the tool from the back end at the top for your woodscrew. Then, cut a tight clearance hole and countersink for the screw on the back half of the tool. Your tool is now ready for use. The various grades of abrasives

can now be cut to suit the tool. Cut off about 12mm width from the roll and then cut the length in half. With the screw side towards you make sure the screw is unscrewed enough to insert a piece of abrasive from your left into the slot, ensuring that the screw will cut through it close to the edge. Tighten the screw trapping the abrasive. You should have a small piece of abrasive extending above the top of the tool, which can be used to sand the bottom of your mug. Once the paper is worn out, remove it from the tool and turn the paper round so that the used bit is now in the tool slot, leaving the unused bit for use.

The finish

Before removing the mug from the lathe, mark the spigot so that when the mug goes back onto the lathe it can be placed in the same position on the chuck. The mug can now be removed from the lathe ready to put on the finish.



Mark the spigot

The finish used is a two-part cold-cure lacquer and the ratio is four-parts resin to one-part hardener. I use a dessert spoon to measure the resin and a teaspoon to measure out the hardener. This makes it easy to mix up the required amount on a one-to-one basis. Make sure they are old spoons, as nobody will appreciate a cutlery set missing two spoons!

Having mixed the finish you can now apply a coat to the mug using a small soft 6mm brush. Holding the spigot on the bottom of the mug, coat the inside and outside and the exposed part of the bottom. Allow the mug 24 hours to cure. Keep the mixed cold-cure lacquer in a small glass jar with a screw-on lid; this keeps it useable for 4-5 days.

Put the mug back on the lathe and using 'O' grade wire wool lightly de-nib the inside and outside of the mug. Ensure that all traces of wire wool have been removed before applying subsequent coats. Repeat the finish application process at least three times omitting the wire wool on the last application of finish. The mug can now go back on the lathe to be burnished to a high gloss.

Parting off

The mug can now be carefully parted off from the spigot. At this stage, the bottom of

the mug now needs to be finished off.

If you have parted off carefully, the bottom of the mug can be carefully sanded using a Jacobs chuck in the headstock with a sanding disc attached. Next, apply three coats of finish to the bare wood, which has been exposed by removing the spigot. The mug is now ready to have the handle attached.

The handle

While each coat of finish is drying, use the time to fabricate the handle. You will require six strips of wood 12mm wide by 150mm long and approximately 3mm, but no less. Ensure that the surfaces of the strips are smooth and flat. You now need to cut three of the strips in half when the wood can be laminated, using aliphatic glue in the pattern shown.

I always lightly clamp my laminate despite aliphatic glue not requiring to be clamped. I find it ensures a good tight fit. Leave the newly formed laminate to dry overnight.



Arrows show direction of the grain

You can now shape the handle to your desired design. I like to leave a thumb hold in the top of the handle and I prefer to make the handle as long as possible to accommodate larger hands, otherwise there is no point in having a handle.

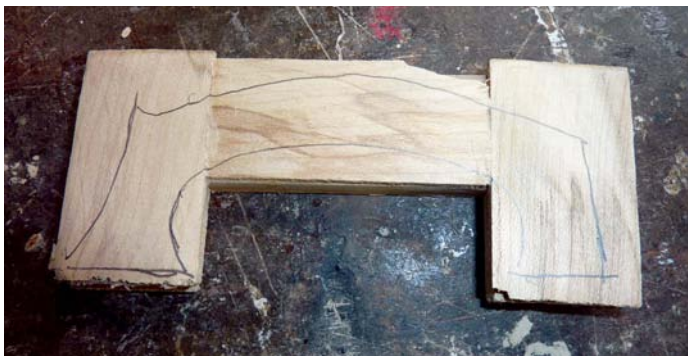
Once you have shaped and sanded your handle, make sure that the ends, which will attach to the mug, are square so that they will fit snugly to the side of the mug. Screw a long small diameter screw into one end of the handle; this will allow you to clamp the handle into a vice, while applying the finish. Apply the same amount of coats to the handle as the mug and in the same manner.

You are now able to attach the handle to the mug. Supporting the mug on its side with

rolled cloth to prevent movement, offer up the handle to the mug and hold it in place with masking tape. You can now attach small strips of masking tape to the mug around the feet of the handle. Remove the handle leaving the two areas to be recessed to receive the ends of the handle. Very carefully remove the finish and a little of the now exposed wood using a rotary-type carving tool, leaving a 1mm depression in the side of the mug, into which the handle will be glued. It is important to make sure that the handle is a tight fit in the recess for cosmetic reasons. Once you are happy, apply aliphatic glue to the depressions and fit the handle into place. The handle can be held in place with masking tape. Remember to wipe

any excess glue up with a damp cloth. Once the glue is dry, carefully remove the masking tape and apply some finish around the joint with a fine artist's brush to complete the project. Originally, I used Zap-O-Gap for this purpose, but as time went by it turns white, spoiling the appearance of the mug.

Having applied the finish around the joint, it's a good idea to hand burnish the area where the handle joins the mug; this will ensure that any overspills of finish are removed or any scratches in that area are burnished out. Your beer mug is now ready to be christened with your favourite tippie – I would personally recommend Shepherd Neame's 'Spitfire'. ●



The handle shape marked out



Screw a long small diameter screw into one end of the handle



The handle taped into place



Use the masking tape to mark for slots



The completed mug



The recessed cut

HEALTH & SAFETY

1. I would certainly recommend that you contact the manufacturers of any finish product that you may wish to employ to ascertain its suitability for this purpose
2. Of course, all the normal precautions should be taken, such as breathing apparatus and dust extraction
3. Remember, manufacturers have Data Sheets for their products, which provide Health and Safety information
4. With Two-part cold-cure lacquer you need to have a well-ventilated space and ensure that your skin or eyes do not come into contact with this product

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The Steampunk genre comes right out of Victorian science fiction has re-ignited a love of old fashioned materials and is all about mixing the old and new. The kit combines flat head screws, riveted design patterns, replica Gattling gun barrels, a Bolt Action mechanism plus a mixture of industrialized Antique copper, pewter and brass finishes.

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Axminster Evolution Series Quick Change Pen Centre

Walter Hall looks at this good quality pen centre from the Axminster Evolution Series



PHOTOGRAPHS BY WALTER HALL

The quick change pen centre from Axminster Tools & Machinery is the latest of several designs of mandrel saver available to pen makers. Like all similar devices, the centre consists of a revolving centre mounted on a Morse taper and drilled to fit a standard pen mandrel. The use of such a device affords two major advantages over the more usual method of mounting a pen blank and bushings, using a nut on the threaded tailstock end of the mandrel. By bringing the pressure from the tailstock to bear directly upon the bushings, any tendency of the mandrel to distort or whip is removed and changing over from one set of bushings to another is facilitated by there no longer being any nut to remove, thus speeding up the process.

In use

In use the centre ran smoothly and quietly and functioned exactly as expected. The quality of the bearings and general build quality are to the high standard expected from Axminster's Evolution range and give the user confidence that this will be a robust tool that will last them a long time.

As this centre is designed to fit Axminster's own range of mandrels and because there can be variances in mandrel diameter tolerances between different makers – I have found that mandrel shafts can vary from 6.1722mm to 6.2738mm – I also tested the centre with mandrels from Turners Retreat, Penn State Industries and Rotur and was pleased to find that the centre worked perfectly well with all those tested.



In use the centre runs smoothly and quietly

Verdict

This is a good quality centre, which does the job it is designed for well. It will help prevent 'out of round' issues caused by mandrel distortion and will speed up batch production.

DETAILS

Prices: £25.96

Contact: Axminster Tools & Machinery

Tel: 03332 406 406

Web: www.axminster.co.uk

ERRATA

In the Drechseln & Mehr pen finish test featured in issue 274, we incorrectly stated that the dropper bottle was supplied with the pen finish package. Although by no means essential to the

use of the finish, if you wish to use a dropper bottle, they are available through chemists and industrial suppliers.

In the same issue, we were also given the

incorrect price for the Ashley Iles convex-bevel parting tool. The correct price is £24.12, excluding P&P.

Apologies for both of these errors.

RECORD POWER BS250 BELT & DISC SANDER

This heavy-duty belt and disc sander from Record has plenty of power to handle demanding sanding while also being capable of fine and delicate work. The solid cast-iron table provides ample support and the 1hp motor provides plenty of power to avoid stalling under pressure. There is an optional leg stand and wheel kit, which can be purchased separately. There is also a repositionable belt, which allows large end grain pieces to be fitted into upright position for end grain work. It is also great for sanding curves. Overall dimensions are 360mm high × 640 wide × 530mm diameter.

Contact: Record Power
Tel: 01246 571 020
Web: www.recordpower.co.uk

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AXMINSTER TRADE SERIES XP380S EXTRACTOR

This 'L' Class XP380s extractor has been designed to be a tough, no-nonsense machine for extracting dust from hand-held power tools.

The power head is made from drawn steel, which is then epoxy coated and houses the highly efficient TwinFlo motor. Sound deadening keeps the noise very low and a plug-in replaceable power cable is fitted as standard. The integral PCB provides power to the external socket and powers up the vacuum motor once you turn on your power tool. Auto shut-off after you turn off your power tool keeps the hoses clear. A selection switch for manual use is also fitted.

The container of the extractor is equally strong, being made from Numatic's own Structafoam material. The Tritex filter system traps 99% of dust down to 0.5 micron in size. HepaFlo bags are recommended for use to ensure safe waste disposal.

A set of castors allows easy movement around the workplace and a big grab handle gives a comfortable grip when lifting. The kit includes a 3m hose with clips to hold your power tool cable, a stepped rubber adaptor,

an alloy floor wand and a 300mm floor tool.

A further upgrade to 'M' Class filtration can be made by fitting the optional HEPA filter module. This simply clips into place between the power head and container. The Tritex filters must be used as well. This will give the best possible filtration and satisfies the HSE's recommendations. Please note that this price is valid until 31 December, 2015. The HEPA filter module costs £199.96.

Contact: Axminster Tools & Machinery
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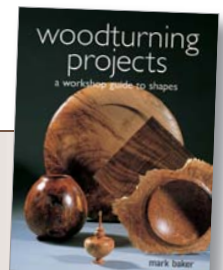
BEAUFORT INK PEN REFILLS

Made specially for the pen-turning community, these refills can be bought in either single or twin packs. The refills are high quality and keenly priced. Beaufort Ink's website has an automated discount facility, which tallies up irrespective of the mix of refills and/or refill packs being ordered, making them even better value for money. The refills are produced from Swiss-made components and ink, to exacting standards and tolerances and all feature stainless steel tips with tungsten carbide balls. All refills are filled to capacity with ink for maximum writing capacity and they all comply with the ISO standard relevant to each type.

Contact: Beaufort Ink
Tel: 01397 712 520
Web: www.beaufortink.co.uk

Book of the month – Woodturning Projects: A workshop guide to shapes by Mark Baker

Although not new, this book is unique in the fact that it is a step-by-step guide to both the art and the craft of woodturning. It is an exploration of turned shapes and the wide variety of timbers which can be used to create them. The making of 50 different pieces is described in detail, each in a different type of wood. There are working drawings for each project and clear colour photographs illustrate every stage of the process. Definitely a great book to have in your collection.



DETAILS

Prices: £16.99 (plus P&P)
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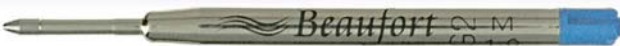
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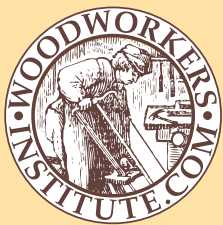
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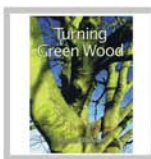
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Mike Mahoney – Nested Madrone Bowl Set

Mike Mahoney shares this nest of madrone bowls with us, which despite looking stunning, are a real challenge to turn



PHOTOGRAPH BY MIKE MAHONEY

Natural-edge madrone
(*Arbutus menziesii*)
burl set, 420mm dia.
× 320mm tall, 2011

I made this piece in 2011 and continue to make similar pieces for collectors. These turnings stem from my experience with the Kelton coring system plus a desire to make very technical work. It also helps to have access to madrone (*Arbutus menziesii*) burl. When people ask me what my favourite wood to turn is, madrone would always be high on my list. However, it does have some peculiar characteristics that may not be for everyone. Madrone has very high moisture content, which means that the piece is very prone

to cracking while it shrinks. It also oozes a pitch-like liquid that is nearly impossible to sand while wet. Therefore, all these pieces are made right off the tool with no sanding. In this lies the challenge. The bowls are 2mm thick. The piece needs to be the same wall thickness all the way through in order to control the drying process, which in turn helps to avoid cracks, plus the natural-edge adds more complexity to keeping a thin wall. My gouge work has to be perfect otherwise the bowls would explode or show blemishes

of bad tool work. I use a specially ground gouge with 1mm of bevel. When the piece dries, it warps and buckles unpredictably and creates a sculptural look. To finish, I soak the whole piece in polymerised oil for a few minutes and then let it dry for a week. I then spray a gloss lacquer over the piece, rub with '0000' steel wool, apply paste wax, then finally, buff with a paper towel. ●

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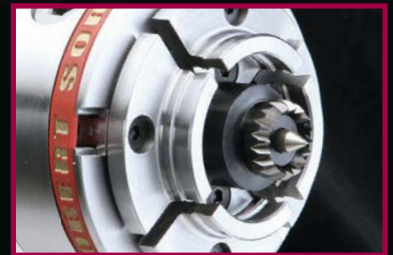
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