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April 2023

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1 OF 2

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Welcome

Described as 'The Finest Woodland Gardens in England', a recent trip took us to Leonardslee Lakes and Gardens in Horsham, West Sussex. Despite having heard many great things about this magnificent Grade I listed oasis, which was nearly lost forever, we'd not managed to visit up until this point, even though it's just on our doorstep.

I'd been told that during the winter months, the gardens become a peaceful wonderland with deciduous trees taking on a majestic appearance, and the famous Rock Garden, with its variety of conifers and foliage, turns into a sea of greens, blues and yellows.

Occupying some 240 acres, the stunning woodland gardens are set within a steep valley, which also comprises a number of wonderful lakes. In terms of notable species, head gardener Robin Loder created a collection of around 300 oak trees from all over the world, each of which boasts fantastic colour, particularly in autumn.

The gardens also house nine eucalyptus trees – which flower from July – the bark of which changes colour during the summer and autumn months. The silvery bark creates a great contrast between the blues of the leaves, and as September approaches, they begin to take on a unique rainbow effect before the bark turns blue in winter.

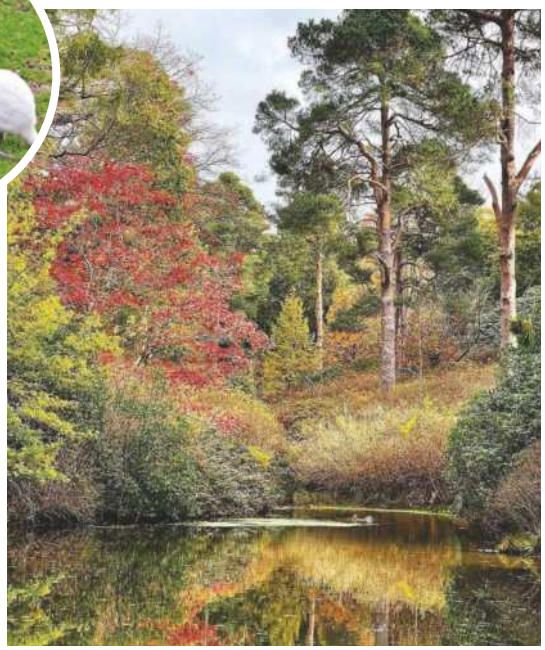
Nature thrives

Providing a peaceful and unspoiled environment where nature has been allowed to thrive, the estate is also home to an extraordinary range of wildlife including the now famous wallabies as well as an extensive deer park, with over 100 free-roaming Sika and Fallow species.

Wallabies – believed to be red-necked or the Bennett's variety from Tasmania – were introduced by naturalist Sir Edmund Loder in 1989, and the collection also includes several rare albinos. The wallabies are also free-roaming and we were lucky enough to visit just after breeding season, which provided the opportunity to catch a glimpse of several tiny joeys as they peeked out from the warm safety of their mother's pouches.

Beyond the Dolls' House

Once we'd taken in our fair share of flora and fauna and having enjoyed a wonderful world tour of tree species – including an exquisite cedar of Lebanon giant – we stopped for refreshment, and found ourselves drawn to signposts for the 'Beyond the Dolls' House exhibition'. The key here was in the title, and what greeted us behind those doors ended up surpassing all of our expectations.



Depicting an Edwardian estate and neighbouring villages, all at 1/

be seen acting out day-to-day activities. Exquisite in detail and accuracy, a 6ft tall person is recreated in 6in form.

Created by Helen Holland in 1998, the exhibition began with a small greenhouse and potting shed, but expanded to include both a carpenter's and wheelwright's workshop, along with a church, pub and school. The estate began to take shape, now including a mansion, entrance lodge, farm buildings, walled garden and stable yard, plus much more. A lovely surprise is that some of the figures are automated, so you can see them sawing timber, turning pieces on a lathe and forging ironwork, for example.

As a whole, the Leonardslee experience was thoroughly enjoyable – often mesmerising at times – and the more you stopped and looked, the more hidden gems revealed themselves to you. A return visit later this year is a must, as not only will the joeys have left their pouches, but the wonderful rhododendrons and azaleas will be in full bloom along with hundreds of other marvellous species.

Easter delights

Our home garden has also sprung into life, in all its colourful glory, with crocuses and snowdrops in abundance. Easter is here too, providing an opportunity to create some themed projects now that the workshop is once again habitable. Hopefully you're all feeling full of the joys of spring and looking forward to celebrating this special time of year.

Enjoy!

Email tegan.foley@dhpub.co.uk

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veritas

SEND IN YOUR TOP WORKSHOP HINT/TIP/POINTER OR PIECE OF ADVICE & YOU COULD BE IN WITH A CHANCE OF WINNING A **VERITAS APRON PLANE** – see page 61 for details

36 NEST FROM A CROTCH

Making use of storm-felled ash which was harvested then left to dry for a year, Andrew Hall turns a calabash-shaped vessel from crotch wood along with a lovely nest of natural-edge bowls

CHISEL RATING

PROJECT DIFFICULTY 1-5

Each project in this issue includes a difficulty rating from 1-5, so you can readily see whether or not a particular one is suited to you. While it's good to try and push yourself and develop skills, workshop safety should always be a main consideration and we urge you not to attempt a project/use specified tools or machinery, if you're unsure how to do so in a safe manner. A wide range of safety information is available online and a good place to start is **www.hse.gov.uk**

1 **Very easy**; only requires basic tools
2 **Simple to make**; only a few tools required
3 **Aimed at beginners-intermediate**; some specific equipment/tools required
4 **Aimed at intermediate-advanced**; sound woodworking knowledge required in addition to a wide range of hand/power tools
5 **Advanced skills/knowledge required**; a wide range of specialist equipment is needed to complete the project

WIN!

1 of 2 Robert Sorby Sandmasters – worth £64.62 each!

This handy on-lathe sanding solution from **Robert Sorby** takes your woodturning projects to a glass-like finish every time; there's two Sandmaster kits up for grabs – see **page 20** for details

Robert Sorby

Good luck!

The Woodworker & Good Woodworking
APRIL 2023

PROJECTS & TURNING

ON TEST

TECHNICAL

REGULARS

FEATURES

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DEVIL 7003	3kW	£69.98	£92.39	£83.98
DEVIL 7005	5kW	£97.99	£118.79	£117.59
DEVIL 7009	9kW	£149.98	£183.59	£179.98
DEVIL 7015	15kW	£219.98	£275.98	£263.98

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CIG81015	4.5 x 3 x 2.4	£279.00	£370.80	£334.80
CIG81216	4.9 x 3.7 x 2.5	£329.00	£430.80	£394.80
CIG81020	6.1 x 3 x 2.4	£349.00	£466.80	£418.80
CIG81220	6.1 x 3.7 x 2.5	£399.00	£514.80	£478.80
CIG81224	7.3 x 3.7 x 2.5	£499.00	£646.80	£598.80
CIG1432	9.7x4.3x3.65	£1099.00	–	£1318.80
CIG1640	12x4.9x4.3	£2899.00	£3838.80	£3478.80

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock
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CBS1-5B

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

CWVE2

CDE7B

FROM ONLY £99.95 exc.VAT
£119.94 inc.VAT

- Powerful 1100W motor
- 50 litre bag capacity
- Flow rate of 450M3/h

Model	Motor	Flow Rate	Bag Cap.	exc.VAT	inc.VAT
CWVE2	1100W	183 M3/h	50Ltrs	£99.95	£119.94
CDE35B	750W	450 M3/h	56Ltrs	£199.98	£239.98
CDE7B	750W	850 M3/h	114Ltrs	£219.98	£263.98

Clarke 8" TABLE SAW

CTS800C

NEW

- 500W motor
- 200mm Blade Dia.

£89.98 exc.VAT
£107.98 inc.VAT

Clarke PLUNGE SAWS

CPS160

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£83.98 inc.VAT

INC. 2X 700mm GUIDE RAILS

Model	Motor	exc.VAT	inc.VAT
CPS85	550W	£69.98	£83.98
CPS160	1200W	£129.98	£155.98

Clarke BELT SANDERS

CBS2

Makita

ABRASIVE SANDING BELTS IN STOCK

- Ideal for surface removal, sanding and finishing

FROM ONLY £44.99 exc.VAT
£53.99 inc.VAT

* WAS £125.99 inc.VAT

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Clarke CBS2	1200W	480	£94.99	£113.99
Makita 9911	650W	75-270	£99.98	£119.98

Clarke 4" BELT/ 8" DISC SANDER

- Includes two tables
- 550W 230V motor

PRICE CUT £205.00 exc.VAT
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CS48

Clarke TABLE SAW WITH SLIDING CARRIAGE

CONTRACTOR

PRICE CUT £339.00 exc.VAT
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CCS12B

230 VOLT

NEW

- A sturdy, powerful saw, manufactured from a durable steel body with tough powder coated finish
- Max Depth of Cut 83mm
- BladeDia 315mm

Clarke CIRCULAR SAWS

- Great range of DIY and professional saws
- Ideal for bevel cutting (0-45°)

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NEW

AVAILABLE IN 230 & 110 VOLT

*Includes laser guide

CON185B

Model	Motor	Max Cut 90/45 (mm)	exc.VAT	inc.VAT
CCS185C	1200W	65/44	£54.99	£65.99
CON185B*	1600W	63/43	£69.98	£83.98

Clarke PALM SANDERS

- Ideal for detail sanding of corners & hard to reach areas

CPS125

PRICE CUT £22.99 exc.VAT
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WAS £28.79 inc.VAT

INC DUST EXTRACTION

Clarke 6" BELT / 9" DISC SANDER

CS6-9D

- 1100W motor
- Use vertically or horizontally

DUST PORT

£349.00 exc.VAT
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BELT/DISC TABLE ADJUSTS 0-45°

INCLUDES STAND

Clarke 18V CORDLESS LI-ION STAPLE / NAIL GUN

- Includes 300 nails and 400 staples
- 1x 2Ah 18V Li-Ion battery

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1 x 2Ah

Powered by Li-Ion

CONSN18LIC

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£155.98 inc.VAT

ELECTRIC AND CORDLESS MODELS IN STOCK

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CONTRACTOR

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Powered by Li-Ion

4Ah Li-Ion

CON180LI

Model	Volts	Batteries	exc.VAT	inc.VAT
CON18LIC	18V	2x 2.0Ah Li-Ion	£99.98	£119.98

Clarke SHEET SANDERS

CON320

- Ergonomic design for optimum comfort

VARIABLE SPEED

FROM ONLY £26.99 exc.VAT
£32.39 inc.VAT

Model	Sheet Size	Motor	exc.VAT	inc.VAT
COS210	190x90mm	200W	£26.99	£32.39
CON320	230x115mm	320W	£39.98	£47.98

Clarke 3-IN-1 MULTI SANDER

CMS200

PRICE CUT £47.99 exc.VAT
£57.59 inc.VAT
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1/3 SHEET SANDER

DISC SANDER

Clarke DISC SANDER (305MM)

- Powerful, bench mounted
- 900W
- Dust extraction port

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CDS300B

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- * SS = Stainless Steel

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CVAC20P	1250W	17/13 ltr	£62.99	£77.99	£75.59
CVAC20PR2	1400W	14/12 ltr	£72.99	£95.98	£87.59
CVAC20SS*	1400W	17/13 ltr	£72.99	£93.59	£87.59
CVAC30SSR*	1400W	24/22 ltr	£109.98	£135.59	£131.98

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B = Bench mounted
F = Floor standing

CDP102B

model	Motor (W) Speeds	exc.VAT	WAS inc.VAT	inc.VAT
CDP5EB	350 / 5	£99.95		£119.94
CDP102B	350 / 5	£115.95		£139.14
CDP152B	450 / 12	£209.98		£251.98
CDP202B	450 / 16	£269.00		£322.80
CDP352F	550 / 16	£339.00	£418.80	£406.80
CDP452B	550 / 16	£339.00	£418.80	£406.80
CDP502F	1100 / 12	£779.00	£946.80	£934.80

Clarke POWER PLANERS

FROM ONLY £36.99 exc.VAT
£44.39 inc.VAT

CON950

Model	Width of Cut	Motor	exc.VAT	inc.VAT
CEP450	60mm	450W	£36.99	£44.39
CEP720B	82mm	720W	£44.99	£53.99
CON950	110mm	950W	£74.99	£89.99

Clarke RANDOM ORBITAL SANDER

- Adjustable front handle improves control
- 7000-14000rpm

CROS3

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

£39.98 exc.VAT
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280W

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COBS1

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CPT800

- Ideal for DIY & Hobby use
- Dual purpose, for both finishing & sizing of timber

FROM ONLY £249.98 exc.VAT
£299.98 inc.VAT

Model	Planing Width	Max Thick Capacity	exc.VAT	inc.VAT
CPT600	6" (152mm)	120mm	£249.98	£299.98
CPT800	8" (204mm)	120mm	£299.98	£359.98
CPT1000	10" (254mm)	120mm	£399.00	£478.80

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WAS £274.80 inc.VAT

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BENCH MOUNTED

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CWL1000CF £469.00 exc.VAT £562.80 inc.VAT

INCLUDES COPY FUNCTION

INCLUDES STAND

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CBS205 £129.98 exc.VAT £155.98 inc.VAT

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REMOVABLE DUST TRAY

CBS225

Clarke PROFESSIONAL BANDSAWS

Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table

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MAGNIFIED MITRE GUIDE

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DRIVE-BELT TENSIONING

SOLID GROUND CAST IRON TABLE

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MODELS ALSO FEATURE:

MULTI-STEP DUST EXTRACTION OUTLET

FLEXIBLE LED WORKLIGHT

REMOVABLE DUST TRAY

BLADE TENSIONING CONTROL

* WAS £717.60 inc.VAT

Model	Throat Depth	Max Cut 90°	Max Cut 45°	exc.VAT	inc.VAT
CBS250C	245mm/10"	115mm	65mm	£249.98	£299.98
CBS300*	305mm/12"	165mm	115mm	£579.00	£694.80
CBS350	340mm/14"	225mm	160mm	£699.00	£838.80

TURBO AIR COMPRESSORS

airmaster

• Superb range ideal for hobby & semi-professional use

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TIGER 16/550

* WAS £155.98 inc.VAT # WAS £251.98 inc.VAT ‡ WAS £334.80 inc.VAT ♦ WAS £419.98 inc.VAT

Model	Motor	CFM	Tank	exc.VAT	inc.VAT
Tiger 8/260*	2HP	7	24ltr	£119.98	£143.98
Tiger 11/550#	2.5HP	9.3	50ltr	£179.98	£215.98
Tiger 16/550‡	3HP	14.5	50ltr	£249.00	£298.80
Tiger 16/1050♦	3HP	14.5	100ltr	£309.00	£370.80

Clarke 13" MINI WOOD LATHE

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• 325mm distance between centres • 200mm max. turning capacity (dia) • 0.2HP motor

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£229.98 exc.VAT £275.96 inc.VAT

NEW

• Ideal for the serious DIY woodworker, craftsman & woodworking enthusiast. • Max. chuck capacity: 13mm • Max. mortice chisel stroke: 76mm

CBM1C

230 VOLT

Clarke ROUTERS

CONTRACTOR

• Powerful heavy duty machines ideal for trade and DIY use

FROM ONLY £49.98 exc.VAT £59.98 inc.VAT

CR4

* WAS £119.98 inc.VAT

Model	Motor (W)	Plunge (mm)	exc.VAT	inc.VAT
CR1200	1200	0-55	£49.98	£59.98
*CR4	2000	0-66	£97.99	£117.59

Clarke GRINDERS & STANDS

• Stands come complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

FROM ONLY £66.99 exc.VAT £80.39 inc.VAT

STANDS FROM ONLY £75.59 INC.VAT

* WAS £91.19 inc.VAT # WAS £125.99 inc.VAT

Model	Duty	Wheel Dia.	exc.VAT	inc.VAT
CBG6RZ	PRO	150mm	£66.99	£80.39
CBG6250LW	HD	150mm	£69.98	£83.98
CBG6250L*	HD	150mm	£72.99	£87.59
CBG6SB	PRO	150mm	£94.99	£113.99
CBG8370LW#	HD	200mm	£99.98	£119.98

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WV7

Model	Mounting	Jaw (Width/Opening Depth) mm	exc. VAT	inc. VAT
Clarke CHT152	Bolted	150/152/61	£16.99	£20.39
Record TV75B	Clamped	75/50/32	£25.99	£31.19
Clarke WV7	Bolted	180/205/78	£39.98	£47.98

Clarke JIGSAWS

CONTRACTOR

CON750

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Model	Power (W)	Depth of Cut (Wood/ Steel)	exc. VAT	inc. VAT
CJS400	400W	55/ - mm	£19.98	£23.98
CON750	750W	80/10mm	£31.99	£38.39
Bosch PST700E	500W	70/4mm	£56.99	£68.39

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BEST SELLER

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Model	Motor	Speed RPM	exc.VAT	inc.VAT
CSS400D	120W	400-1600	£99.98	£119.98
CSS16VB	90W	550-1600	£129.98	£155.98
CSS400C	90W	550-1600	£157.99	£189.59

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Model	Motor	Belt Size (mm)	exc.VAT	inc.VAT
CPF13	400W/230V	13x457	£49.98	£59.98
KA900E*	350W/230V	13x455	£63.95	£76.74

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CMS10S2B

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Model	Blade Dia/Bore (mm)	Max Cut Depth/ Cross	exc.VAT	inc.VAT
CMS210B*	210	60/120	£89.98	£107.98
CMS10S2B#	255/3	90/340	£174.99	£209.99

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CAMBRIDGE 181-183 Histon Road, Cambridge. CB4 3HL	01223 322675	**LEEDS** 227-229 Kirkstall Rd. LS4 2AS	0113 231 0400	**SHEFFIELD** 453 London Rd. Heeley. S2 4HJ	0114 258 0831
CARDIFF 44-46 City Rd. CF24 3DN	029 2046 5424	**LEICESTER** 69 Melton Rd. LE4 6PN	0116 261 0688	**SIDCUP** 13 Blackfen Parade, Blackfen Rd	0208 3042069
CARLISLE 85 London Rd. CA1 2LG	01228 591666	**LINCOLN** Unit 5. The Pelham Centre. LN5 8HG	01522 543 036	**SOUTHAMPTON** 516-518 Portswood Rd.	023 8055 7788
CHELTENHAM 84 Fairview Road. GL52 2EH	01242 514 402	**LIVERPOOL** 80-88 London Rd. L3 5NF	0151 709 4484	**SOUTHEND** 1139-1141 London Rd. Leigh on Sea	01702 483 742
CHESTER 43-45 St. James Street. CH1 3EY	01244 311258	**LONDON CATFORD** 289/291 Southend Lane SE6 3RS	0208 695 5684	**STOKE-ON-TRENT** 382-396 Waterloo Rd. Hanley	01782 287321
COLCHESTER 4 North Station Rd. CO1 1RE	01206 762831	**LONDON** 6 Kendal Parade, Edmonton N18	020 8803 0861	**SUNDERLAND** 13-15 Ryhope Rd. Grangetown	0191 510 8773
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CROYDON 423-427 Brighton Rd, Sth Croydon	020 8763 0640	**LUTON** Unit 1, 326 Dunstable Rd, Luton LU4 8JS	01582 728 063	**SWINDON** 21 Victoria Rd. SN1 3AW	01793 491717
DARLINGTON 214 Northgate. DL1 1RB	01325 380 841	**MAIDSTONE** 57 Upper Stone St. ME15 6HE	01622 769 572	**TWICKENHAM** 83-85 Heath Rd.TW1 4AW	020 8892 9117
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DERBY Derwent St. DE1 2ED	01332 290 931	**MANCHESTER CENTRAL** 209 Bury New Road M8 8DU	0161 241 1851	**WIGAN** 2 Harrison Street, WN5 9AU	01942 323 785
DONCASTER Wheatley Hall Road	01302 245 999	**MANCHESTER OPENSHAW** Unit 5, Tower Mill, Ashton Old Rd	0161 223 8376	**WOLVERHAMPTON** Parkfield Rd. Bilston	01902 494186
DUNDEE 24-26 Trades Lane. DD1 3ET	01382 225 140	**MANSFIELD** 169 Chesterfield Rd. South	01623 622160	**WORCESTER** 48a Upper Tything. WR1 1JZ	01905 723451
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Repeat Edge sharpening system from SHENTON WOODCRAFT

Nigel Shenton first started his working life as an apprentice patternmaker, in both wood and metal. Despite moving into the design and development of high volume metal products, Nigel has always remained a keen woodworker.

Over the last few years and through developing his turning skills, Nigel found himself becoming increasingly frustrated when it came to sharpening turning chisels. As any woodturner knows, the range of tool sizes and shapes available is far ranging, so constant adjustment of sharpening equipment and technique is therefore necessary when using such tools. Many turners don't like sharpening due to this complication and the task will often be put off until it becomes absolutely necessary.

Nigel looked at almost every system available and found the majority required much effort to set up, but more importantly, re-setting up to repeat the grind or edge exactly as it was before. As a result of this frustration, Nigel decided to design his own, drawing on previous experience – which came in very handy – and it wasn't long before he had prototypes made and ready for testing.

Nigel discovered that the more he used his new system, the more he realised just how much easier it was to keep changing tools and touching them up. Believing that if he thought it worked well and saved time, then others would too, according to Nigel, it almost makes sharpening a pleasure!

Following a period of testing and design tweaking, the final design was finalised, a patent applied for, a manufacturer found, and stock delivered.

The Repeat Edge sharpening system uses a very simple design and the main difference to others available is that once you've set the perfect grind/angle, a piece of scrap wood is then cut and dropped into the jig to set that very position.

The piece of wood can then be marked to reflect the tool – for example, '25mm spindle roughing gouge' – so it can be easily identified later. One customer has even colour-coded his chisels and scrap wood. This makes returning to the grinding wheel very easy: simply select the piece of scrap wood assigned to that particular tool, drop it into the jig, push the jig in until it stops on the scrap wood, tighten the jig, start the machine, and begin sharpening.

The tool goes into exactly the same place as before so just a couple of light touches are all that's required on the wheel to restore the edge. There's no heat build up and very little wear on the wheel or tool, so tool life is therefore prolonged and the process very quick.

Included in the kit:

- Two baseplates – one for each wheel of a double-ended bench grinder. The jig will work with most 150mm and 200mm grinding machines.
- A main arm that'll sharpen most bowl, spindle, spindle roughing gouges and parting tools.
- A skew attachment that secures to the end of the arm and allows you to sharpen skew chisels.
- A side grind or fingernail attachment that's located in the socket of the adjusting arm and rocked from side to side to produce a side grind in the usual way.
- The position of these attachments can be set with pieces of scrap wood, so the position can be kept exactly the same.

Priced at £115 (plus delivery); see **www.shentonwoodcraft.co.uk** for further details.

Timber Suppliers Directory – April 2023

Adhectic Ltd (Berkshire)
Tel: 01235 5
Web: www.adhectic.co.uk

A Harrison (Northants)
Tel: 01536 725 192
Web: www.aharrisonwoodturning.co.uk

Bennetts Timber (Lincolnshire)
Tel: 01472 350 151
Web: www.bennettstimber.co.uk

Black Isle Woodturning (Scotland)
Tel: 07842 189 743
Web: www.blackislewoodturning.com

Brodies Timber (Perthshire)
Tel: 01350 727 723
Web: www.brodiestimber.co.uk

Brooks Brothers Timber (Essex)
Tel: 01621 877 400
Web: www.brookstimber.co.uk

C&G Barrett Ltd, Cilfiegan Sawmill (South Wales)
Tel: 01291 672 805
Web: www.cilfiegansawmill.com

Clive Walker Timber Ltd (West Yorkshire)
Tel: 01132 704 928
Web: www.clivewalkertimber.co.uk

D Emmerson Timber (Lincolnshire)
Tel: 01507 524 728
Web: www.emmersontimber.co.uk

Earlswood Interiors (West Midlands)
Tel: 01564 703 706
Web: www.earlswoodinteriors.co.uk

English Woodlands Timber (West Sussex)
Tel: 01730 816 941
Web: www.englishwoodlandstimber.co.uk

Exotic Hardwoods (Kent)
Tel: 01732 355 626
Web: www.exotichardwoods.co.uk

EO Burton, Thorndon Sawmills (Essex)
Tel: 01277 260 810
Web: www.eoburton.com

Eynsham Park Sawmill (Oxfordshire)
Tel: 01993 881 391
Web: www.eynshamparksawmill.co.uk

FH Ives (Essex)
Tel: 01268 732 373
Web: www.fhives.com

Fulham Timber (London)
Tel: 0208 685 5340
Web: www.fulhamtimber.co.uk

G&S Specialist Timber (Cumbria)
Tel: 01768 891 445
Web: www.toolsandtimber.co.uk

Good Timber (Northamptonshire)
Tel: 01327 344 550
Web: www.goodtimber.com

The Hardwood off cut shop (Essex)
The Wood Yard, Canterbury Tye Farm, Doddinghurst road, Brentwood, Essex, CM15 0SD
Tel: 01277 205990
Web: www.hardwoodoffcuts.co.uk
sales@hardwoodoffcuts.co.uk

Horndon Timber Products
Unit 8-9 Orsett Industrial Park
Stanford Road, Orsett, Grays
Essex. RM16 3BX
Tel: 01375 679 999
Web: sales@horndontimber.co.uk

Interesting Timbers (Somerset)
Tel: 01761 241 333
Web: www.interestingtimbers.co.uk

ISCA Woodcrafts (South Wales)
Tel: 01633 810 148/07854 349 045
Web: www.iscawoodcrafts.co.uk

Joyce Timber (London)
Tel: 0208 883 1610
Web: www.joycetimber.co.uk

Lincolnshire Woodcraft (Lincolnshire)
Tel: 01780 757 825
Web: www.lincolnshirewoodcraft.co.uk

Nottage Timber (South Wales)
Tel: 01656 745 959
Web: www.nottagetimber.co.uk

Ockenden Timber (Powys)
Tel: 01588 620 884
Web: www.ockenden-timber.co.uk

Olivers Woodturning (Kent)
Tel: 01622 370 280
Web: www.oliverswoodturning.co.uk

Oxford Wood Recycling (Oxfordshire)
Tel: 01235 861 228
Web: www.owr.org.uk

Stiles & Bates (Kent)
Tel: 01304 366 360
Web: www.stilesandbates.co.uk

Scadding Timber (Avon)
Tel: 01179 556 032
Web: www.scadding-son-ltd.co.uk

Scawton Sawmill (North Yorkshire)
Tel: 01845 597 733
Web: www.scawtonsawmill.co.uk

S.L. Hardwoods (Croydon)
Tel: 020 3051 4794
Web: www.slhardwoods.co.uk

St. Andrews Timber (Scotland)
Tel: 01316 611 333
Web: www.standrewstimbersupplies.co.uk

Surrey Timbers Ltd (Guildford)
Tel: 01483 457 826
Web: www.surreytimbers.co.uk

Sykes Timber (Warwickshire)
Tel: 01827 718 951
Web: www.sykestimber.co.uk

The Timber Mill (Cornwall)
Tel: 07966 396 419
Web: www.thetimbermill.com

The Wood Recycling Store (East Sussex)
Tel: 01273 570 500
Web: www.woodrecycling.org.uk

Thorogood Timber Ltd (Essex)
Tel: 01206 233 100
Web: www.thorogood.co.uk

Timberman (Carmarthenshire)
Tel: 01267 232 621
Web: www.timberman.co.uk

Tree Station (Lancashire)
Tel: 01612 313 333
Web: www.treestation.co.uk

UK Timber Ltd (Northamptonshire)
Tel: 01536 267 107
Web: www.uk-timber.co.uk

Waterloo Timber Ltd (Lancashire)
Tel: 01200 423 263
Web: No website

Wenban Smith (West Sussex)
Tel: 01903 230 311
Web: www.wenbans.com

Wentwood Timber Centre (South Wales)
Tel: 01633 400 720
Web: www.wentwoodtimbercentre.co.uk

W L West & Sons Ltd (Surrey)
Tel: 01798 861 611
Web: www.wlwest.co.uk

Yandle & Sons Ltd (Somerset)
Tel: 01935 822 207
Web: www.yandles.co.uk

New from **FESTOOL – TSV 60 K plunge-cut saw** with scoring function

The TSV 60 K plunge-cut saw with scoring function: splinter-free sawing like never before

Festool has been synonymous with delivering trustworthy quality and absolute precision since the introduction of its first circular saws in 1962, followed by plunge-cut saws in 1980, and is continuing this tradition with the launch of a new model, which benefits from scoring function. With a 60mm cutting depth, the TSV 60 K produces splinter-free sawing on both sides, from the very first cut. The integrated KickbackStop reduces the risk of injury and damage to the workpiece during kickback, and thanks to a diverse range of system accessories, it's always mobile, precise and to exact dimensions. With the new TSV 60 K, workshop-quality results can be replicated on the construction site, as with a stationary machine.

Festool has been well renowned for its circular saws for many decades, as Boris Seyfried, Festool Product Manager for Sawing, explains: "As early as the 1960s, Festool brought the world's first portable circular saw with guide rail onto the market, then launched its first plunge-cut saw at the start of the 1980s. With our new saw models, we're always aiming to raise the bar, and from May 2023, we're doing it once more with the TSV 60 K plunge-cut saw, which also features with scoring function."

Splinter-free sawing on both sides – like never before

Being able to deliver splinter-free sawing on both sides, from the first cut, makes it extremely efficient as the cut edges are immediately ready for further processing. "We've integrated a scorer into the new TSV; a never-before-seen innovation for hand-held plunge-cut saws. We constructed the scorer unit to have track and depth adjustment, which guarantees exact adjustment options and, when combined with the diamond scoring saw blade, long-term perfect cut quality. This is true even for efficient, high-quality panel cutting," adds Boris.

Perfect panel cutting – Now available anywhere on the construction site

"This is particularly practical for day-to-day work – now even large panels can be precisely cut without splinters; not just in the workshop but anywhere on the construction site. With our numerous system accessories, it's like cutting with a stationary machine – a facility that's never been seen before in this form – mobile and simultaneously precise, splinter-free sawing to exact dimensions." Depending on application, the scorer can be turned on or off as required. Perfect results are important for panel cutting, and that's exactly why the new plunge-cut saw with scoring function can be used with a guide rail – exactly as you'd expect from Festool. Thanks to the guide rails being fixed with fastening clamps and the tool-free adjustable guide jaws, the TSV 60 K runs on the guide rail without any play whatsoever, ensuring high-quality results.

Greater safety when sawing – thanks to KickbackStop

The innovative and unique KickbackStop function with scoring function doesn't just protect the workpiece, but also minimises the risk of injury. The new TSV 60 K is safe and highly precise, offering excellent, splinter-free results. In the event of a kickback, the KickbackStop is triggered by the saw blade jamming during sawing or plunge-cutting into the

The scoring saw blade on the TSV 60 K can be precisely adjusted to deliver a splinter-free cutting edge

Thanks to the guide rails being fixed with fastening clamps and the tool-free adjustable guide jaws, the TSV 60 K runs on the guide rail without any play whatsoever

workpiece and stops the saw blade faster than the blink of an eye. The saw is designed to recognise a kickback and shuts down the motor within a fraction of a second. Once the KickbackStop has been triggered, the saw is ready for immediate use once again without having to factor in any replacements or additional costs.

The integrated KickbackStop reduces the risk of injury and damage to the workpiece caused by kickback during sawing or plunge-cutting. Once the saw has been triggered, it's ready for immediate use without having to replace any parts

Truly versatile

"With the new TSV 60 K, we've created our most versatile plunge-cut saw to date. Thanks to its 60mm cutting depth and swivelling scorer unit, even mitre cuts up to 45° in combination with a guide rail are possible," Boris continues.

The entire accessory system around the TSV 60 K not only demonstrates its versatility for day-to-day use, but what's particularly practical is the fact it can be combined with all cross-cutting guide rails, so it's incredibly easy to make reproducible, precise and clean cross cuts even 'on a small scale'.

The brushless EC-TEC motor – virtually maintenance-free and extremely powerful – guarantees consistent high cutting power. The high-speed 6,800rpm motor allows work to progress effortlessly while requiring less force

When developing the new TSV 60 K, Festool has considered many additional details such as the simple FastFix saw blade replacement, viewing window, speed control, exact depth setting with dual indicator, and fine adjustment.

Robust, powerful & extremely efficient

Festool's latest-generation brushless EC-TEC motor makes the saw virtually maintenance-free, not to mention powerful. The maximum speed of 6,800rpm ensures ideal machining, an effortless feed rate and, as a result, optimum cutting quality. This means that the new plunge-cut saw is robust and, in combination with the comprehensive saw system, sophisticated down to the very last detail. It handles both precise cutting in solid wood and efficient panel cutting with ease – and splinter-free on both sides. Say goodbye to time-consuming reworking.

Uncompromising performance

The new TSV 60 K is completely covered by Festool Service, offering peace of mind for your day-to-day work. This includes repair orders, warranty claims, protection against theft and spare part availability. Available to purchase via specialist dealers from May 2023, visit **www.festool.co.uk** for more information on this and other Festool products.

Legendary workwear brand **CARHARTT** focuses on **protecting UK tradespeople**

Carhartt, the authentic workwear brand founded back in 1889, in Detroit, Michigan, is focusing on helping and protecting hard-working tradespeople in the UK. For over 130 years, the company has been known for its rugged construction, innovative designs, exceptional quality standards, durability and comfort, and has become legendary among skilled tradespeople.

The Carhartt workwear ranges from tough and comfortable work trousers, rugged and durable work jackets, fast drying and cooling work T-shirts, in addition to certified safety shoes and work boots. The company also designs workwear specifically for women. These designs fit and protect the body better and are therefore much safer. The rugged women's workwear collection is designed to ensure that the modern woman is prepared for any job, whatever the weather.

"UK tradespeople can rely on Carhartt to protect them while looking great out on site," says Nick Poulson, UK Sales Manager. "Designed specifically for the tough construction site, our workwear is strong enough to get you through any working day, no matter how tough it is."

The Carhartt legacy brand was established in 1889 when Hamilton Carhartt & Company was founded by its namesake – affectionately known as 'Ham' – and began producing overalls with two sewing machines and a half-horsepower electric motor in a small Detroit loft. Under the motto, 'Honest value for an honest dollar', the iconic Carhartt bib overall was created and rapidly evolved into the standard for quality workwear.

Carhartt set a new standard of performance and continues to meet the evolving needs of hard-working people by weather-proofing its product line to provide the 24/7, year-round solutions they need in the rugged outdoors. The increased focus in the UK includes the opening of a head office in Newark, Nottinghamshire with a team dedicated to growing the number of stockists across the country.

For more information on the Carhartt range, see **www.carhartt.com**.

New **V33 woodstain** guarantees 12-year protection for **outdoor cladding, window frames & doors**

A new woodstain from V33 is set to revolutionise the protection of your home exterior woodwork. New and unique, V33 Extreme Woodstain is guaranteed for an unrivalled 12 years, allowing you to save time and money on protecting outdoor cladding, window frames, doors, gates and fences. This is ideal for anyone wanting to make sure woodwork is shielded from the worst weather conditions for as long as possible while also being attractively enhanced.

It's vital that external woodwork is waterproofed, and in addition, the timber should be shielded from the effects of repeated exposure to sunlight, which can damage it. Applying a decent woodstain is the effective way of creating a barrier, which protects the wood from water and the sun. If you also have a certain colour tone in mind for external woodwork, then woodstain can help you achieve it.

The high-performance formulation of V33's Extreme Woodstain, incorporating patented 'Aquaresist' technology, ensures its water-proofing effect and resistance to bad weather conditions. A high concentration of UV filters and a reinforced resin formula means that two layers of V33 Extreme Woodstain correspond to three layers of other, standard equivalents. It also has high resistance to temperature variations of between -40OC and +60OC. V33 Extreme Woodstain is suitable for most types of European and exotic woods, new or old, and can be applied on top of most old woodstains.

With its natural, translucent finish, V33 Extreme Woodstain enhances the appearance of exterior woodwork to a professional finish, but is easy enough for the novice DIYer to use. It's available from B&Q in a choice of colours including Clear, Light Oak, Dark Oak, Mahogany and Teak. Priced at £24 for 0.75l and £41 for 2.5l respectively, the larger size affords approximately 15sq.m of coverage in two coats. For further information on this and other products from V33, visit **www.v33.co.uk**.

ISOTUNES launches upgraded **FREE** model

ISOtunes recently announced the launch of FREE 2.0 – an upgraded version of the popular FREE model – which was originally launched in 2019. The new FREE 2.0 is ideal for those who work with power tools and equipment – hobbyists and professionals alike.

ISOtunes FREE 2.0 is an all-around improvement to the original model, offering enhanced connection to Bluetooth devices and a higher noise reduction rating – NRR – all without the hassle of cords or tangled wires. Three different product variations are available: IT-73 – Black, Non Certified; IT-74 – Green & Black, Non Certified; and IT-72 – Yellow, Certified.

FREE 2.0 filters damaging noise levels while still allowing the user to listen to music and take phone calls without needing to remove the earbuds. The true wireless design offers peace of mind as there's no wires or cords to potentially get caught on equipment. The FREE 2.0 model delivers a 25dB NRR, Bluetooth 5.2 connectivity, and a rechargeable charging case that provides longer battery life than many hearing protection solutions on the market.

The upgraded Bluetooth 5.2 capabilities offer a better connection to Bluetooth devices with up to seven hours' battery life. The included carrying case offers 14 additional hours of battery life for those on the go. For a perfect fit, both foam and double flange ear tips are included with each purchase.

The earbuds have an IP45 rating for dust, sweat and water resistance – ideal for all types of hobbyists and trade professionals. An upgraded 25dB NRR provides increased hearing protection regardless of environment. Each purchase includes three pairs of foam eartips and three pairs of double flange eartips in sizes from small to large, a USB-C charging cable and chargeable carrying case.

Priced at £109.99, visit **www.isotunes.com** to find out more.

'CONNECT' with potential buyers & showcase your woodturning skills

The Worshipful Company of Turners' biennial turning competitions are well established in the City and Craft calendar. For professional woodturners looking to get their name known, the next event can be used to 'CONNECT' them with a London audience and potential buyers.

Fresh opportunities for 2023 include a new category – 'Master's Exhibition' – which is by invitation only. Through the theme, 'Coronation', it will showcase the finest elite woodturning talent in the UK. Curators from the V&A Museum in London will be making a 'choice' award from this collection.

Try something new by merging pewter, leather or both into your woodturning. The 'Master's Mixed Media Competition' not only gives turners the chance to mix wood with pewter and leather, but also to work on a project and 'CONNECT' with other skilled craftspeople. If you'd like to work with a pewterer or leatherworker, email Rebecca Baker – **assistantclerk@turnersco.com** – who'll be able to make enquiries on your behalf through the various Livery Companies.

There's also an opportunity to sell your work to those passionate about shopping for beautiful, unique handmade turned pieces. At the competitions, the Worshipful Company of Turners gives potential buyers the chance to 'CONNECT' with individual makers, which can even lead to the commissioning of a special piece.

Details of the 10 competitions can be found at **www.turnersco.com** and online entry forms are now available. Please ensure to submit entry forms before Monday 18 September 2023 as any received after this date won't be accepted. No entry will be accepted without prior registration.

Key dates

- **Entry deadline:** Monday 18 September – entry forms must be received by the Assistant Clerk by close of business. If you submit an entry after this date, it can't be guaranteed that your piece(s) will be entered into the competitions.
- **Delivery of pieces:** Monday 2 October – items being delivered by post or courier should arrive at the Company offices in Saddlers' Hall, no later than 5pm on this date. Please refer to General Conditions of 2023 entry for further details.
- **Judging:** Wednesday 18 October – all entries must be at Pewterers' Hall by noon. Please don't bring anything in person without having previously submitted an entry form before 18 September. No pieces will be entered into the competitions without an entry form provided before this date. Private view and evening reception – by invitation only – to follow.
- **Public viewing & prize giving:** Thursday 19 October – 10am–4pm – an opportunity for the public to see and buy. Prize giving ceremony to follow at 4.30pm. Entries which haven't been sold may be collected from Pewterers' Hall after the ceremony.

When: Judging on 18 October – private view in evening; public viewing on Thursday 19 October
Where: Pewterers' Hall, Oak Lane, London EC2V 7DE

CLARKE CMS216S SLIDING MITRE SAW

Although an enthusiastic hand saw user, when it comes to certain jobs, **Jonathan Salisbury** enjoys the convenience of something powered. **Machine Mart** sent him the **Clarke CMS216S sliding mitre saw** to look at

In 2021 I reviewed a high-end compound mitre saw designed for continual, professional use. It was excellent, but if you're only likely to use one occasionally, or need to buy something to make a big, one-off project more manageable, it's reasonable to assume you'll more likely be looking at the CMS216S end of the market.

A few years ago, 'cheap-and-cheerful' machines really weren't worth looking at; they often gave a poor-quality finish and cost-cutting too frequently compromised the usability, and sometimes safety, of certain models. So what if it's only used a couple of times and then disposed of? Despite today's environmental awareness, this attitude continues to generate considerable, unnecessary waste. That's not my approach at all and I'm still wary of anything that seems to be a bargain.

First look

Straight out of the box, I was impressed that there were no obvious tell-tale signs of this being a budget machine; look more closely and you might notice the slight imperfections to the castings under the paint, hollow handles on the fence, a thin tab to hold the cable in place, or the slightly wobbly clamp; but the chances are you won't.

One practical issue is that the bars along which the head unit slides extend a considerable distance behind the table. My garage workshop bench is just about deep enough, but there wasn't enough room at the time to set it up. At just under 12kg, it's easy to pick up and take to wherever's convenient, which, in my case was onto the decking at the back of the house, fastened to my old folding workbench with four screws to hold it securely in place.

All the expected basic safety features are present: a non-locking, handle-mounted switch with thumb release buttons; a rotating blade guard; and signs warning of the blade's finger-removing potential.

In use

The saw doesn't require any assembly, unless you want to change the factory-fitted 216mm, tungsten-carbide-tipped, 24-tooth blade; this seemed a little on the coarse side, although most building tasks require speed, and a rough finish isn't seen as a problem if the job is hidden away. To check this, I used a piece of softwood decking board for the first test – a standard sliding cut.

Start-up is brisk and the saw pulled back smoothly with just enough resistance to balance the force I applied. Dropping the saw down to the cut position was equally smooth and positive, and the push forward gave a quick and easy cut. However, there was quite a lot of splintering at the back edge. A second cut with slower feed made

Space is required in order to use the mitre saw

Standard locks for saw head...

... and slide

The handle allows left- and right-handed use

Although simple, the clamp is effective in use

The saw didn't quite make it through

Blade height adjustment

The 24-tooth blade produces a rough finish

The blade attachment screw gets stuck

little difference, so I decided to try the 48-tooth blade that's also supplied.

All change!

Changing the blade is no different from most other mitre saws: power off; raise the saw to give better access; rotate the guard to access the plate covering the screw; loosen this with a No.2 crosshead screwdriver; rotate to expose the screw... but the head of the bolt that holds the guard in place prevents it rising far enough to clear the screw, which had to be wiggled out at an angle. The screw has a left-hand thread, as expected – and required. Once it had been removed, the guard then moved further out of the way, making it much easier to install the finer blade and tighten the screw. This wasn't a one-off – it happened again when I refitted the original blade, then later when changing back to the 48-tooth.

The 48-tooth blade yielded a much superior finish, by the way; one that requires very little further work if the edge was on show.

Practicality

The saw's stated maximum cut capacity is 340 × 65mm; however, it does have sufficient blade to cut slightly thicker than this – my larger test piece was 70 × 70mm, clamped firmly and progressing slowly, just in case. The depth screw needed a turn to allow the blade to cut all the way through. The stated maximum compound cut is also 340 × 65mm, but that drops to 240 × 38mm if you want to make a 45°/45° compound mitre. Before I knew this, I tried to cut one in a 45mm thick timber offcut and the part of the frame housing the light and laser caught on the wood; the clamp also had to be moved to the right so that it didn't get in the way, but then it blocked the motor housing. The clamping problem is easy to deal with, but there's nothing that can be done to move the frame. Cutting a simple 45° mitre in 45mm thick timber can obviously be achieved by keeping the saw vertical and rotating the table, as long as the height isn't greater than the recommended 65mm capacity; for wider planks the saw must be tilted, which limits the thickness of cuts. In other words, check that the saw meets your needs before purchase. To test the accuracy of the compound mitre feature, I decreased the angles and cut two separate 30°/30° compound mitres, which paired perfectly.

Noise, dust & everything else

At almost 110dB, the noise produced by the CMS216S is sufficient enough for hearing protection to be required. Using the saw also generates lots of dust, some of which settles on the machine and work area, but a reasonable amount does end up in the supplied dust bag. The attachment point has an internal diameter of 35mm, which is the same size as a vacuum extractor adaptor. Always do what you can to reduce the amount that might go into the air, especially if working inside.

The wide operating handle, which has thumb-operated trigger release buttons for both left- and right-handed users, is so easy and comfortable to use that you tend not to notice it after a while. The spring-loaded guard exposes only the required teeth as it is plunged; the blade comes to a complete stop in just under five seconds – not particularly speedy, but half the recommended maximum.

The CMS216S has the usual lock for saw head release – push handle down, pull out pin, turn 90° – and table lock and release – twist handle for locking and a pull-up lever under the table to rotate. There are index positions at 0°, 15°, 22.5°, 30° and 45°, but no indexing for bevels, although the stop at 0° – top – was set correctly and the gauge at 30° gave a precise result. The pointers and stop adjustments at both ends of travel can be adjusted if necessary.

Laser guide and work lights are operated by the unmarked switch, which is located on top

The 48-tooth blade yielded better results

The laser line wasn't set correctly...

... but is easy to adjust

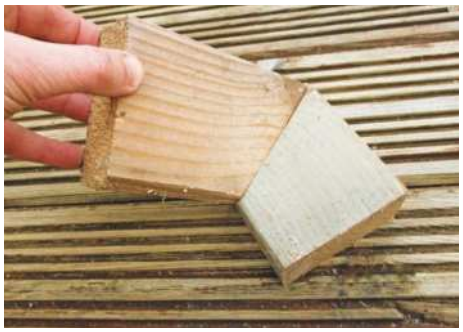
The laser panel requires a dust seal

No label for the lighting switch

The handles are basic but functional

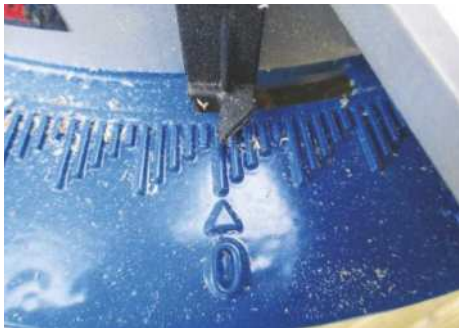

Bevel cutting at 45° reduces possible thickness


The clamp can sometimes cause an obstruction


30° × 30° bevels


45° mitres are precise


Dust collection is reasonable


The indexed table can be set at any angle

of the handle; the manual says that this is an on/off switch, but it actually cycles the lights as follows: just laser – just work lights – both – off. The lighting panel's cover doesn't have a seal to prevent dust ingress and the laser wasn't aligned to the saw blade at first, but it only took a minute to adjust. It gave a clear line on a fairly light, overcast day but needed shading when in full sun. The work lights are bright enough for indoor use or on a dull day.

The table has extensions for longer workpieces, although they don't move that much. Each has a rotating stop for repeated work, which is useful if the measurement you require is within the range available. Both fixed fences and kerf plate have measurements on them, which gives a guide to positioning.

Conclusion

This is yet another low-cost Clarke machine that provides excellent value for money. The only problem I ran into was the limited maximum thickness that could be cut, so it might not suit those about to embark on large garden structure projects, for example.

It doesn't have the quality of finish as seen on higher-priced models, nor features such as soft-start and multiple dust extraction points. It also has a power cable – and not a very long one at that – rather than running off batteries, and the motor has brushes, which need checking once in a while and will eventually need replacing. Look elsewhere if these factors are important to you. However, if you're in the market for a decent, basic compound mitre saw with additional features such as laser alignment and work light, and you're cutting medium-sized timber sections, the Clarke CMS216S would certainly be one to consider.


The gauge was accurate and can be adjusted


Extending table sides aren't generous...


... but do have a stop tab for repeated cuts


Check the brushes when you find performance starts to dip

SPECIFICATION

Volts: 230V
Watts: 2,000W
Blade diameter: 216mm
Max. depth of cut: 65mm
Max. cross-cut capacity: 340mm
Max. bevel cut at 45° × 45°: 240 × 38mm
Bevel angle and side: 0-45° left
No load speed: 4,700rpm
Noise level: 109.5dB
Dimensions: 735 × 593 × 505mm
Weight: 11.7kg

Typical price: £221.99
Web: www.machinemart.co.uk

THE VERDICT

PROS

- High quality at a low price; includes 48-tooth blade for finer cuts; trigger release buttons for right- and left-handed operation; laser alignment and bright LED work lights also included

CONS

- Needs space to use; small blade diameter limits the size of compound mitre cut; guard doesn't rotate enough during blade removal

RATING – PERFORMANCE: 4.5 OUT OF 5
RATING – VALUE: 5 OUT OF 5

MAKITA DTD172Z LXT BRUSHLESS IMPACT DRIVER

As the review for the **Makita DTD171Z impact driver** was being prepared for publication – see the December 2022 issue – the **DTD172Z** came along to replace it. Following a quick call, **Jonathan Salisbury** duly received the latest model to test

The DTD172Z appears to be largely the same as its predecessor

There are fewer things more frustrating than discovering that the new tool you've recently bought has just been replaced by a new, improved model costing the same – or sometimes less. The DTD171Z is still available from some retailers, so I was naturally interested to find out if the DTD172Z would be a better buy. And the short answer here is that: "It probably isn't".

The 172 is all but identical to the 171: although the top section is rounder and slimmer, overall it's almost exactly the same size – 114 × 81 × 236mm instead of 116 × 79 × 236mm – and there are no changes to the specifications – speed, impact settings, torque, noise, weight, etc. The handle and trigger are ergonomically identical, making the 172 just as comfortable to hold and easy to use as its predecessor. The driver bit insertion uses the same sleeve, which still has to be pulled forwards first – I had mistakenly thought that the 171 tested had the one-touch sleeve, which doesn't require this. The work lights are the same exceptionally bright units, which can still be turned off if not required; there are very slight changes to the air vents at the back of the body and shape of the black bumper sections.

So what has changed?

The only significant difference, it seems, is the control panel. There's now only one set of LEDs, numbered 1-4, to indicate which Application (impact force) or Assist mode setting is selected, which is indicated by a little blue LED. This simpler layout is an improvement, albeit a modest one. The previous separate Application and lamp buttons have been combined into one on the 172 – long press to switch lamps on and off; short press to change impact settings.

Impact settings still count backwards from 4-1, so you have to press the Application button three times to increase impact from 1-2 – i.e. 1-4-3-2. This was one of the things I disliked about the 171. The quick-mode button above the trigger can be set to change the impact force setting, to swap between two chosen presets, or do nothing at all. It's a bit of a fiddle to set up, but still a handy feature to have.

The sleeve is unchanged

The control panel's simplified layout, here in Application mode

A blue LED indicates that Assist mode has been selected

There are superficial changes to the casing

The Assist mode provides the same wood, bolt, T mode 1, and T mode 2 settings as before. Functionally, everything works in exactly the same way for both models – refer to previous test in the December 2022 issue.

Conclusion

There's so little difference between the 171 and 172 that choice really comes down to the deals on offer or personal preference. Both models are as easy – or as tricky – to use as each other because they're pretty much the same tool, albeit in slightly different packages. The 172 is slightly smaller, but I have yet to find anything in any publicity material or the instruction manuals to suggest that there is anything different underneath.

SPECIFICATION

Voltage: 18V
Electric brake: Joblight
Reverse switch: Variable speed control
Standard bolt: M5-M16
High tensile bolt: M5-M14
Coarse thread – length: 22-125mm
Max. fastening torque: 180Nm
Blows per minute – Lo: 0-1,100ipm
Blows per minute – Med: 0-2,600 ipm
Blows per minute – Max: 0-3,800ipm
Vibration K factor: 1.5m/sec²
Noise sound pressure: 97dB(A)
Noise sound power: 108dB(A)
Noise K factor: 3 dB(A)
Driving shank: 6.35mm ¼
Machine screw: M4-M8
Maximum output: 290W
Overall dimensions – including battery: 114 × 81 × 236mm
Weight: 1.2-1.5kg

Typical price: DTD172Z impact driver body – £159; BL1840 battery – £58; DC18RC charger – £18
Web: www.makitauk.com

THE VERDICT

PROS

- Functionally, just as good as the DTD171Z; slightly better control panel

CONS

- No significant improvements

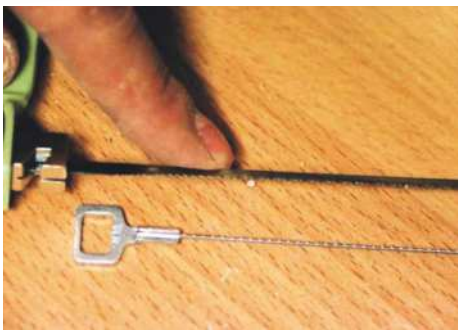
RATING – PERFORMANCE: 4.75 OUT OF 5
RATING – VALUE: 4.5 OUT OF 5

ASAHI FREE-WAY COPING SAW

This neat little saw from **Asahi** is of excellent quality and features a spiral tooth blade, which allows cuts to be made in any direction

The spiral blades fit to heavy square holders with solid alloy loops

As they're so fine, the spiral blades don't cut as quickly as standard versions



Standard blades can be fitted to the frame if desired, but there are limitations

Not only are the Japanese happy to saw on the pull stroke, but they've also decided to use a coping saw differently as well!

The product in question has what looks to be a standard coping saw frame, which also accepts standard coping saw blades. In addition, however, it's fitted with a spiral blade, which allows the saw to cut in any direction. This, in turn, removes the need to alter blade position when cutting intricate scribes or similar.

Easy movement

This great innovation means you can move the saw easily and the square pegs in the frame help to keep the blade twist-free, so any rotation of the frame as you work doesn't affect the cut. The blade is tensioned in the normal manner by twisting the handle and with hooped ends on the blades, the connection is therefore very secure.

In use

I cut a few scribes in skirting where a traditional frame and blade can easily get itself trapped as you try to rotate it around the intricate twists and turns, which often results in a snapped blade.

This round blade, however, doesn't require any additional space when turning a corner, so there's less chance of it trapping and snapping. As with a standard version, you can tilt the saw to achieve the best position. To move the blade around the scribe and on tight spots where a normal frame would foul and require adjusting, you can alter the pressure: simply pull, push or lift the saw to move it around, which becomes very intuitive after only a cut or two. The downside to this, however, is that as the spiral tooth pattern is very fine, it's therefore not as quick as a standard blade, which can hold you back if you have a lot to do.

While these blades work well with the saw for cutting in any direction without needing to change anything, there are limitations if you choose to fit a standard blade. The framework design doesn't allow any repositioning of a pinned blade: the end square holder is fixed, meaning the blade can only fit facing either up or down, so it can't be rotated as with a standard coping saw frame.

This does affect the saw's manoeuvrability in the case of some more complex scribes, and this is good reason to continue using the spiral blades in this area. Negative as this may seem, given the saw frame's superior quality, it's definitely worth considering changing the way you use a coping saw in general, as the quality of standard trade level frames isn't as high.

Conclusion

This saw retails at the same price as most recognised trade brands and it knocks spots off them in terms of quality and performance, along with a very sturdy framework that doesn't distort under load.

The saw blades are available for around a fiver for two, so they're a pricey option when compared to a typical pack of 10 standard blades; however, having both options available allows you to choose between the two in order to suit the job in hand, and as mentioned, you have to factor in the saw frame's high quality.

SPECIFICATION

Blade length: 165mm
Length: 290mm
Throat: 130mm
Blade diameter: 1mm

Typical price: £13.92; replacement spiral tooth blades – £4.99 for a pack of two
Web: www.quality-woodworking-tools.com

THE VERDICT

PROS

- Spiral blade cuts in all directions; excellent quality; very rigid; accepts standard blades

CONS

- No twist function for standard blades

RATING – PERFORMANCE: 4.5 OUT OF 5
RATING – VALUE: 4.5 OUT OF 5

The spiral blade can be pulled, pushed or twisted in the cut without jamming

With a standard blade fitted, the frame will foul on some scribing cuts

WIN! 1 of 2 Robert Sorby 410 Sandmasters – worth £64.62 each!

The Sandmaster allows you to safely sand the workpiece while it's spinning on the lathe

This handy on-lathe sanding solution from **Robert Sorby** will take your woodturning projects to a glass-like finish every time – there's two **Sandmaster** kits up for grabs

An essential part of every woodturner's tool kit, the Robert Sorby 410 Sandmaster is supplied with five different aluminium oxide abrasive disc pads, in a range of grits, meaning that even the roughest projects can be taken to a glass-like finish every time.

As well as being very useful, this on-lathe inertia sanding solution allows you to safely sand the workpiece while it's spinning on the lathe, and as the disc also spins, it therefore helps to reduce clogging of the abrasive.

Using the Sandmaster helps to avoid an uneven finish on woodturning projects and eliminates the unsightly lines often associated with hand sanding. There's also no danger of a user potentially catching their hands on the revolving object.

Articulating head

The Sandmaster's multi-angle articulating head, which runs on a durable phospor bronze bushing, allows even the most difficult areas to be accessed, and hook-and-loop backing means you can easily change between abrasive pads.

The tool's sponge head is ideal for working in tight spaces and overall, creates a fraction of the dust generated by power sanding. During use, this part should be held against the workpiece and when in correct contact, it'll spin. The idea is to keep the Sandmaster's head moving back and forth during use. In addition, there's little or no surface damage/head build-up, which can often be experienced with power sanding, and no cable to potentially trip over.

The Sandmaster can also be adapted to take a polishing mop, pigtail mandrel and goblet or bowl mop. As an optional extra, a 75mm head and discs can be easily fitted for greater efficiency.

The kit includes:

- 50mm sanding head
- **10 aluminium oxide abrasive discs in the following grits:** 60, 120, 180, 240 & 400 – two of each
- **Handle length:** 215mm
- **Overall length:** 290mm

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HOW TO ENTER

To be in with a chance of winning 1 of 2 **Robert Sorby Sandmaster kits**, visit **www.thewoodworkermag.com/category/win** and answer the multiple choice question below:

QUESTION: Which abrasive grit isn't included in the kit?

A: 120
B: 180
C: 80

The winners will be randomly drawn from all correct entries. The closing date for the competition is **21 April 2023**. Only one entry per person; multiple entries will be discarded. Employees of David Hall Publishing Ltd and Robert Sorby are not eligible to enter this competition

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★★★★★

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SCANGRIP MULTILIGHT CONNECT – FLEXIBLE HAND-HELD WORKLIGHT

MANUFACTURER: Scangrip
D&M GUIDE PRICE: See website

MULTILIGHT CONNECT from Scangrip is a hand-held worklight concept that offers a flexible solution to all your lighting needs. With multiple, exchangeable light heads, the MULTILIGHT CONNECT allows the user to tailor the perfect worklight solution to suit their specific needs.

The concept behind MULTILIGHT CONNECT is to combine a basic handle, similar to those found on power tools, with a range of different light heads, which can be easily exchanged to meet the demands of various applications.

There's a choice of three different light heads – SEARCH HEAD, FLEX HEAD and FLOOD HEAD – which can be combined with a MULTILIGHT BODY CONNECT, with each designed for a specific task.

The combined MULTILIGHT SEARCH CONNECT provides 600 lumen; the MULTILIGHT FLEX CONNECT provides 750 lumen; and the MULTILIGHT FLOOD CONNECT provides up to 1,500 lumen. The body of the MULTILIGHT CONNECT is adjustable in an angle of 120°, offering complete control over your lighting. Additionally, the body is equipped with a new, flexible mounting system that offers a combination of bracket, hook and magnet – all in one unit – which ensures maximum functionality.

By using the SCANGRIP CONNECTORS – available to purchase separately – MULTILIGHT CONNECT is compatible with the 18V METABO/CAS battery system and all other18 V/20V battery packs from leading power tool brands. In addition, the POWER SUPPLY CONNECT can be used for direct power providing unlimited availability to light.

BORA SPEEDHORSE PM-4500 SAWHORSE

MANUFACTURER: Bora
D&M GUIDE PRICE: From £59.95 each – when purchasing two

The Bora Portamate PM-4500 Speedhorse™ is the ultimate upgrade for your job site, workspace or workshop. When visiting multiple worksites in a day, you need equipment that's fast and easy to set up, take down and transfer from one location to another. This new sawhorse offering from Bora allows the user to shave precious time off site setup and teardown, ensuring you can get to work faster and complete jobs more efficiently. The Speedhorse™ deploys 30 times faster than conventional sawhorses – just pull the release button located in the middle of the frame. Designed or flexibility in a wide range of environments, this sawhorse features a tough build to withstand heavy projects, ranging from construction and carpentry to furniture builds. And when the job's finished, simply pull the levers and fold the legs up – in whichever order suits you. This contractor-grade sawhorse is set to revolutionise the worksite, helping you work more quickly and efficiently, while ensuring professional results are continually produced.

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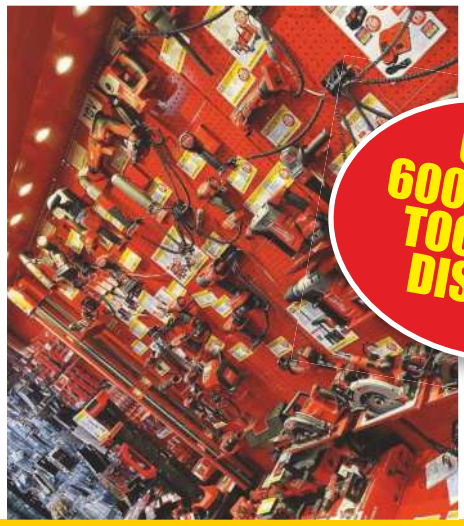

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1 An isometric sketch of how I hope the finished chair will look, albeit with skinnier legs

JIGGERY POKERY

With his deadline looming, furniture-making student **Mark Gould** had to design and construct a jig before he could start on his exam chair

It's year two proper of my two-year furniture-making foundation degree, although as a part timer the whole course will take four years, meaning that I should come out of London Metropolitan University – **www.londonmet.ac.uk** – clutching my qualification papers just in time for my first pension cheque. While it's always been a bit of a pressure course given my part-time status, this term things are taking on a decidedly more urgent turn with the big project brief: to design a functional piece of furniture for a genuine or imagined client commission. There's one caveat to this, however: whatever we choose to make, it must contain a curved component.

Michael Thonet

During my research, I've been really impressed with the simple but elegant bentwood Michael Thonet – pronounced 'Tone-e-t' with a hard beginning and emphasis placed on the 't' at the end – chairs (**photos 2** & **3**), which were first made in Germany during the 1850s. Since then, untold thousands of Thonet chairs have been made for export all over the world to grace everything from solid UK working men's cafés to European patisseries and restaurants. Thonet rejected the lumpy carved designs that went before him and finally his manufacturing company, Gebruder Thonet, succeeded in producing elegant, durable, lightweight and comfortable furniture, using the technique of steam-bending wood under pressure (**photo 4**).

Alvar Aalto

From Thonet everything followed, including the stupendous work of the Bauhaus in Germany and De Stjil in Holland; Isokon in the UK and the breathtaking simplicity and elegance of Alvar Aalto. Not much pressure, then as I decided to build a small chair with curved leg/arm assemblies, a curved back and seat supports (**photo 1**). The initial idea came from a book of 50 old chair plans I found in the college library. By a wonderful coincidence, the design I chose first featured in a 1950's copy of *The Woodworker*. The plan called for the main assemblies to be built up from three layers of solid wood; two in oak to provide the bread between which to sandwich some decorative Burmese teak. The two big curves reminded me of some of Alvar Aalto's finest creations, 'No.31' Armchair (**photos 6** & **7**), and the 'Piamio Chair' (**photo 5**).

I wanted to use the basic build technique to create my initial shape, but instead of going for a ply seat and back covered with foam and fabric, I had in mind continuing the curved theme, at least for the back. I also wanted to extend the 1950's feel

2 King of the curve Michael Thonet pioneered light, stylish mass-produced furniture

3 Pair of 1910 Model No.221 dining chairs – by Gebrüder Thonet

4 Thonet sales catalogue showing the Model No.221 chair designs

by adding some blue geometric-pattern Formica decorative laminate panels into the front of the seat back. To that end I made a one-fifth scale model (**photos 8** & **9**). Although it was a fiddly process and took an afternoon to complete, a scale model really does give a sense of the three-dimensional space your final work will inhabit. It also gave me a chance to play around with the dimensions a little and experiment with different backs and seat arrangements, varying the back's curve and changing the angle of the seat as I saw fit.

Shorthand plans

I chose to use *The Woodworker* plans because they looked simple. Big mistake! The three pages of words and diagrams seemed to be written in some sort of shorthand. Steam the lengths for the arm/legs and seat/back assemblies, and proceed to strap them into two straightforward-looking jigs.

I thought I'd start by testing this out with the seat/back components, as they're the smaller assemblies and would therefore require a smaller jig. I sweated over a jig for two days – double-thickness MDF boards screwed together. I shaped the back of the

jig in softwood to mirror the main curve – using the old pencil on a bit of string technique to attain the curve's correct radius – before attaching long softwood arms on either side.

The thin sheets of construction laminate would be sash cramped up against the curve by a large former between two wooden guides. Cunningly, I thought to myself, 'a lot of formers and jigs are wasted in this place after one use, so why not try to make use of some of it elsewhere?' I could make the moveable former in hardwood – beech would be ideal – and when the curving process was over, I could sculpt the former into a handy chopping board for the kitchen. Great idea, what a genius! I found a scrap end of wide beech board thicknessed to the correct width and thickness and in order to cut the curve, stuck it on a dowel attached to a wooden frame on the overhead router, taking 2 or 3mm bites with every sweep.

Second thoughts

With the jig finally together, it all looked really neat and I was pleased with my fairly accurate work. Let's have a try, I thought. Not a chance. At present the jig is nothing near strong enough or big enough to hold the timber lengths in place and support them while the glue cures. I consulted Andy, one of the college technicians, who smiled gently at the old diagram and my jig (**photo 10**) and said: "Why not use one of our ready-made formers and the vacuum press to build up the layers of veneers?" I had a look, took some measurements and, oh damn, the curve is far too tight. Anyone sitting at that angle would have their knees on their chin. So my original jig needs more strength and greater support along the whole length of wood to be bent, which I'll sort next.

I took his advice on the jig for the arm/leg assembly – a male/female former made up of three sheets of 15mm ply. Cue an afternoon of computer woes struggling with AutoCAD to create a diagram that could be CNC cut in college (**photo 12**). Many thanks for the kind help of students Mick, Tim and Neb.

I was a little worried about the number of sheets of veneer I'd need to get up to the arm/leg assembly thickness shown in the magazine plans. Again Andy said I'd need nothing like those thicknesses. He pointed out that glue lines provide massive structural strength and increase the overall thickness of the finished piece by a millimetre for every four layers of glue. That way I could build up a leg made of seven or eight thin layers of construction veneer, which would make forming that much easier.

Choosing veneers

In keeping with the chair's Scandinavian feel, I wanted to make it in a pale wood with a tight grain. A trip to a local specialist veneer seller somewhat limited my choice as I was looking for crown-cut veneers without too much decoration. Sadly they didn't have

5 The 'Piamio Chair' was one of Alvar Aalto's most notable designs

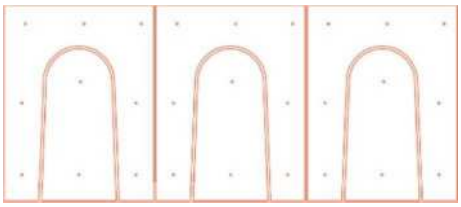
6 Designed in the '30s, Aalto's 'No.31' Armchair was a sensation, and it's also really beautiful to draw

7 'No.31' Armchair in birch, executed on license by Aalto Design Hedemora, Sweden 1945–54

8 This one-fifth scale model took two days to make. I like the legs' blue and flamed maple colour combo and the Formica seat and back, but the finished version will be in a very pale crown-cut maple

9 The scale model's back view shows nice repeated lines of laminate in the back support

10 To curve the veneers for the back/seat support, I made a dedicated jig. For strength purposes, I used double-thickness MDF but it still needs to be stronger



11 Final thickness of the three stacked ply sheets is 45mm, as they all come from one 15mm board

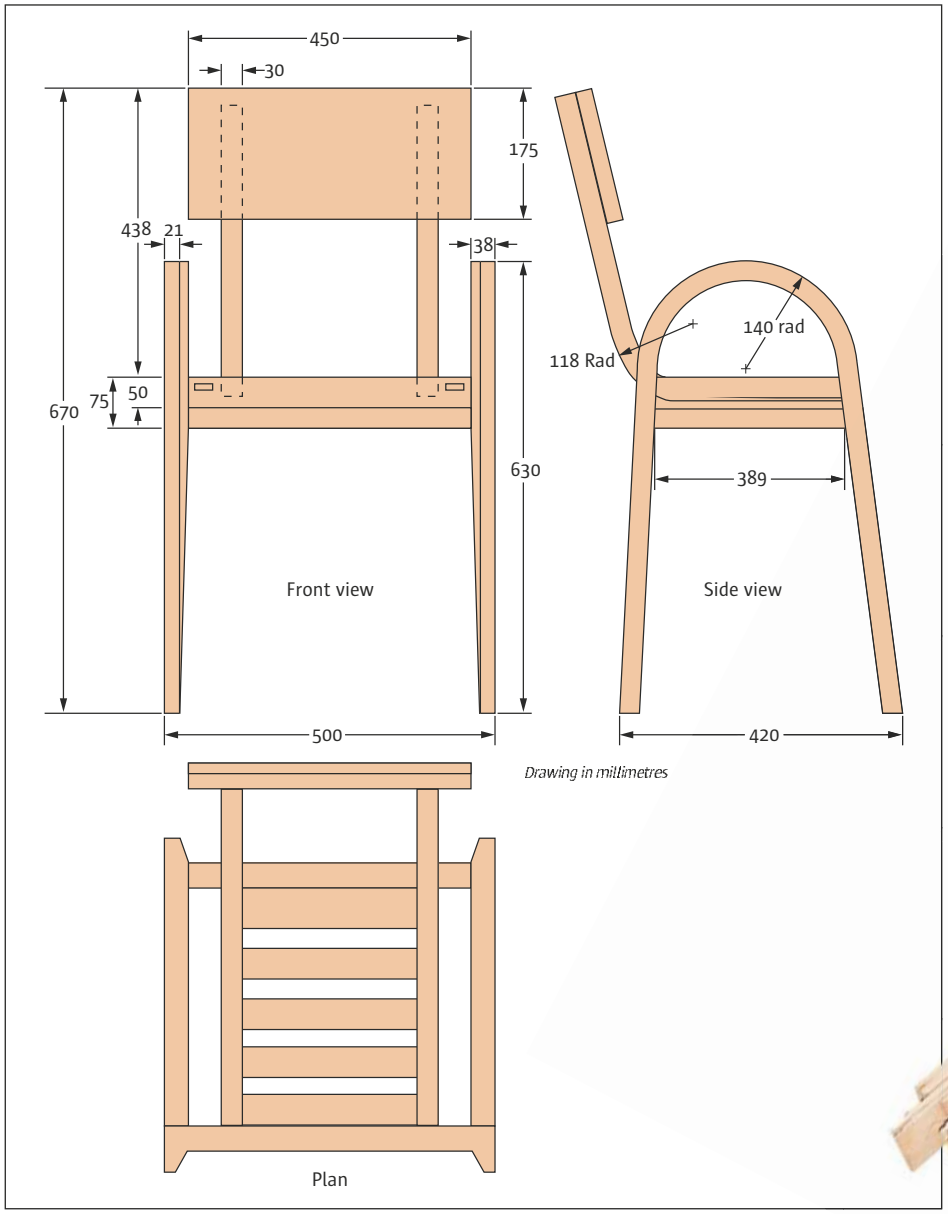
very much birch and no crown-cut beech, so after a trip to a nearby café – sadly Thonet free – a cup of tea and a cheese roll, plus pencil and paper, I settled on a 2,750 × 300mm sheet of 1.4mm thick crown-cut maple (**photo 13**). The board cost £57 (ex VAT) so with the cost of materials for the jigs, I've already spent £100 on the project plus at least a week on jigs and models, which is, I guess, why you have to pay good money for decent furniture.

I've made a note with the aim of trying to ensure that the show veneers running across the tops of the arm/leg units are good matches in terms of figuring – the same with the back assembly. The wood is very pale and doesn't have a great deal of character in itself, but that's fine as the chair is all about the curves and impact of the back and seat.

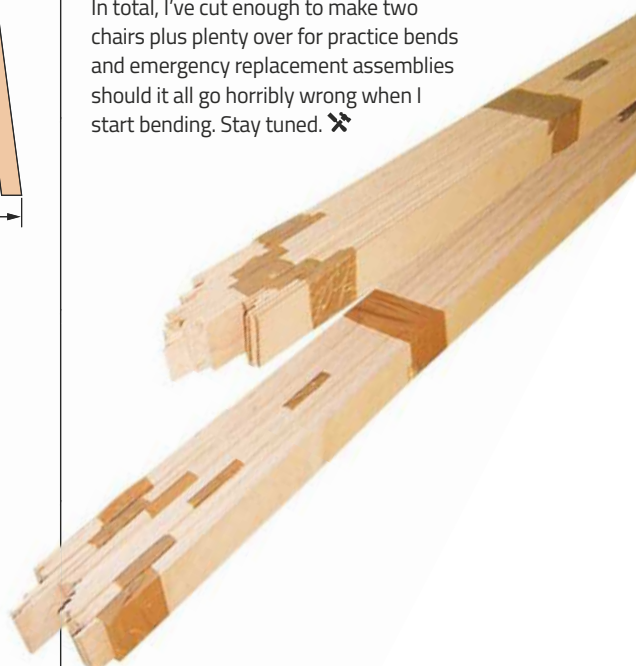
I got the board cut into two segments of 1,000mm and 1,750mm to make it manageable on the trip home. I used the college's massive powered veneer guillotine to process the sheets down into manageable 40mm-wide strips without too much waste. I ended up with strips of 46 × 1,750mm and 45 × 1,000mm – the shorter end of the board was a little too split. I stacked the cut strips to ensure that I'm able to choose the nicest figured pieces for my show veneers.

Emergency cover

In total, I've cut enough to make two chairs plus plenty over for practice bends and emergency replacement assemblies should it all go horribly wrong when I start bending. Stay tuned.



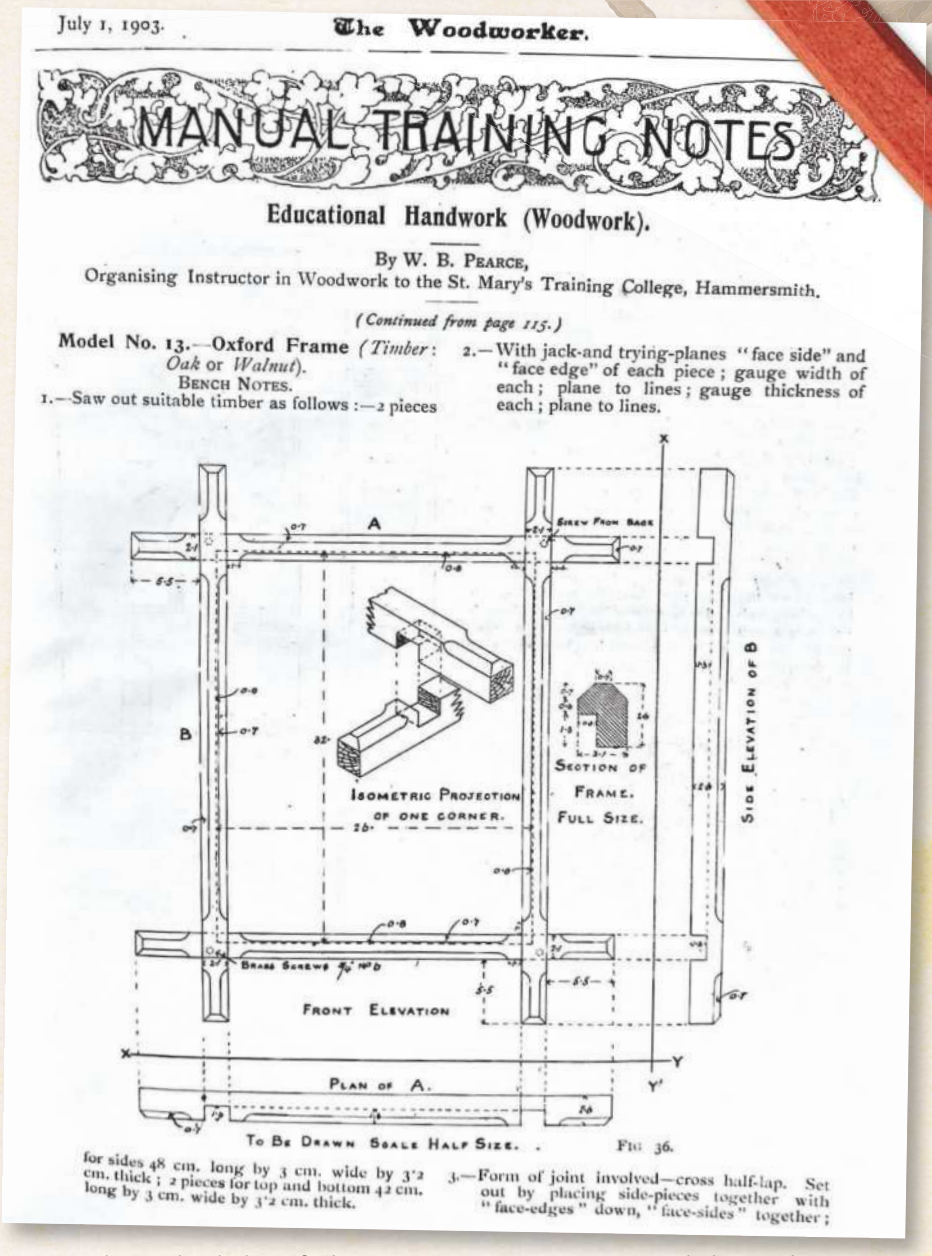
12 My orthographic diagram gives an idea of the radii for the chair back support and arm/leg assemblies



13 Having paid a visit to my local veneer specialist, I returned with £57 worth of crown-cut maple

Oxford frame or teapot stand?

The Woodworker of July 1903 prompts **Robin Gates** to thoughts of hymn boards and half-lap joints



July 1, 1903. The Woodworker.

MANUAL TRAINING NOTES

Educational Handwork (Woodwork).

By W. B. Pearce,
Organising Instructor in Woodwork to the St. Mary's Training College, Hammersmith.

(Continued from page 115.)

Model No. 13.—Oxford Frame (*Timber*: *Oak* or *Walnut*).

Bench Notes.

1.—Saw out suitable timber as follows:—2 pieces for sides 48 cm. long by 3 cm. wide by 3·2 cm. thick; 2 pieces for top and bottom 42 cm. long by 3 cm. wide by 3·2 cm. thick.

2.—With jack-and trying-planes "face side" and "face edge" of each piece; gauge width of each; plane to lines; gauge thickness of each; plane to lines.

3.—Form of joint involved—cross half-lap. Set out by placing side-pieces together with "face-edges" down, "face-sides" together;

Isometric Projection of one corner.

Section of Frame. Full Size.

Side Elevation of B

Front Elevation

Plan of A.

To Be Drawn Scale Half Size.

Fig. 36.

Thinking back to my first sighting of an Oxford frame – the sort of thing we woodworkers are wont to do – it must've been 60 years exactly to the month following this article in *The Woodworker* of July 1903, which explains how to make one. Characterised by horizontal and vertical members forming a cross at each corner, it was the Oxford type that'd framed the hymn board in the village church to which our primary school routinely trekked crocodile-fashion across the fields for the end of year service. Fidgeting in the depths of some dark-wood pew, sit-bones aching on unforgiving oak, bare knees itching from a coarsely woven hassock, I recall staring at that hymn board wishing time would run faster. How many verses remained yet to be sung, and how much more would our doddery and almost invariably tipsy vicar have to say before we would be freed for the long summer holiday.

Religious origins & woodwork projects

Of course, at the time I didn't know it as an Oxford frame, but as an inveterate church crawler I've seen this design framing hymn boards many times since, and just as often framing small embroideries, texts and faded photographs in antiques stores. Delving into the design's history, it does seem to have a religious origin, early in Queen Victoria's reign, being associated with some Oxford-based high church members of the Church of England, known as the Oxford Movement, who were looking to revive older Christian traditions. A number of these clerical grandees subsequently converted to Roman Catholicism and this seems relevant in the current context because the byline of author W. B. Pearce notes that he was 'Organising Instructor in Woodwork to the St. Mary's Training College, Hammersmith.' Founded in 1850, the college aim had been to train teachers – initially just six – to educate poor Catholic children and its first Principal was a Father Glenie; a convert from the Oxford Movement. Bringing the story up to date, I note that the college moved from Hammersmith to more spacious facilities at Strawberry Hill in 1925, and has since become St. Mary's University with current students numbering around 5,000.

Returning to the woodwork, this Oxford frame comes from an educational series in the magazine, this time focusing on the cross half-lap joint. At around 16 × 18in and of 1⁄ stock, it's fairly substantial, giving practice in sawing timber to size; squaring up with the jack and trying planes; marking out properly from face side and face edge; then pairing parts for marking joints subsequently sawn and chiselled to fit; before gauging lines to guide some decorative chamfering. Note that the frame is fastened by a ⅜

In his concluding remarks, the author stresses the advantage in making a useful artefact where 'a characteristic joint is repeated four times without any diminution of interest on the part of the pupil', over a mere practical test, 'giving such a joint as an exercise, four times in succession', in which case, 'the last joint produced will generally be found to be the worst constructed', while for less enthusiastic pupils, 'the drudgery would be quite sufficient to destroy that love for learning which this subject, when rightly taught, invariably fosters.'

Bearing that in mind, I suggest this remains a sound project for school woodwork in 2023, especially if modified to relieve it of religious overtones. Indeed, recalling my first year at secondary school, our woodwork project for the 1970 spring term was a stout little teapot stand in pine, similarly constructed to the Oxford frame. The stand used half-lap joints at the corners that were glued, not screwed, and was bridged by a piece across the middle, joined by half-lap dovetails.

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WW PROFILE

ALMOST FORGOTTEN

The number of heritage craftspeople in the UK is dwindling and as a result, ancient skills are in danger of dying out and being lost forever. Here, **Johnathan Swann** introduces us to two such practitioners, both of whom point to the importance of passing on and teaching these skills to the next generation

Andrew Bellis in his garden workshop

Heritage crafts in the UK are at risk of being lost forever as demand for mass-produced goods continues to increase. Each year, the Heritage Craft Association publishes an up-to-date list of critically endangered crafts within the UK. In order for crafts to be considered for this list, they have to fall into one of the following categories: **1)** Have a diminishing number of craftspeople still practising; **2)** There's little or no opportunity to train a new generation; **3)** Crafts that yield a low financial reward for the maker; **4)** Crafts with no plan in place to pass down necessary knowledge and skills to uphold the process.

Andrew's bows are made using the finest materials, including the now precious pernambuco wood

An uncertain future

In 2021, over 20 new crafts were added to the list, some of which include glass eye blowing, copper wheel engraving, and barometer making. Each of these only has one or two professionals still working on upholding these processes and practices, which spells an uncertain future for small heritage crafts and trades.

The highly skilled craft of instrument bow making was believed to have started in England around the 17th century, and it's one that uses a blend of exceptional quality tools and materials to precisely carve exact shapes in wood with

Andrew Bellis is Dorset's longest established violin repairer and bow maker

the aim of creating a specific sound. With each careful pass of the plane, the bow gets closer and closer to the perfect tone – a skill that can only be learnt with years of practice and proper tutoring. Since the 1800s, pernambuco wood, originating from Brazil, has typically been used to produce hand-crafted bows. This specialist wood provides the perfect combination of flexibility, durability and resonance. In more recent years, however, carbon fibre has began to make its way into the bow making industry, although the construction of one in this material requires a completely different skill set to that of a wooden version.

Andrew Bellis – Bowmaker & Violin Repairer

After making his first bow in 1978, Andrew Bellis fell in love with the process of assembling

FURTHER INFORMATION

The Heritage Crafts Association – **www.heritagecrafts.org.uk**
Andrew Bellis – Bowmaker & Violin Repairer – **www.andrewbellis.com**
Jeremy Atkinson – Master Clogmaker – **www.clogmaker.co.uk**

such an intricate object, which led him to start his own bow making business in 1980. Andrew is now the longest established bow maker in Dorset, widely regarded as one of the best in the business, and still receives orders from all across the UK. Working out of a small – yet functional – garden workshop, during the course of his 42-year bow making career, Andrew has managed to slowly refine a simple garden shed into the perfect place for making and restoring some of the finest bows in the world. Now classified as critically endangered in the UK by the Heritage Crafts Association, bow making is believed to have less than 20 professional practitioners remaining.

Andrew is very aware of the dwindling number of craftspeople that possess the very specific skills required to ensure this craft continues. Limited access to the raw materials needed to produce a bow, and a shortage of training opportunities, are all issues surrounding the craft and thus preventing growth. When he first started making bows, and in an attempt to protect this craft from extinction, Andrew ran courses to teach relevant skills to the next generation of bow makers.

A specialised bow making plane is used to shape the raw material

The plane features an upright 90° positioned blade setup for uneven hardwoods

Jeremy Atkinson is the sole remaining traditional hand carver making bespoke clogs in England

The historic cultures and traditions formed by these crafts are under threat and the few people that continue to practise them are scattered all over the country. From Andrew's bows in Dorset to Jeremy Atkinson's clogs in Herefordshire, both are on the red list and in danger of extinction.

Jeremy Atkinson – Master Clogmaker

Clog making has been a British tradition for hundreds of years and can be traced back to medieval times. In the case of heavy labour, wearing clogs was preferred over other types of footwear as they offered excellent protection from wet and cold conditions while providing comfort and durability. Lincolnshire willow, Scottish birch and sycamore were often used in the construction of English clogs owing to the fact they aren't liable to splitting easily, and therefore contributed to the finished clog's overall stability. The craft's fast decline began in the 20th century as the demand for hand-carved clogs dropped rapidly as more modern footwear was introduced, such as leather boots.

The craft is also now classed as critically endangered by the Heritage Crafts Association, with as little as five professionals remaining. Four of these use a bandsaw to fabricate the wooden sole, while Jeremy Atkinson is the only remaining craftsman still using traditional hand-carving methods to produce clogs in the UK. In Jeremy's case, every stage of the process is carried out by hand, from felling the best tree, cutting and dying the leather, to hand-shaping the wooden sole. Perhaps the skill that takes the longest to master is the art of using the stock knife – a long-handled knife that's mounted to a wooden bench. This tool allows Jeremy to cut and shape the wood with the accuracy required, carving the clog's sole to precisely fit the shape of an individual's foot.

Jeremy's Herefordshire-based workshop has become a clog making time capsule, with everything inside dating back decades – each object has a story; and everything has a place and a purpose. Jeremy has dedicated most of his 40-year clog making career to keeping this craft from extinction by passing down the relevant knowledge to the next generation. In 2005 he took up the challenge of teaching Geraint Parfitt – now the only maker of hand-made clogs in Wales – who works out of St Fagans National Museum of History in Cardiff.

Perhaps these crafts will one day join cricket ball making, gold beating and lacrosse stick making to become a distant memory of English heritage, going on to have a detrimental effect on British heritage overall. At least for now, those dedicated individuals are actively passing on the skills required to keep specific crafts going, and in doing so, offering the next generation the best possible chance of keeping them alive.

Cutting a clog sole by hand using a stock knife

Boxes of clog clasps and clog formers

Historical clog-making relics in Jeremy's workshop

To make a pair of clogs, Jeremy hand cuts the leather uppers and hand carves the soles

The clog's wooden sole is fabricated by hand using various traditional methods

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NEST FROM A CROTCH

CHISEL RATING

Making use of storm-felled ash which was harvested then left to dry for a year, **Andrew Hall** turns a calabash-shaped vessel from crotch wood along with a lovely nest of natural-edge bowls

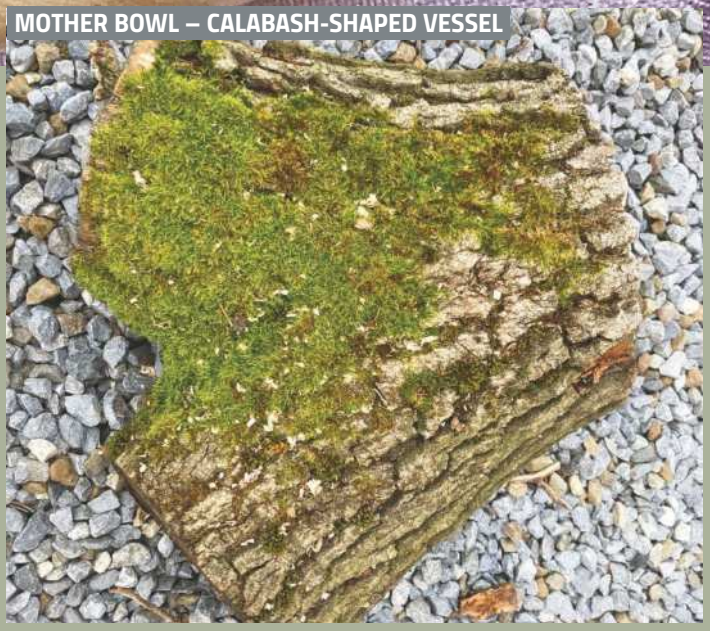
I've often turned bowls from crotch wood; this is where the tree grows from the trunk, or large branches, in two directions.

Crotch wood can be very attractive with its side-grain moving in three directions; however, cracks are always present in the drying process, so some sort of filler or method of disguising or accentuating the cracks is therefore required to finish the bowl.

For this project, I decided to turn the mother bowl – the largest one – into a calabash-shaped vessel and the core saved from the centre into a traditional-shaped bowl. Both pieces would feature a natural-edge.

I harvested the ash from a friend's garden in a village that'd been hit by the storms of February 2022. A year on from harvesting the timber and leaving it to dry, I set about writing this article along with turning the ash blanks to a finished wall thickness of 10mm.

MOTHER BOWL – CALABASH-SHAPED VESSEL



1 The first step was to select the crotch wood I wished to use, followed by converting it to a usable blank ready for mounting on the lathe

2 My chosen conversion method and the safety equipment I'm using help to make the experience both pleasurable and safe. I bought the trousers I'm wearing 20 years ago and they actually cost twice as much as the chainsaw, but they've served me well. I've renewed the helmets over the years as the plastic does go brittle and there's a use by date stamped inside. I've also had several pairs of gloves; they aren't cheap but then it's difficult to replace a hand!

I do get on my soap box a bit when it comes to woodturners and chainsaws. You can buy a chainsaw relatively cheaply, but for about £90, you can also purchase the necessary safety kit including helmet, chaps and gloves. While these will keep you safe, my strongest suggestion would be to undergo proper training before you even think about picking up a chainsaw.

To this day, the thing that stuck with me the most during the course I took, 20 years ago, were the images our tutor showed us of various chainsaw accidents. These were dreadful but the most horrific of these was a short video filmed in an abattoir, showing a chainsaw cutting into a side of beef – it produced a pound of mince per second... That's all I'll say on the topic, but if you're using a chainsaw, ensure to make it a safe and fun experience, just as you do with woodturning

3 With the ash converted, I transported it home before black pallet wrapping the blanks; this ensures that as much moisture is maintained as possible and the drying rate slowed down, so they're ready for use at a later date. Using a faceplate ring held with 50mm good quality screws, I mounted the wood on the lathe and secured the blank with tailstock support

4 Using a 12.5mm bowl gouge with swept-back grind, I trued up the blank, working from both sides to maintain a nice clean edge on the natural-edge bark. I tend to find ash lends itself nicely to natural-edges as the bark tends to remain stable

5 The next step was to true up the base of the blank with a draw cut and produce a 95mm spigot to fit the 100mm Gripper Jaws in my Record Power SC4 chuck. I crisped up the tenon using a 10mm beading/parting/skew tool ground at a 6° angle to reflect the dovetail on my chuck jaws

6 By this point it was evening time and the project was turned over a two-day period. If you're working to the same time frame, a little tip is to pallet wrap the blank and leave overnight; this will prevent moisture loss and also ensure it remains true

7 I set up the Woodcut Bowlsaver Coring System so that the blade was exactly on the blank's centreline. If you don't own a bowl saver, skip this part and follow the steps for using bowl gouges to remove the calabash's centre. I also used my new laser to determine the depth of cut – again, if using a bowl saver, refer to the instructions provided

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8 The bowl was cored with the lathe running at 600rpm. By this point, the ash was fairly dry – note that I've left the faceplate ring on; this will allow me to re-turn the core. If you're thinking of investing in a bowl saver, there's three main manufacturers and I've had the opportunity to try all of them. Personally, I find the Woodcut the most economical and easiest to use. The laser system was made for me by a friend, but these can also be purchased from Woodcut. Once the mother bowl was carefully cored, I put the centre aside for later use

9 Using the 12.5mm bowl gouge with swept-back grind as before, I removed the bulk of the timber, then refined the wall thickness with a short-bevelled traditional-ground bowl gouge. The one pictured here is an Ashley Iles double-ended gouge mounted in a Simon Hope handle. Both Record Power and Ashley Iles gouges are manufactured from M2 high speed steel

10 Using large figure-of-eight callipers, I checked the wall thickness to ensure it was being maintained at an even rate of 10mm

11 This magnetic toolrest light from Woodart Products illuminates the bowl interior, and a carbide tool helps to finish the curve in the bottom. In the UK, Simon Hope has a great selection of carbide tools and Crown also produce some excellent versions. In the USA, Hunter Tools are exceptionally regarded for these

12 With turning complete, I now had to decide how to stabilise the crotch's natural cracks, choosing to exaggerate them using a Proxxon carving tool. To fill the cracks, I used a product called Leak Fix, which is anthracite black; and enhancing the filler called for an ample supply of brass powder. A friend with an engineering company gives me the left over particles from his metal turning for this very purpose

13 Leak Fix is a two-pack filler with the main body of filler and hardener mixed at a 10% ratio. Used to fill cracks in car radiators, I buy it from my local motorist's discount store. Once dry, which is after about 30 minutes, it can then be sanded. I ensure to use my Ellipse respirator and goggles, with the CamVac extractor and Record Power AC400 two-stage air filter running in the background. I start by sanding the filler using a cordless drill and 75mm Simon Hope sanding arbor, fitted with a 100mm sanding pad. I start at 180 and finish at 240 grit

14 As I sanded the bowl exterior by hand in reverse, I ensured to check that the register stud was secure on the drive register...

15 ... then vacuumed the interior and exterior using an attachment for the CamVac extractor. **SAFETY TIP:** When sanding in the direction of rotation, I hold the abrasive at 8 o'clock and when sanding in reverse, the 3 to 4 o'clock position

16 Using the 10mm bowl gouge with swept-back grind, I finished turning the foot, ensuring it was slightly undercut so that it'd sit correctly on a surface

17 In the photos here, I'm holding the bowl in my vacuum chuck at 150mm diameter. If you don't have one of these, you can always make a dome chuck with anti-slip mat supporting the bowl, using tailstock pressure, and sand the last part. You can also remove the button in the foot's centre or make a jam chuck if the edge is flush instead of natural-edged

18 I initially used Chestnut Products' WoodWax 22 to polish the bowls

19 This product is applied to the exterior with the bowl held stationary on the vacuum chuck, and for the interior, applied with the bowl sitting on the lathe bed. Again, if you don't have a vacuum chuck, simply apply it both inside and out of the chuck

20 Using both the Chestnut and Beall buffing mops, I applied a coat of Carnauba wax with them running at 1,400rpm. It's important to protect the turning using large bubble wrap or a towel, for example, in case it strikes the lathe bed. If you're not careful, the mops can sometimes grab the piece from your hand. To eliminate this, I hold the piece in the 8 o'clock position, taking care to ensure I don't catch the natural-edge

21 The mother bowl – calabash-shaped vessel – is now complete

CORE – TRADITIONAL-SHAPED BOWL

22 Now to turn the core using the same tools as before. To start, I turned the outside of the bowl, removing as little as possible to true it up. I then cut a small spigot to suit the size of jaws I was using

23 Before I reversed the little bowl to remove the centre, I sanded and waxed the exterior, leaving the tenon clean

24 I could now remove the faceplate and focus on turning the bowl centre. I made a series of 'V' cuts and removed this central part...

25 ... checking the wall thickness with scissor callipers. Once I'd finished turning the bowl and having achieved an even wall thickness, I sanded using the cordless drill mounted with various arbors

26 I used my 100mm vacuum chuck to hold the small bowl while the foot was being turned, following the same method as before...

27 ... then sanded and finished with carnauba wax followed by the buffing system

28 Shown here is my friend's garden as it looks today, and inset, after the February 2022 storms had hit. Despite some damage being caused when the ash tree was struck down, the resulting timber wasn't wasted. I feel lucky to have had the opportunity to turn some beautiful rippled ash, and our friends have received some turned pieces as a thank you, as well as being able to heat their home with the firewood offcuts

29 The nest of bowls was given as a 70th birthday gift, and as a token of gratitude for the ash I was able to harvest

30 The trunk will be fitted with a top to make a garden table. Notice how the trunk interior is decayed, and I believe that's why the tree fell in the strong winds. Fortunately it fell into the garden rather than on the house...

New stylish cabinet hardware from IronmongeryDirect

Leading specialist trade supplier **IronmongeryDirect** has added a new selection of handles, knobs and hinges to its range of over 18,000 products

Crofts & Assinder Monmouth
For those in need of versatile cabinet hardware, the Crofts & Assinder Monmouth range is ideal. With a simple and timeless design, combining geometric shapes and warm edges, the retailer has added a number of new finishes to its stocked collection, including the stunning Brushed Iron option, which has a similar aesthetic to gun metal.

Crofts & Assinder Monmouth Round Cabinet Knob – 32mm diameter – Brushed Satin Brass

Hampstead Knurled Lever Door Handle on Rose – Satin Brass

Hampstead
IronmongeryDirect continues to expand its exclusive, elegant Hampstead range, and has introduced a striking, trend-led knurled collection to the line-up. These beautiful products are available in a variety of finishes, including brass, nickel, bronze, anthracite as well as matt black.

Carlisle Brass
Grey is the new black! Carlisle Brass recently introduced Anthracite to the colour finishes across its stunning Knurled and Lines ranges and joins the stocked collection at IronmongeryDirect. The textured designs align with various interior styles – particularly industrial, modern and contemporary – available as pull handles, knobs and t-bar knobs for a cohesive collection of stylish hardware.

Carlisle Brass 13mm Knurled T-Bar Cabinet Pull Handle in Anthracite Grey

IronmongeryDirect is the UK's largest online supplier of ironmongery to the trade. With over 18,000 products in stock, woodworkers, carpenters and joiners can choose from a range of flexible delivery options to meet the needs of their busy schedules, including same-day delivery to postcodes in selected areas of London and the East of England, as well as click and collect from 6,500 pick up points across the UK. To view the products, see **www.ironmongerydirect.co.uk**.

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Trusted to deliver

FROM TRASH TO TREASURE

CHISEL RATING

Glenn Perry gives a discarded gate leg table a new lease of life by remaking components and giving the whole piece a much more modern appearance

1 The table was in a sorry state when first acquired

Part way through this project, I felt that I was participating in one of those daytime TV programmes where discarded items are rescued from waste/recycling centres and given new life. One of my nieces asked if I could make use of an old oak table that had been left in her house while it was being refurbished. Never one to turn down an offer of free timber, I collected the gate leg table and discovered that it wasn't oak as expected but in fact pine – redwood – which had been stained dark brown. It was in a sorry state and appeared to have been used by the builders for a number of functions (**photo 1**). Gate leg tables were first introduced into Britain in the 16th century. Most examples you come across date from the Victorian era onwards. Mine was a simplified, modern design featuring a 30mm thick laminated pine top, which had thankfully survived without any serious damage being inflicted on it.

Table restoration

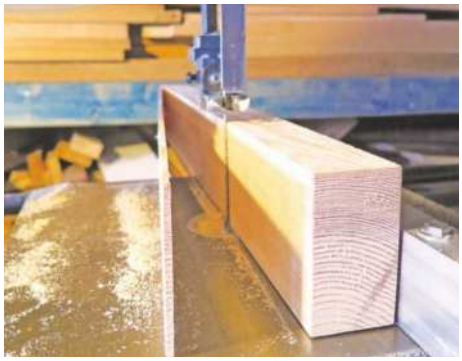
Inspecting the various components, I took the decision to restore the table. The three sections, 118cm diameter top and two rectangular open frames – resembling gates – that support the two side table extensions, were the only items salvaged for re-use. I recorded the original table's dimensions and timber sizes, then made a sketch.

Making the components

The first job was to make the two end supports, which would screw into the table top's central portion. The feet and tops – made from clean, redwood pine – were planed, cut to size on the bandsaw and shaped (**photos 2, 3** & **4**). Next, long mortises were cut on the mortiser to receive the long uprights (**photo 5**), made from a 25mm thick board, which was originally part of another pine table (**photo 6**). Tenons were cut at either end with tenon saw and bench rebate plane (**photos 7, 8** & **9**). I created tear-drop shaped cut-outs with a large Forstner bit and jigsaw(**photo 10**) to add interest.

2 Hand planing timber blanks for the feet and top

3 Marking timber prior to cutting on the bandsaw



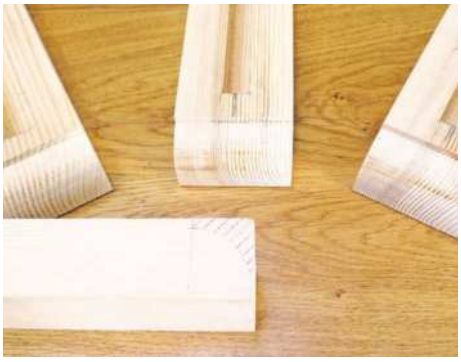
4 Cutting feet blanks

5 Long mortises in the feet and tops


6 Reclaimed timber boards for table end supports


7 Cutting tenons for the table supports


8 Trimming tenons with a bench rebate plane


9 Shaping the feet and tops


10 Creating simple cut-outs in the table ends


11 Marking a stretcher for the through mortise

The two table ends are connected with a stretcher made from 20mm thick timber. These are mortised through the uprights with shoulders remaining. This section will have an angled wedge cut through it, which pulls the stretcher tight to the uprights. The protruding tenon is marked level with the side and when cutting the through mortise for the wedge, this is extended another 2mm towards the shoulders to allow for a secure fixing (**photos 11** & **12**). I chose a 5:1 angle for the wedge and when happy with the fit, shaped the ends (**photo 13**).

The circular top, which comprised three sections, were initially cleaned up with a belt sander (**photo 14**) before using a random orbit sander and cabinet scraper. Incidentally, the top and flaps are connected via piano hinges with many little screws. Having completed all the cutting and shaping, the end sections were then glued up (**photo 15**). All the supporting components were primed and painted while I finished the top and stretcher with an acrylic, clear varnish (**photo 16**). This is a good choice for a surface that's in regular use as it can be easily reapplied.

Table assembly

With the table assembled, the advantages of the gate leg design can be appreciated. Side flaps down, it occupies a small footprint. Depending on the number of people that'll use it, one or both leaves can be employed (**photos 17** & **18**).

At the beginning of this project, I asked myself if it was worth doing. Because the materials cost next to nothing, the time aspect was the only consideration. I gave the refurbished table to my youngest daughter and her partner for use in their future home.


12 Angle for the tenon peg


13 Peg inserted before shaping


14 Initial clean-up of table top with a belt sander


15 Gluing and clamping the table ends


16 Main table components


17 Completed table with side flaps down

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FURTHER INFORMATION

For more information on Tormek, see **www.tormek.com**
To find your nearest reseller, see **www.tormek.com/uk/en/resellers**

WW TECHNIQUE

WHICH TORMEK GRINDING WHEEL IS RIGHT FOR YOU?

Selecting the appropriate wheel for your **Tormek** machine can be confusing owing to the wide range of options available. Following this comprehensive guide will help you choose wisely, correctly and ultimately produce the best results

Tormek grindstones

Tormek grindstones are widely renowned for their efficient results and long service life, and as such, will often last for many years. Tormek offers various types of grindstones, all of which are optimised with special sharpening abilities to suit a range of different applications.

One thing all the grindstones have in common, however, is that they're designed to give tools a sharp and durable edge, and the surface finish a user requires.

Tormek diamond grinding wheels

Owing to the Tormek water-cooled sharpening system's low operating speed, the diamond grinding wheels range has been specifically developed for this purpose. As no heat is generated during the process, it's an ideal match.

All Tormek diamond grinding wheels have exceptional wear resistance and maintain a constant shape. This means they always stay round, true and flat, with a full size diameter.

Users who often sharpen the same tool benefit greatly from this, as it simplifies both jig setting and sharpening. You can also sharpen tools that require a completely flat bevel against the flat side of the wheel.

ORIGINAL GRINDSTONES

SG-250 ORIGINAL GRINDSTONE – The great classic

The SG-250 Original Grindstone fits the Tormek T-8 and all earlier machine models with a 250mm diameter grinding wheel. It's been developed to combine efficient sharpening and a fine surface finish, along with a long lifespan. Supplied as standard with the Tormek T-8 Original, it also has an adjustable grit, which is equivalent to between 220-1,000 grit.

SG-200 ORIGINAL GRINDSTONE – The compact classic

The SG-200 Original Grindstone fits the Tormek T-4 and all earlier machine models with a 200mm diameter grinding wheel. Through years of development, it's been designed to combine efficient sharpening, a fine surface finish, along with long service life. The dimensions have been adapted to suit Tormek's more compact machines, for users with limited space or those who need to easily transport their Tormek. Supplied as standard with the T-4 Original and T-4 Bushcraft models.

SP-650 STONE GRADER – Change the grit size on your grindstone

The SP-650 Stone Grader allows you to adjust the sharpening characteristics of your Original Grindstone or Blackstone Silicon. These grindstones have adjustable sharpening characteristics equivalent to between 220 and 1,000 grit. The fine side of the stone grader provides finer sharpening characteristics, while the coarse side is used to maintain the grindstone and reactivate the grit for more effective and coarser sharpening

BLACKSTONE SILICON

SB-250 BLACKSTONE SILICON – Sharpens harder steel

Tormek's SB-250 Blackstone Silicon has been specially developed to shape and sharpen HSS and other high alloy steels. This makes it popular with woodturners, among others, owing to its more efficient material removal on hard turning tools. It also has an adjustable grit, which is equivalent to between 220-1,000 grit.

JAPANESE WATERSTONES

SJ-200 & SJ-250 JAPANESE WATERSTONES – For a mirror finish

The Tormek SJ-250 and SJ-200 4,000 grit Japanese Waterstones provide a mirror finish; the fine surface polishes the tool's edge and creates the ultimate surface finish. If you're looking to achieve razor sharpness, either of these grinding wheels will be perfectly suited. The SJ-250 is designed to fit the Tormek T-8 and all earlier machine models with a 250mm diameter grinding wheel, and the SJ-200 fits the Tormek T-4 and all earlier machine models with a 200mm diameter grinding wheel.

DIAMOND GRINDING WHEELS

DC-250 DIAMOND WHEEL COARSE – Rapid material removal for the Tormek T-8

Designed to provide efficient sharpening and rapid repair of a dull or damaged edge. Its 360 grit allows for fast steel removal and makes the wheel particularly useful for tool shaping.

DF-250 DIAMOND WHEEL FINE – Effective material removal & smooth surface finish for the Tormek T-8

The ultimate all-round diamond grinding wheel, combining efficient steel removal and a smoothly sharpened surface. The 600 grit provides fast sharpening and a smooth surface finish.

DE-250 DIAMOND WHEEL EXTRA FINE – Constant shape & smooth surface finish for the Tormek T-8

This 1,200 grit diamond grinding wheel provides an extra smooth finish and is especially suited to carving tools and knives that require minimal steel removal.

DC-200 DIAMOND WHEEL COARSE – Constant shape & aggressive material removal for the Tormek T-4

Designed to provide effective sharpening and rapid repair of a dull or damaged edge, the 360 grit size allows for fast steel removal, making it particularly useful for tool shaping.

DF-200 DIAMOND WHEEL FINE – Constant shape, efficient material removal & nice finish for the Tormek T-4

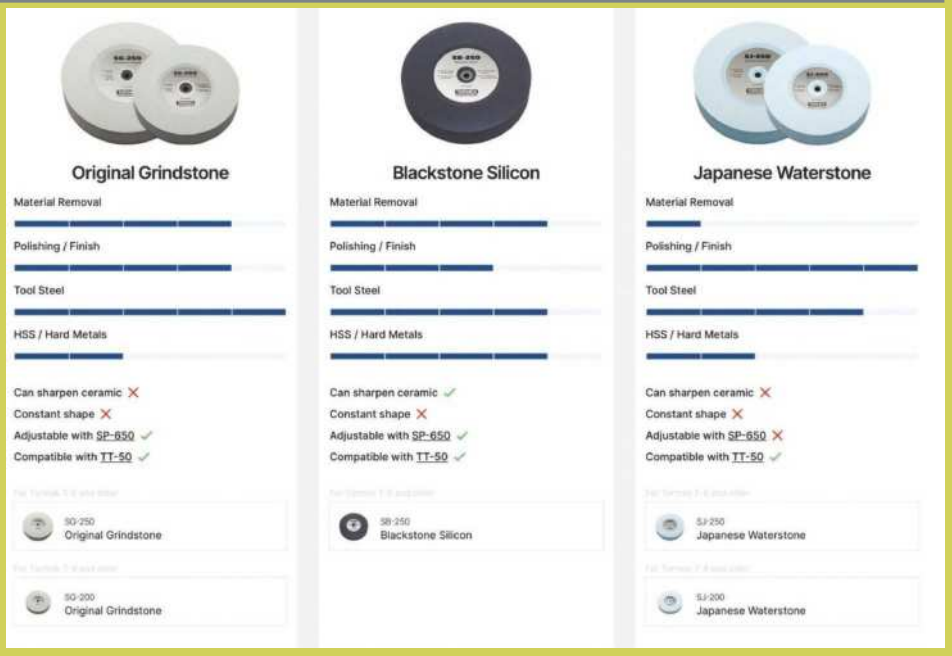
The ultimate all-round diamond grinding wheel, it combines efficient steel removal with a smooth grinding surface. The 600 grit wheel provides effective sharpening and a smooth surface finish.

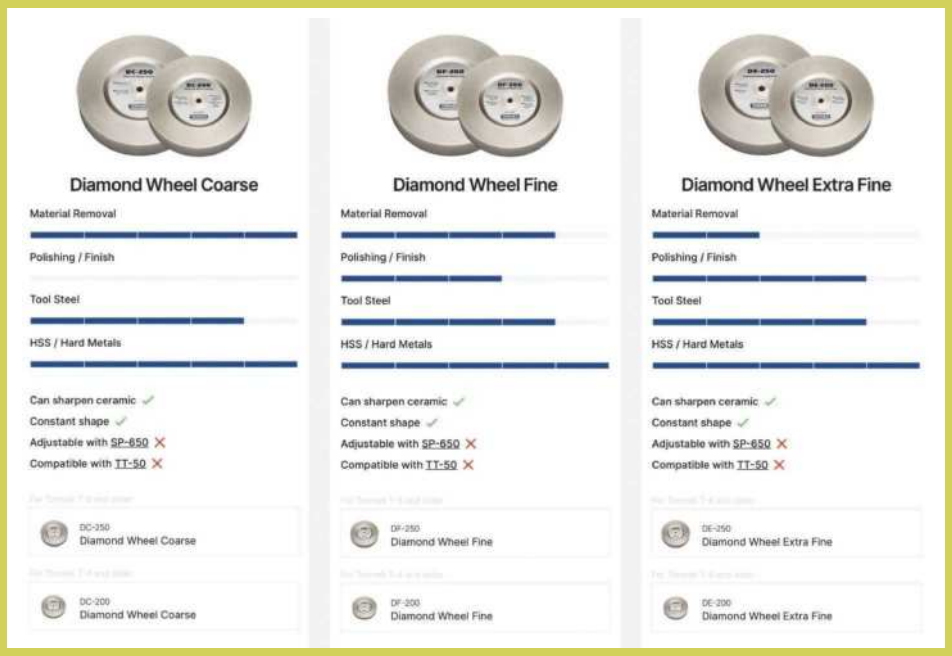
DE-200 DIAMOND WHEEL EXTRA FINE – Constant shape & mirror finish for the Tormek T-4

This diamond wheel provides an extra smooth finish and owing to its 1,200 grit size, is especially suited for sharpening carving tools and knives, with minimal steel removal.

GRINDING WHEEL GUIDE – WHICH GRINDING WHEEL DO YOU NEED?

Before deciding on which grinding wheel is suitable, start by looking at your needs and type of sharpening. Ask yourself whether you intend to sharpen different types of tools with different angles, or perhaps you want several characteristics in the same single grinding wheel? Are you looking for the smoothest surface finish? The answers to these questions will determine which is best suited. The two photos opposite allow you to compare a grinding wheel's qualities and characteristics, allowing you to find the right one.





EXPLANATION OF TERMINOLOGY

Material removal (0-5)

Determines how efficient a grinding wheel is at removing material from the tool being sharpened. A higher degree of material removal means that the grinding wheel is more efficient at removing material, so repairing or reshaping an edge will therefore be quicker.

Polishing/finish (0-5)

Determines how finely polished the grinding wheel makes the sharpened surface. A higher score in the polishing/finish category means that the grinding wheel provides a higher degree of polished finish on the tool after sharpening, and less 'scratch marks' remaining as a result. A high score in this category is desirable for fine carving tools, other applications where an extremely smooth cut is required, or those looking to achieve a mirror finish for an enhanced visual appearance.

Tool steel (0-5)

Determines how well suited the grinding wheel is for sharpening common tool steels, which are often used in hand tools. A higher score in this category means that the grinding wheel is better suited to sharpening common tool steel types.

HSS/hard metals (0-5)

Determines how efficient the grinding wheel is at sharpening HSS, exotic alloy steels, tungsten carbides or other hard metals, which are often used in the manufacture of turning tools and specialised knives. A higher score in this category means that the grinding wheel provides more efficient sharpening of such hard metals.

Can sharpen ceramic (yes/no)

Defines whether or not the grinding wheel is capable of sharpening ceramic – i.e. ceramic knives. Since ceramic is generally such a hard and brittle material, only certain abrasives can therefore be used to sharpen it.

Constant shape (yes/no)

Defines whether or not a grinding wheel keeps its exact shape over time. A diamond grinding wheel will never go out of true or in any way lose its shape, as long as it's handled and used correctly. This makes setting up sharpening easier as you can always keep the same settings even after switching between different diamond grinding wheels.

A grindstone will go out of true and lose its shape over time and regular use, and therefore require truing. This makes it reparable if minor damage occurs.

Adjustable with SP-650 (yes/no)

Defines whether or not the grinding wheel is compatible with the SP-650 Stone Grader. This jig is used to adjust the characteristics of certain grindstones for a coarser or finer surface. Note that the Stone Grader should never be used on a diamond grinding wheel, as it will destroy the diamond coating, thus rendering it useless.

Also note that the fine side of the Stone Grader can be used to clean up Japanese Waterstones; however, it can not be used to adjust their grit characteristics and you should never use the coarse side of the jig for these particular grindstones.

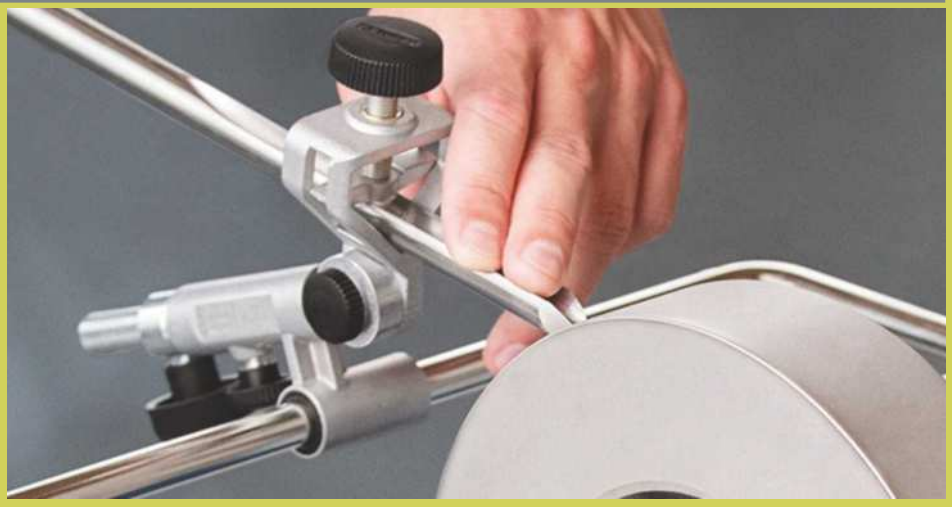
Compatible with TT-50 (yes/no)

Defines whether or not the grinding wheel is compatible with the TT-50 Truing Tool. Used to true a grindstone that's gone out of shape and needs to be made completely round again, note that, as before, the Truing Tool should never be used on a diamond grinding wheel.

SHARPENING WITH DIAMOND GRINDING WHEELS USING THE TORMEK WATER-COOLED SHARPENING SYSTEM

Consistent shape & flat bevel

Tormek is happy to offer diamond grinding wheels in three different grades: coarse (360 grit); fine (600 grit); and extra fine (1,200 grit). Diamond is the world's hardest material and functions optimally with the machine's low wheel rotation speed. Using any of these grinding wheels will allow you to sharpen all types of materials, including steel, HSS, ceramics and carbide.



Features

- Sharpens all materials;
- Keeps a constant diameter and shape, which simplifies jig settings and allows you to sharpen a completely flat bevel on the side of a grinding wheel using the MB-100 Multi Base;
- Apply a low pressure when sharpening – let the diamonds do the work for you;
- Use less water in the water trough compared to when sharpening with grindstones;
- When sharpening using water, always combine with ACC-150 Anti-Corrosion Concentrate in order to prevent rust;
- Lower the water trough when you finish sharpening; this will allow the diamond grinding wheel to drain;
- Diamond is the world's hardest material – twice as hard as CBN and therefore ideal for sharpening at a low speed;
- CBN is commonly used when sharpening with a high rotation speed; diamond would be broken down by the high temperature;
- Thanks to Tormek's low rotation speed, you'll never reach temperatures that are harmful to diamond, and these grinding wheels can be used to sharpen all types of materials;
- Look to your own needs when deciding which grinding wheel to choose.

Grinding wheel structure

Tormek's Diamond Wheels are constructed with a precision machined steel frame. The frame is coated with a single layer of diamond grit that's electrolytically anchored with nickel. There's also a layer of diamond on the edge, which facilitates sharpening on the side of a grinding wheel with the MB-100 Multi Base, for a fully flat bevel.

Use a low sharpening pressure

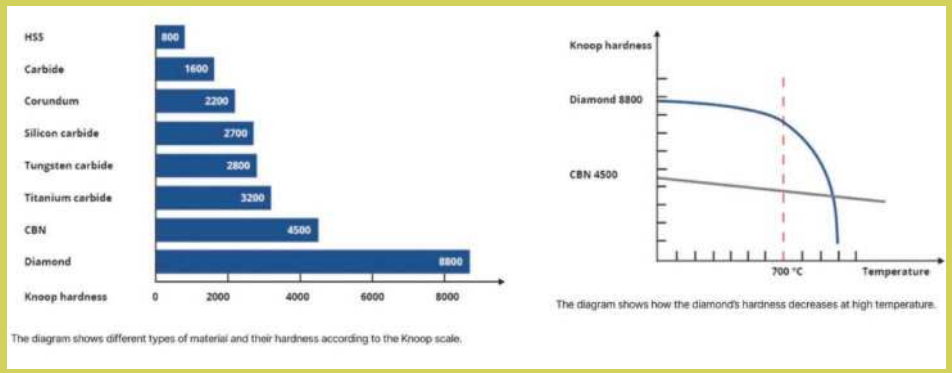
New diamond wheels are sensitive to high pressure since the grits are very sharp. Therefore, Tormek advise users to sharpen with a very low pressure at the beginning. You'll notice that the diamond grinding wheel seems quite aggressive with the first few sharpenings, and produces a coarser surface.

After a short break-in period, the diamond crystals will stabilise to a uniform level and afford you a finer surface. When sharpening with diamond, always use a lower sharpening pressure in comparison to normal grindstones. If you're unsure, start off low and gradually increase as you go.

DIAMOND & CBN – WHAT'S THE DIFFERENCE?

Synthetic diamond is ideal for tool grinding and used in the manufacture of whetstones when highest performance is prioritised. According to the Knoop scale, shown opposite, CBN – Cubic Boron Nitride – is classified as the world's second hardest material. The diamond grits are harder and maintain the cutting properties better in comparison to CBN, which means that sharpening with diamond is therefore faster.

CBN is better suited to sharpening with a traditional bench grinder. The high speed generates heat, which would break down the diamond grits. Using the Tormek method, which involves sharpening at a low speed – 90-100rpm – you're given the opportunity to sharpen using the world's hardest material – diamond – since no harmful heat is generated in the process.



Sharpening with a low rotation speed is always beneficial, and importantly, there's no risk of overheating your tools.

An addictive ANTIDOTE

Barrie Scott visits **Mike Abbott**'s green woodworking school and speaks to some of his students who're thoroughly hooked on this enjoyable and relaxing pastime

A student making the initial cut to insert the froe and cleave a log

Mike Abbott demonstrating the 'bounce' quality test

Photographs by Phil Callow – philcallow@mac.com

Ruth Busbridge in her garden with the chairs she's made

Ruth Busbridge works as a database programmer. Highly cerebral stuff and performed sitting indoors with hi-tec kit. She has, though, found an activity that's a complete contrast for unwinding: the satisfaction of hand and eye work gained from the pre-industrial practice of green chairmaking.

Over some 30 years of undertaking various week-long courses, she's managed to create a wonderful collection of ash chairs. Set around her table, each chair has its own charms. The design chosen at the time, one could speculate, has its own significance and associated memories.

The latest addition to the tribe is the bright, fresh looking number at the centre of the five chairs pictured opposite. The higher back is a useful choice as is the curve on the rear legs and spindles, as it's extremely comfortable.

Her teacher throughout these years, Mike Abbott, talks of the need for 'bounce' as a measure of good design and construction in green ash chairs. He provided a demonstration when I looked in on one of his classes back in the early autumn. He threw a chair down so that it'd land on one leg, with enough force to fracture lesser furniture – and bounce it did, without so much as a creak!

The natural springiness of ash and the strength of cleft timber, allowing for use of the light components, combine to provide a little give as backbone meets woodwork – instant osteopathy in fact!

Class at work with the second stage – reducing timber with drawknives while at the shavehorse

The perfect tenon

An interesting factor in this design of chair is that the rails connecting the chair legs are dry fitted – no glue or pegs are used. The tightness of the joint is key here. Many will know Mike Abbott's work in this field, not least for the books he's written on the subject. Mike currently holds chairmaking courses at his woodland workshop situated out in Worcestershire farmland. In his quest for the perfect round mortise & tenon, Mike now uses the Veritas tenon cutter. Having worked his way through earlier versions of the device, he's now settled on the Veritas $\frac{5}{}$ for the mortises – $\frac{1}{}$ compression. These he imported from Canada and the USA respectively where imperial measurement is still the norm. The cutting action is akin to the workings of a hefty pencil sharpener and can be used in a hand-brace, but more accurately in a battery drill. The built-in spirit level on the cutter is designed to further increase cutting control.

A custom in Mike's classes is to put these dry joints to the test. He secures a newly assembled chair at head height from a handy beam or branch and invites the student to grab hold and hang their full weight from it. It works; and there in Ruth's garden are examples of how it continues to serve this very purpose – for years to come.

At the leisure end of the workshop, above the wood-oven 'complex,' is a curious wooden

cupboard, which turns out to be a drying unit – a refinement in green timber jointing: controlling the moisture content of components. Steam-bent back legs and spindles are dried in a separate unit with hot air fed by ducting from the oven, to consolidate the shaping. This, however, reduces their moisture content and so begins the shrinking process. If the tenoned rails are fitted tightly when still green they will, in time, shrink more than the mortise and therefore the joint will loosen, so they too need a few hours in a warm box to acclimatise.

A further consideration is that rounded timber, when drying, will tend to shrink to an oval shape. It's then expedient to set the wider part of the oval tenon in line with the grain rather than running across it and risking a split. These fascinating, finer points are discussed in some detail in Mike's book, *Going With The Grain*.

The froe is an evolved tool that's not been bettered for centuries when it comes to cleaving lengths of green timber. The metal head is a wide, short wedge – anything from 75-406mm long – that's driven into the end-grain of a log. The wooden handle acts as a lever to twist the blade, widen the split and also, where needed, control the cut against going off course.

The Veritas tenon cutter in action

2023 COURSE DATES

- 19–23 June
- 3–7 July
- 17–21 July
- 31 July–4 August
- 14–18 August
- 28 August–1 September
- 11–15 September

To find out more about Mike Abbott's green chairmaking courses, visit the website: **www.living-wood.co.uk**

There are knacks to the process, such as inserting a wooden wedge in a partially cleft log to prevent the split springing closed; this allows the froe's position to be adjusted. Once mastered, a nice piece of clean ash will cleave in two very tidily. The split "talks to you" as one green woodworker revealed. A drawn out tearing sound is given off as it starts to go.

The cleaving brake is another simple but effective device for holding a log in position for froe cleaving. In essence, it's a pair of stout horizontal timbers secured together, tapering into a 'V' shape. A tightly forked branch works admirably. The taper serves to accommodate different log sizes and the downward pressure of cleaving holds it in position.

Woodworking is full of jigs and other such useful holding devices, such as the popular bench hook or comma clamp – the simple time proven efficiency of green woodworkers' devices have their own appeal.

Woven seating

The Mike Abbott school includes woven seating – the business end of the chair. The various patterns make an attractive, comfortable finish. Materials include hemp, sea-grass and even an African palm fibre called kambaa. There's rush and a synthetic variety made from paper like the old 'Lloyd Loom' furniture. More unusual and perhaps closer to the subject of woodwork are the bark weaves: wych elm, western red cedar or hickory bark. It's the inner bark or bast, which is surgically taken from a log after the removal of outer bark.

I can see the addiction of this pastime but after nearly 40 years in the timber trade, I have a foolish resistance to paying for the privilege of working. I'd certainly like some of these chairs around my table, though!

Steam-bent legs and spindles in the drying cabinet

FURTHER INFORMATION

The Wilson Art Gallery and Museum – **www.cheltenhammuseum.org.uk**
Kelmscott Manor – **www.sal.org.uk/kelmscott-manor**
William Morris Gallery – **www.wmgallery.org.uk**
The Victoria and Albert Museum – **www.vam.ac.uk**

WW PROFILE

The Wilson holds an internationally important designated collection of the British Arts and Crafts Movement, inspired by William Morris

WILLIAM MORRIS

Master of crafts

Recognised as one of Victorian Britain's most significant cultural figures, there's more to **William Morris** than just wallpaper, as **Peter Scaife** discovers

William Morris by Frederick Hollyer, photographed in 1887 aged 53

Ever play that word association game? You say eggs and I say bacon. You say speed and I say limit. That is, the first thing that comes into your head. And if you give the name William Morris to anyone, chances are their response will be the word wallpaper...

... which is fair enough, but William Morris was responsible for vastly more including pieces of furniture, which were influential on design and workmanship over many decades. A whole library has been written about him, his circle and followers, so I won't try to capture it all here. His name, however, has come to my attention on a couple of recent occasions, and a few pointers might therefore be of interest.

Water House, Morris' childhood home; renovated in 2012, it now houses The William Morris Gallery

Strawberry Thief (furnishing fabric) by William Morris, 1883 – Victoria and Albert Museum, London

A wooden pattern for textile printing from William Morris' company

'St George Cabinet' – designed by Philip Webb, painted by William Morris, manufactured by Morris, Marshall, Faulkner & Co., 1861–2, England

Photographs © Victoria and Albert Museum, London

Stained glass panel, designed by William Morris, made by Morris & Co., 1872–1874, England

A revolutionary force

William Morris died in 1896, aged 62, having excelled in both quantity and quality with his art, writing, publishing, making and designing. To sum up Morris' career in a very few words, he saw the condition of the working classes – at a time when neither health nor safety were of much importance – and tried to get them out of London and into the country. That was with the aim of producing good quality craft for the workers in the manner of medieval guilds; trouble was, he was overtaken by the advent of machinery and couldn't compete financially.

Reading material

So, what can you do to get a glimpse of him? Let's start with a couple of books, which are still available online: **1)** *William Morris* by Christine Poulson is a good place to start for a general overview of his life and times as well as achievements; **2)** *Good Citizen's Furniture*, by Annette Carruthers and Mary Greenstead, deals with the contents of The Wilson Art Gallery – **www.cheltenhammuseum.org.uk** – in Clarence Street, Cheltenham.

Galleries & museums

If this doesn't sharpen your appetite to learn more about the Arts and Crafts movement, I'll be very surprised and you can go to the gallery and see for yourself.

That's one place to visit; another is Kelmscott Manor – **www.sal.org.uk/kelmscott-manor** – which is also situated in Gloucestershire. Morris lived there for the last 25 years of his life and it's recently undergone a £6,000,000 renovation.

I'll mention one more here, which was formerly his home in east London – the William Morris Gallery – **www.wmgallery.org.uk**.

If you look online, however, you'll find plenty more of interest across the country, especially the Victoria and Albert Museum in London – **www.vam.ac.uk**.

Who did he influence?

Famous names included Philip Clissett (*1817–1913*) who once claimed he could make a chair in a day; Ernest Gimson (*1864–1919*); Ernest Barnsley (*1863–1926*); his brother Sidney (*1865–1926*) and people were still talking about them when I was young; Ambrose Heal (*1872–1959*) of the family firm of that name; Gordon Russell (*1892–1980*) who worked on simple furniture during World War II; as well as contemporary makers John Makepeace and Alan Peters.

Not everything Morris said has been welcomed, however. He once commented that the Gloucestershire village of Bibury, with its 750-year-old cottages built as wool storage for monks, was the most beautiful in England; now it's besieged by American and Japanese tourists.

Photograph © Victoria and Albert Museum, London

Table, designed by Phillip Webb, made by Morris, Marshall, Faulkner & Co., circa 1865, England

Photograph courtesy of The Cheltenham Trust and Cheltenham Borough Council

William Morris table, 1856

CHISEL RATING

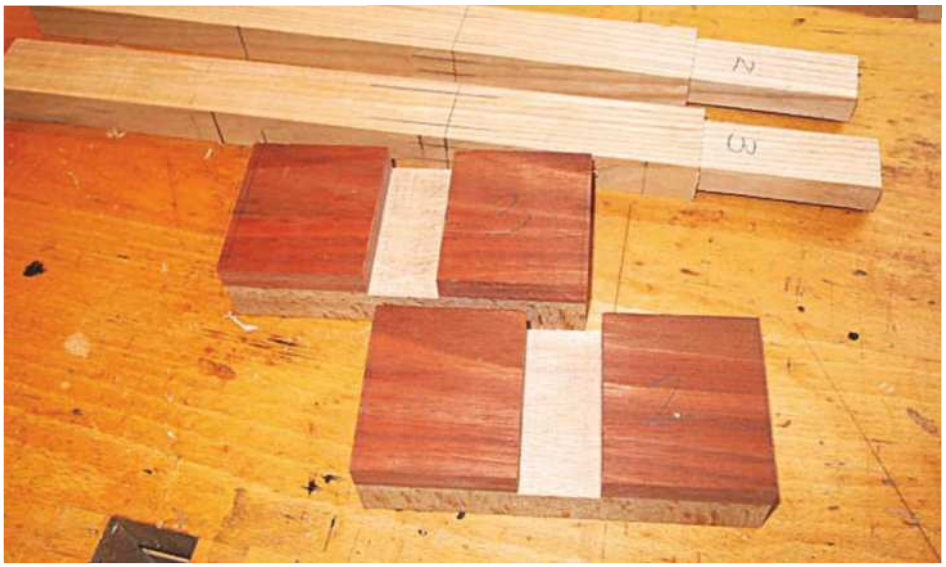
THE JOY OF SCRAP

Phil Skinner made three mallets and three cutting gauges from timber offcuts

Like most woodworkers, I have a store of scrap that I'm convinced will come in useful some day. Shown in this article are two little projects that can be made in a weekend, which offer a great introduction to making your own tools. They're great to use or give away as gifts.

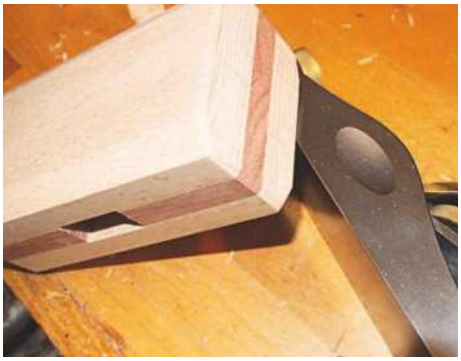
The small mallet is easy to control and I was glad to make the gauges because having several means that each can be set to a particular measurement, thus speeding up work. I can pick them up and know the setting is correct, which is a definite bonus.

1 The small mallet is made from beech, jarrah, ash and leather. The handle is 270 × 30 × 20mm and the head measures 130 × 60 × 50mm. The head comprises of three pieces and I had to fit the finished size to what I had in the scrap bin



2 I had enough wood to make three mallets – two of which I gave away. I ripped and crosscut the wood to provide parts for all the mallets. With more thought, I would've matched the handle tenon thickness to that of the jarrah in order to make the whole construction easier. Start by making a tenon on one end of the handle, which is long enough to go through the handle of the finished mallet plus a few millimetres to shape. Glue the wood for the head together and make a mortise for the handle. I did this by cutting bits of wood to make a sandwich, which formed the mortise, hence making the handle tenon the same thickness as the wood in the middle. Be careful with the glue – you can use the handle tenon as a spacer and remove it before the glue sets. If you wish, you can make a slight slope on the sides of the mortise to allow the wedges to open the tenon for a very secure fixing. However, as it's a small mallet designed for knocking things gently, this may not be required. Begin to shape the handle. I made mine an octagonal shape by creating curved chamfers to fit my hand more comfortably

3 Shape and finish the handle to suit your personal requirements. You only need apply a finish to the part that'll be in contact with your hand



4 Once the head is glued together, clean up the surfaces, add chamfers to all edges to give it a more pleasing shape, glue 3mm-thick leather to one face and trim off the excess when dry. I put a 5° slope on the faces of my mallet, which afforded me a good striking angle for control

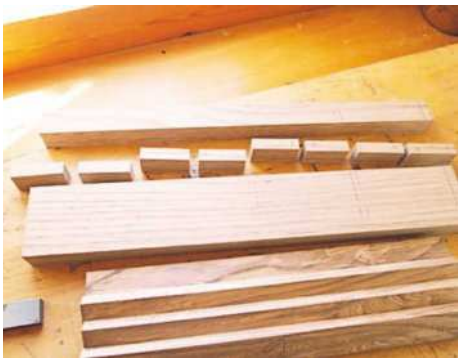
5 Apply a finish to the head's surfaces, keeping it out of the mortise, allow to dry, then fit the handle. Apply glue to the mortise, slide in the tenon and fit wedges; clean off any excess glue, tidy up the protruding end and the finish, then stand back and admire!

CUTTING GAUGE

BEEF IT UP

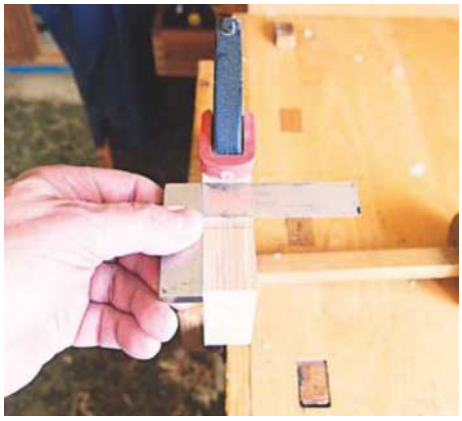
This is a light mallet but it can be beefed up with the addition of brass bar fixed through the head, or you could make a pocket in the wood to accept some lead shot and trap it in there when the head is glued together. A little polyurethane glue will hold the shot together and stop it rattling about

1 A friend made me a supply of 8mm brass thumbscrews, which I use in 8mm jig-making inserts from a kit. You could use 8mm bolts and modify them to suit or ask a local engineering company to make you some. The blade is taken from an old jigsaw and shaped to suit, or you can find an online supplier. Again I made three, from olive ash, rosewood, rosewood veneer and oak. None of the exotics are essential and other woods can be used, but I happened to have these bits lying around



2 The oak fence/stock material was prepared to 25mm thick, then ripped into component parts. The ash arm was prepared to 300 × 25 × 12mm, so it was the same thickness as the thin strip in the sandwich's middle. The oak piece was big enough for me to cut three at 85mm long and finished head size was 85 × 60 × 25mm. The threaded insert strip is based on a 25 × 25mm screw length and cut into pieces from which to build the sides of the manufactured mortise that the arm will run in. Mark them to go back together

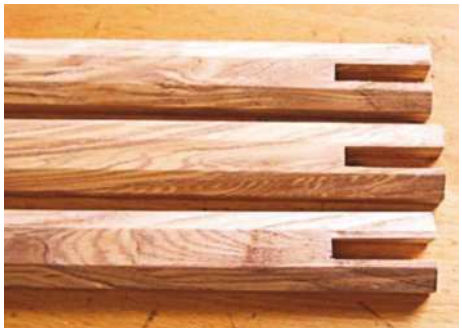
3 The parts cut and ready to glue together for making the marking gauge's stock



4 To make the mortise for the arm to run in, start by using glue to fix one side of the mortise, clamp until set, then use this to set the other side using the arm as a guide in order to achieve the correct spacing. Don't be afraid to get a tight fit now as the arm can be trimmed to adjust the fit at a later stage

5 Mark the screw insert hole and drill the holes. So there's no blow-out, place a spare bit of wood in the through mortise. I counterbored the hole so the screw insert would sit just below the surface. Mark the size and shape of the curve on the opposite edge to the hole, then cut, shape and finish this edge. If you intend to glue on an exotic wood surface for the wood to run on, now's the time to do this. Clean up afterwards and remove all the sharp edges

6 Before starting on the arm parts, I made a jig, which would allow me to plane the edges at an angle; this will offer a better sight of the cutting edge during use



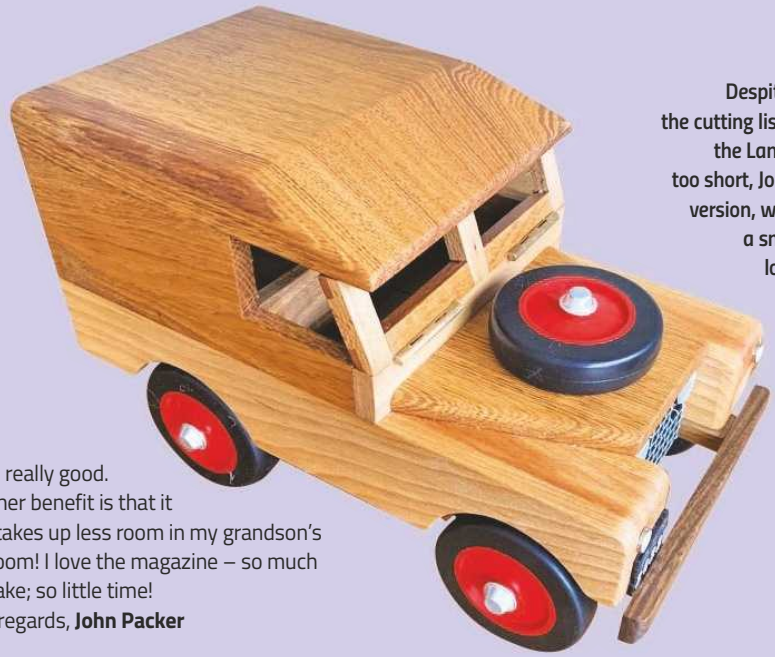
7 Mark out and cut the blade's housing. I cut a slot, then made an insert with a slope to match the wedge, which I glued in, then located a small dowel to add extra grip. It's important not to make the slope on the wedge too steep; I worked on about 5°. Make and shape the wedge so that it supports the blade. I made a 10mm plastic insert disc to go under the screw insert so it won't mark the wooden arm and leave unsightly marks. I finished the whole tool with a couple of coats of Danish oil cut back with 400 grit abrasive so as not to alter any of the critical dimensions

8 This photo shows various components during construction with different curves on the top to suit the hand, fitting the arm snugly in the mortise, the shape of the arm and wedge, shape of the blade and protrusion of the locking screw. This is just the beginning and I've made them to custom-fit my specific hand size

LETTERS

LETTER OF THE MONTH

A SHORT & SWEET LAND ROVER REMAKE



Despite misreading the cutting list and making the Land Rover sides too short, John's modified version, which occupies a small footprint, looks fantastic

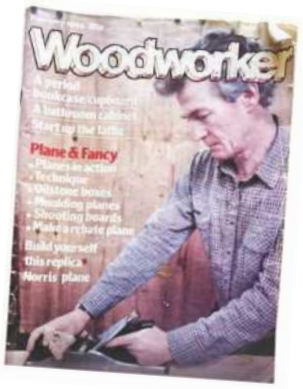
Hi Tegan,
Having just received the latest edition of the magazine, I thought I'd send you a few photos showing my version of Peter Dunsmore's much-loved Land Rover project, featured in the December/January 2021 issue. I'm sure you've seen many variations, and as you said in a previous issue, this article has inspired many readers to have a go at making their own.

I might be the only person daft enough to misread the cutting list, though, using 12in rather than 1ft 2in stock for the sides, but a couple of adjustments on the fly produced a short wheel-base version, which, in my opinion, looks really good.
Another benefit is that it also takes up less room in my grandson's bedroom! I love the magazine – so much to make; so little time!
Kind regards, **John Packer**

Hi John, well, if you hadn't have mentioned the short wheel base dilemma we'd never have noticed your Land Rover was anything less than perfect! It sounds like the cutting list misread was something of a happy accident, and we're thrilled to hear you're pleased with the end result, as is your grandson! We hope you find the time to make many other projects as the year goes on! Best wishes, **Tegan**

NORRIS PLANE RESURRECTED

Dear Tegan,
In February 1983, my husband Cliff Willetts was featured on the front cover of *The Woodworker* along with his replica Norris plane. The plane was made as part of his special final metal exercise while studying at Shoreditch College. Cliff was asked by the magazine, in response to constant demand for information and details relating to the legendary firm of T Norris & Son, to write an article and publish plans showing how to make it. These plans were published in this very edition and, as a result, we sold a great many full-scale drawings. We also had a visit from the Editor at the time, who took this photo. Unfortunately, while moving house and with everything placed in storage, rust got into the plane's steel parts, which was devastating. Due to health issues, unfortunately Cliff was unable to do the necessary work, but with the help of friends and contacts, we've been able to restore the plane to its former glory.



Cliff Willetts and his replica Norris plane, as featured in the February 1983 edition of *The Woodworker*

We advertised our very successful woodturning courses in the magazine for many years. I'd love to hear from anyone who purchased the plans and went on to complete the project.
Yours sincerely, **Joan Willetts**

Hi Joan, thank you so much for writing in and telling us the story behind this special issue. It sounds like Cliff's story sparked a great deal of interest and inspiration among readers. Even more heart-warming is the fact you've been able to rejuvenate the plane and give it a new lease of life – I must say, it looks fantastic. We urge any readers who've purchased plans and made their own planes over the years to get in touch and share your experiences. Thanks in anticipation and we look forward to seeing how this thread progresses. Best wishes, **Tegan**

Cliff's wonderful Norris plane has been restored to its former glory

NAME THAT WORKMATE

Dear Editor,
Please could you help me identify the model number of my Black & Decker Workmate? It doesn't appear to carry any sort of label, but was bought around 1981. I'd like to get some spare parts for it, but realise that knowing the model number is the first port of call.
Thanks in advance,
Tim Boyce

The model number of Tim's Black & Decker Workmate has yet to be identified

Hi Tim,
Unfortunately I haven't got an image of this particular model. It's certainly not a very early vintage Workmate with the characteristic aluminium H frame. I suspect it's a later '80s model, with an all-steel construction, and may even be a WM 626 E027. I found an image online which you might like to compare. I noticed yours has a missing rubber foot. Again, if you do an online search for vintage Workmates, you'll probably find someone who has the part you need. Have you had a look under the wooden vice jaws? A model number may well have been printed here by the Irish manufacturers. Unfortunately, as a company, Black & Decker kept next to nothing in terms of the Workmate's history.

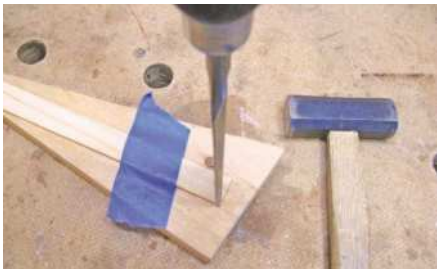
I hope you're lucky in obtaining the replacement part you're looking for and wish you all the best with future woodworking projects. Best wishes, **John Greeves**

The Workmate's vice jaws

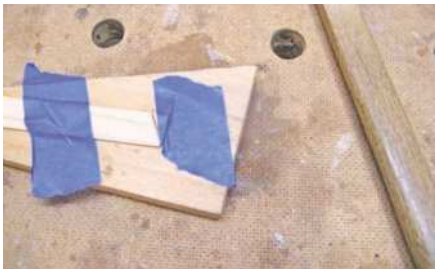
READERS' HINTS & TIPS

For the next nine issues, in conjunction with Veritas and Axminster Tools, we're giving one lucky reader per month the chance to get their hands on a fantastic Veritas apron plane with PM-V11 blade. Ideal for trim carp entry and featuring a ductile cast-iron body, its unique side wings allow for a comfortable, firm grip. To be in with a chance of winning this great piece of kit, just send your top workshop hints, tips or pointers – indeed anything that other readers may find useful in their woodworking journeys – to **tegan.foley@dhpub.co.uk**, along with a photo(s) illustrating your tip in action. To find out more about Veritas tools, see **www.axminstertools.com**

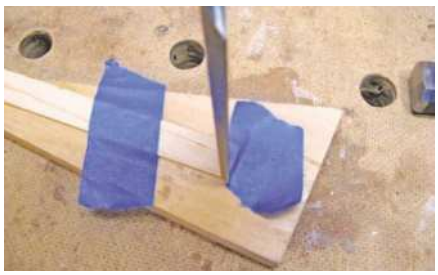
HANDY HINT: NO SHOOTING PIECES



Now and then, we have to chisel a strip or small piece of wood, whether as a shim or for a fix in a woodworking project. With two hands engaged, one for the chisel and one the hammer, the strip needs a third hand or clamp to steady. My trick is to use a piece of masking tape for the job. If it's the offcut that's to be saved, I use two pieces for this purpose.
Charles Mak



A piece of masking tape acts as a third hand or clamp to steady the strip



If you need to save the offcut, two pieces of tape can be used

WOODWORKING POETRY

A few issues ago, we published a letter from **Doug Nicholls** regarding his collection of woodworking poetry. As promised, the first of these is shown below – enjoy!

Working wood

Our bowl
I turned some spalted beech
Into a bowl for you.
I hollowed it to the limits of my gouge's reach,
Made a lid from yew
And handles in an ancient Greek style,
With a finial in bronze.
I loved the care of the finish, taking it
Through the different grits,
Then several soaks in the finest oils,
And my favourite part, the beeswax royal-shine
Like plastic or stone;
From a rotten branch to this quartz tone.
My mix of techniques and materials
Made minus any wrongs
For human interaction as our special
Present inside each other,
Sister and brother.
Not a commodity,
But something useful for you from me

A POP OF COLOUR IN THE GARDEN

Hi Tegan,
Having submitted photos of my Land Rover build, which you kindly published in the October 2022 issue, I'd also like to show you my take on Peter Dunsmore's wishing well planter project, which was featured in the June 2022 edition. As you can see, I've added some colour to mine and rather than having a rectangular base, I opted for an octagonal one. While similar, the roof construction is slightly different and I also omitted the handle. A round plant pot fits neatly in the space created. I hope Peter, and others, like my design tweaks.
Best regards, **Tony Brooks**

Tony's colourful, octagonal take on Peter Dunsmore's wishing well planter

WRITE & WIN!

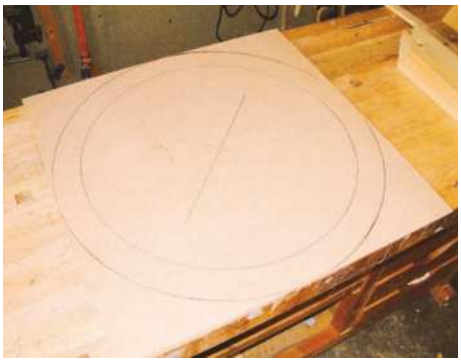
We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about the magazine's features, so do drop us a line – you never know, you might win our great 'Letter of the Month' prize, currently the new Trend ¼in 30-piece Router Cutter Set, worth over £100. Simply email **tegan.foley@dhpub.co.uk** for a chance to get your hands on this fantastic prize – good luck!

CHISEL RATING

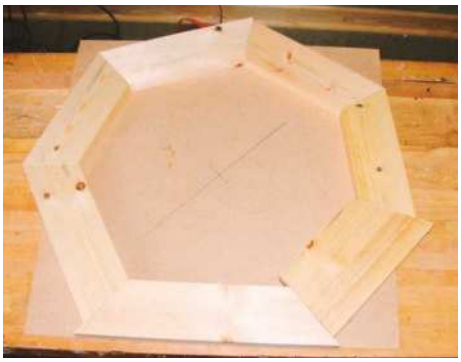
PORTHOLE PROJECT

WW PROJECT

When a uPVC window company fought shy of replacing a round window, **Charlie Bailey** bravely stepped in



1 Using a piece of MDF as a template, draw the window's inner and outer diameters



2 Mitre each segment and lay them on the template, ensuring to cover the outer circle

This project began as a result of receiving a phone call from a neighbour. He'd just had all his windows replaced with UPVC; that is, all except one. A round window, 2ft in diameter had been forgotten. It was in pretty poor condition, well beyond repair, and the window company weren't keen to make it, so I got the job.

Construction

There are many ways to make round windows. The one I removed consisted of two wooden rings, one with a smaller internal diameter to accommodate the glazing; these were just nailed together. They can also be made from four identical quadrants with a mortise in one end and a tenon in the other; these are then glued together to make the circle. I've previously made some particularly awkward shaped and odd frames by building them up in small, thinner sections. By ensuring the grain follows the pattern as much as possible, and by staggering the joints, a very strong, stable frame can then be produced. This also allows the use of all the short offcuts that build up over time – the sort you keep, knowing they'll come in handy one day.

This window is 75mm thick, so with the timber available, three layers 25mm thick were ideal. It makes the frame more stable if all the layers are the same thickness or mirrored around a central core (**Fig.1**). Without a jig it's very difficult to make a perfectly round frame; however, by making the frame over-size then trimming with a router and trammel bar, this can be achieved.

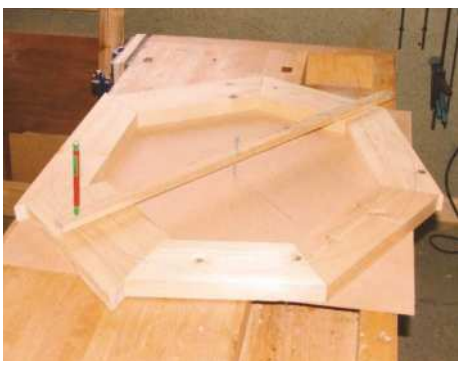
I used polyurethane glue for the frame and glazing bead. It has the advantage of being fast setting, but the other big plus with this particular construction is that there's lots of end-grain to end-grain joints and this glue creates a much stronger end-grain joint than the more traditional wood adhesives. PVA glue not only shrinks as it dries, but is also drawn down the joint's grain by capillary action, starving the joint of glue and thus making it weak. Polyurethane is not only initially more viscous, but expands as it cures, pushing the glue down the grain. A further advantage is that it fills any voids in the timber. Although this variety has no real strength, if more than a few millimetres thick, it does prevent water ingress into the joint.

Step-by-step

Use a piece of 6mm MDF as a template and mark the centre. Draw two circles for the frame's inner and outer diameter. The first layer can now be laid out – all the timber needs to be exactly the same thickness and the butt joints need to be a good fit, but as long as the circle is covered, then the overall shape isn't important. Glue is applied to the joints and cramped to avoid it pushing the pieces apart as it expands during curing; don't use pins as it'd be difficult to avoid hitting them during final shaping. Clean off any glue residue and re-draw the two circles.

Build up a second layer, staggering the joints, again ensuring the circle is covered. Apply the glue and use a spatula to spread a thin, continuous layer so that there's no voids, then cramp up.

Clean up the top face and draw the two circles again. Remove the MDF template and, with a bandsaw or jigsaw, cut just outside the outer circle. Use a jigsaw to remove most of



3 Glue the segments together. When dry, clean up the surface and redraw both circles

4 Repeat with a second layer, ensuring vertical joints are staggered, then glue up

5 Use a jigsaw to cut around the outside, leaving some waste. Repeat for the inner circle

the waste from inside the inner circle.

For the third layer, use the frame as a template to mark out the pieces, making them slightly oversize. Now glue and clamp the final layer, staggering the joints as before. At this point, temporarily glue the frame to a board – I used a hot-melt glue gun, but double-sided tape would also work. Using scraps from each layer, build up a centre section to the same height as the frame. Mark the exact centre and drill an 8mm hole. The drill bit will act as the centre pin here.

Before trying to cut anything, run the router round the frame's inside edge with the machine switched off to ensure that it's centred, then remove the waste until you're left with a smooth circle. Do the same for the frame's exterior. Use a rounding-over bit to round over the frame's inside edge.

Take the board and mark the position of the frame onto it, before removing the frame from the mounting board. Re-mount the frame on the board the other way round, taking care to ensure it's centred in exactly the same position as previously. Finish cutting the outside face of the frame, then cut out the rebate for the glass on the inside edge. Separate from the mounting board. Due to the frame sections having various grain directions, it's probable that some breakout will have occurred; fill any marks with a two-part filler and sand smooth.

I made the glazing bead from oak strips all around 2mm thick and just flexible enough to shape without breaking. Although it'd be very easy to end up with the bead glued in position, I decided to make the bead in the frame to ensure it was a perfect fit. If adequate care is taken, there shouldn't be any problems.

Start by making the bead wider than required, then cut it down to size. Cut one length of oak strip to exactly fit the internal circumference of the glazing rebate, then fit in position. Cut another strip to fit inside the first, apply glue sparingly but thoroughly and fit in position with the joints 180° apart, then cramp up. Build up subsequent layers until the bead is the same thickness as the depth of the rebate.

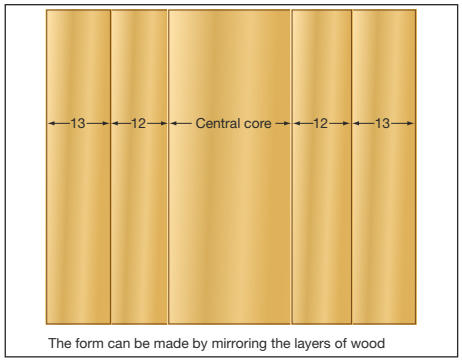


Fig.1 Window frame construction

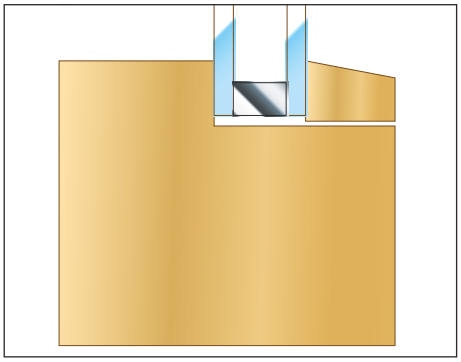


Fig.2 Glazing considerations

6 Cut and mitre oversize segments for the final layer, using the frame as a base

7 Apply glue to all surfaces and cramp the third layer to the frame. Clean up when dry

8 With the frame attached to a board, build up offcuts until level and determine the centre

9 Screw a piece of wood to the router fence and drill an 8mm hole – the trammel centre

10 Using a long straight router bit, gradually trim both the inner and outer circumferences

11 Mark the frame position, remove and mount upside down. Rout the rebate for the glass

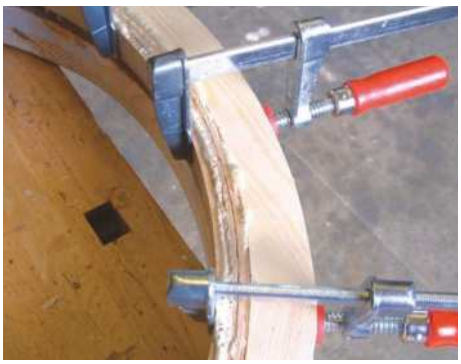
Push the bead slightly out of the frame and ensure it fits squarely within it. Mark all round with a pencil, remove the bead and cut along the line, checking that it's reasonably smooth. Fit the bead back in the frame, leaving enough room for the glazing (**Fig.2**). Mark the side of the bead and cut along this line.

Now fit the bead in the frame. It should be a good friction fit. Align the top edge and run a router around the bead; this gives you the desired moulding and also aids water run-off. I gave the window and bead two liberal coats of wood preservative and used a knotting solution, before priming and undercoating ready for fitting.

To fit this window, I first had to remove all the rendering around it, then use frame fixing foam to secure in place. The double-glazed unit was bedded in glazing silicon and the gap around the double-glazed unit was filled with more silicon before fitting the bead; this was held in place with four brass pins. As a final touch, everything was given two coats of gloss, both inside and out.

MAKE YOUR OWN TRAMMELS

It's possible to buy trammel bars for many routers, but I don't have one so chose to adapt the router's fence instead. I screwed a piece of timber to the fence so that it aligned with the router's base, then drilled an 8mm hole. I fitted this to the guide bars in the opposite way to normal. The fence on the DeWalt 625 has a micro adjuster, which is usable in this configuration, therefore making the trammel bar micro adjustable



12 Glazing strips are laminated from 2mm thick oak strips, which are glued together inside the frame

13 Cut the beading to width with a jigsaw, cleaning up the surfaces with a block plane

14 Check the fit of the beading in the frame, then add a profile with a rounding over bit

PASSING BUILDING CONTROL

There are exceptions to the usual rules and regs, particularly with listed buildings where discretion may be applied. Advice should be sought from your local council's Building Control Officer, who'll issue a certificate when the window is satisfactorily installed to show that it complies with Building Regulations; this may make life a lot easier if you ever come to sell the property. Charges for this will vary according to the local authority area in which you live.

The huge number of regulations concerning replacing windows is constantly being updated. You can find the latest via **www.planningportal.gov.uk**, but as a general rule, be aware of the need for adequate rapid ventilation, safety glazing, window guards where necessary, adequate means of escape and adequate thermal performance with suitable glass – usually double-glazed unless the building is listed. Also be aware that some requirements can conflict with others. Yes, it's a minefield, so endeavour to get the Building Control Officer on side

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1 Model of a Persian windmill at Deutsches Museum, Germany

The earliest windmills appeared around 1,500 years ago. Their widespread distribution geographically was due to simple principles underpinning both design and operation, and owing to their dependence on no physical features or climate, only the wind.

The first were developed in Persia in the 5th century; these featured vertical sails made from bundles of lightweight wood attached to a vertical shaft by means of horizontal struts. This particular design – called the 'panemone' (**photos 1** & **2**) – only has a modest level of efficiency.

Post mills

During the next few centuries, those designs in the Middle East and Western Asia grew in sophistication, and in Europe, from the 11th century onwards, post mills began to appear

The MILLER'S tale

As **Paul Greer** demonstrates here, owing to their size, solidity and precision, the wooden mills and watermills of yesteryear undoubtedly deserve the admiration we continue to give them to this day

(**photos 3** & **4**). These were made almost entirely of wood, with light varieties, like balsa, for the fan blades, and a stronger, heavier one, for the remaining structure. To offer protection from the elements, wood was painted or coated with resin.

Smock mills

The smock mill offered a further improvement, (**photo 5**), dating from the 12th century onwards. The most significant difference was its moveable top, which allowed the main body to be stationary, and therefore, larger and taller. A bigger body meant larger sails, and these could be set to catch the wind from any direction. Eight-sided versions were most popular, but these ranged from 6-12.

Tower mills

Appearing soon afterwards, tower mills (**photo 6**) now feature a rotating cap, and typically a much more robust body, made of brick or stone. Wood still featured in the form of sails and internal structure, however.

Moulton Windmill in the Lincolnshire village bearing the same name, is a restored windmill claimed to be the tallest tower mill in the UK; standing at 24.4m it comprises nine storeys (**photos 7** & **8**).

Worldwide windmills

England and Holland were the countries that used windmills most, and as such, played the biggest part in their advance. The Dutch went on to construct multi-storey towers, which allowed their operators to live there; whereas the English introduced a number of automatic controls, which boosted efficiency. Up to the start of the 20th century, both countries included wood among their building materials.

The earliest windmills were used to grind grain (**photos 9** & **10**), and drain or direct water. The Dutch also employed them in the manufacture of gin, mustard oil, paint and paper.

2 Persian panemones in Sistan, Iran

3 Post mill in Ashurst, Kent...

4 ... along with its central post

5 Smock mill in Dalham, Suffolk

In their 18th and 19th century heyday, Europe boasted around 200,000 windmills in total. An even larger number sprouted in the United States, where emigrants from Europe – especially Holland – had the expertise to do this.

The widespread introduction of steam power and electricity in the 19th and 20th centuries saw the decline of windmills, though they still prove useful in remote locations.

National Mills Day

Each year, on the second Saturday in May, Holland celebrates 'National Mills Day' (**photo 11**), when over 900 mills around the country open to visitors. Many are attractively festooned with flags and flowers to mark the occasion. Visitors are given a tour of the structure by the miller himself, who offers a thorough description of it, and explains how everything works. Fun activities are arranged for children, to help them understand in an entertaining way, and some may even be offered the chance to help the miller with turning the sails. The Mills Day event is free, but millers appreciate a contribution towards maintenance. Probably the best way to see more than one mill is by bicycle, and Dutch tourist offices provide maps of recommended routes.

The Molen de Otter, in Amsterdam, is the only wind-powered sawmill remaining in the country, while the Molen de Valk, in Leiden (**photo 12**), has been restored, and, besides grinding grain, also functions as a museum.

The value of windmills in Holland today is cultural, rather than economic. Even some of those that do remain are threatened with a reduction in power, as obstructions caused by higher buildings mean their sails can't catch the wind as well as they used to.

Watermills

A device known as the perachora wheel (**photo 13**) was devised during the 3rd century BC. This applied existing technology in a new way, letting mills produce much larger quantities of flour. Philo of Byzantium, an engineer and mathematician, was the first author to mention such an object, although, as he often wrote about others' inventions, it therefore may not have been his concept.

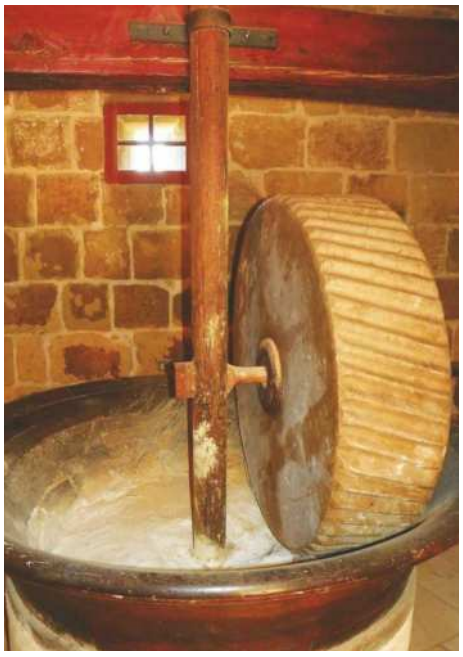
Commercial watermills were functioning in Roman Britain, and by the 11th century there were about 6,000 in the country. The Norman Conquest introduced a feudal system, and the practice of 'soke rights', obliging each member of the populace to have their corn processed only at the mill of the local manorial lord. This was common practice across Europe at the time, and continued on the mainland even after Britain had emerged from the feudal system.

Watermills continued to be important, and improvements to their design and farming techniques produced more food. However, with the Industrial Revolution, many country folk moved into cities. By the mid-19th century, the British population had doubled in less than 60 years, and the increased demand for food led to shortages. This left the country much more dependent on grain imported from countries like Russia and the USA. At first, these imports were restricted by quotas and levies known as 'the Corn Laws'. However, in 1846, these were repealed, and the resulting increase in grain imports marked the watermill's gradual demise.

6 Tower mill in Haigh, Greater Manchester

7 Moulton Windmill is claimed to be the tallest tower mill in the UK

8 Moulton Windmill, pictured here in 2005



9 Millstone for grinding grain

10 Millstone at Brixton Windmill

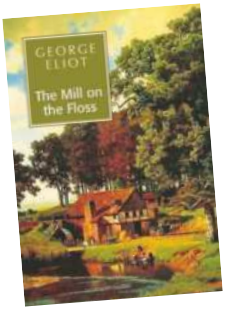
11 National Mills Day in Holland

13 Perachora wheel model

12 The Molen de Valk, also known as 'the Falcon', is a windmill built in 1785

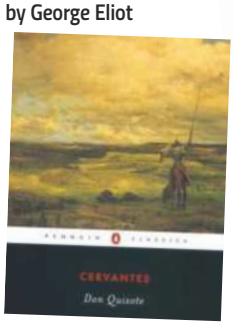
Windmills in literature & art

Mills figure in the works of two literary giants – George Eliot and Miguel de Cervantes. The former wrote a novel entitled *The Mill on the Floss* (**photo 14**) – the Floss being a river.

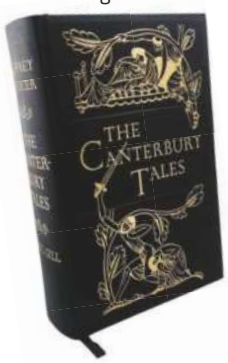


14 *The Mill on the Floss* by George Eliot

In the 17th century Spanish author's novel, *Don Quixote* (**photo 15**), the eponymous hero mistakes several windmills for knights on horseback, which, in his thirst for glory, he challenges in the name of chivalry. Though today this lengthy work is probably read much less than it used to be, Quixote's stance continues to live on in our language, when people taking issue with imaginary obstacles or non-existent opposition are said to be 'tilting at windmills'.



15 *Don Quixote* by Miguel de Cervantes



16 *The Canterbury Tales* by Geoffrey Chaucer

Another literary connection is *The Canterbury Tales*, by Geoffrey Chaucer (**photo 16**), which features 'The Miller's Tale' – regarded as one of his most ribald.

John Constable, the English landscape painter, is probably most famous for his portrait of 'The Hay Wain', but another highly-regarded one is 'Flatford Mill' (**photo 17**), which was completed a few years earlier, in 1817. The mill itself was on the River Stour, in Suffolk, and owned by his father, Golding, a wealthy corn merchant. Constable was largely self-taught, and used to make open-air sketches of the local countryside he loved so well, before using them to create his large paintings, known as 'six-footers', of which 'Flatford Mill' was the first.

In ages when technology was, for the most part, much simpler than today's, we still marvel at the great churches and cathedrals built then. In the same way, the size, solidity and precision of the wooden mills and watermills of yesteryear will always deserve the admiration we continue to give them to this day.

17 Flatford Mill (Scene on a Navigable River) (1816), by John Constable, oil on canvas, Tate Britain, London

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AROUND THE HOUSE WITH PHIL DAVY

Having renovated an old stone cottage and a 1960s house that both required a considerable amount of effort, not to mention cash, I didn't anticipate too much work ahead when moving to a new-build property. However, having finally moved in, it's quickly become apparent how wrong I was.

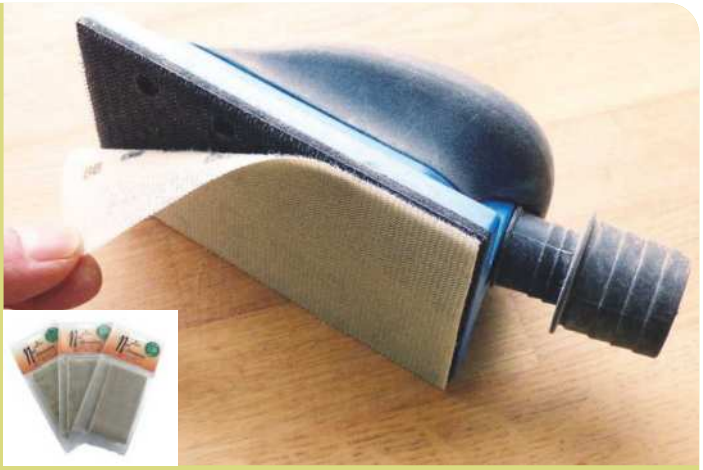
An independent snagging survey revealed some real corkers: dodgy pointing, damaged windows, poor plastering, faulty sealant – the list goes on – with 137 defects highlighted in total. But it was the substandard second-fix carpentry that was most disappointing. Did the chippy responsible slip through the net, with no formal training or qualifications? It does make you wonder…

Don't get me wrong – it's a lovely traditional design, spoiled at the finishing stages by shoddy workmanship. All the more galling when you know you could do some of the work to a far higher standard. A true reflection of the construction industry generally, then? Hopefully not, as there seem to be plenty of satisfied new customers out there with few complaints. The joys of new-build houses!

USEFUL KIT/PRODUCT
CHESTNUT NET ABRASIVE

Abrasives have come a long way over the past couple of decades. Anyone who remembers using glasspaper will know how quickly this clogs up, especially on paintwork. These days you can still buy the more traditional sanding sheets, though for efficiency it's hard to beat aluminium oxide mesh abrasives. Once they start to clog, you simply tap the sanding block to remove the dust.

If you've never tried them before, Chestnut Products is offering a small sampler pack of six hook-and-loop-backed (Velcro) sheets, consisting of 80, 120, 180, 240, 320 and 400 grit abrasives from Swiss manufacturer, Sia. Each sheet measures 125 × 70mm and is designed for hand sanding blocks such as those from Hermes or Mirka. Alternatively, for sanding curved surfaces, you could use a foam Flexipad. If you then choose to concentrate on one or two specific grits, similar packs of each grade can be purchased for £3 (five sheets) or £26.46 (50 sheets). Be warned, though – sanding could even become enjoyable!



SPECIFICATION

Typical price: £3 per pack
Web: www.chestnutproducts.co.uk
RATING – PERFORMANCE: 4.5 OUT OF 5
VALUE: 4.5 OUT OF 5

Each sheet measures 125 × 70mm and is designed for hand sanding blocks such as those from Hermes or Mirka

Q&A:
BISCUITS OR POCKET SCREWS?

Q When making a framed door for a cupboard from softwood or hardwood with a plywood panel in the middle, how do you decide how wide to make the rails and stiles? Is there a formula you can use to calculate these dimensions, such as a percentage of the door's width or length? For example, if I'm making a door 500mm long × 300mm wide, what should the width of the rails and stiles be?
K Nairn, London

A It's always best to make a scale drawing before cutting any timber, no matter how simple the design. That way you can get a pretty good idea if rails and stiles will look too heavy, too narrow or generally out of proportion. There's no hard and fast rule, though when using softwood for joinery work it's traditional to use stock sizes, planed timber (PAR) you can buy off the shelf. For a cupboard door, I'd suggest 75mm or 50mm timber would be suitable. These sizes are nominal, however, and give the dimensions before planing. So, 75 × 25mm sawn timber actually finishes at about 70 × 20mm after machining, while 50mm softwood finishes at about 45mm. With this in mind, try drawing rails and stiles at 70mm or 45mm to gauge the overall effect. You may find a compromise – say, 60mm – looks better.

If using hardwood then stock sizes are less relevant, as here it's only board thickness that's standard. That said, stick to nominal softwood sizes and you won't go too far wrong. If you have access to a planer/thicknesser, life becomes easier as you can prepare material to whatever size you like. Of course, you can still plane up components by hand. The top rail and stiles should be the same width, while visually it's better if the bottom rail is wider. In both softwood and hardwood, rails and stiles usually finish about 20mm thick – from 25mm sawn timber – though you may want to reduce this thickness on a small cabinet. Assuming the panel is about 6mm thick, it'll take up about one third the timber depth if using 20mm material.

You also need to consider the type of hinges used to hang the door. If using concealed cabinet hinges – e.g. Blum – these require 35mm-diameter holes, which can affect stile width. If using butt hinges, stile width isn't an issue as you only need to think about timber thickness

SPRING PROJECT:
OAK GARDEN TRAY

GOING POTTY

Takes:
A weekend

Tools you'll need:
Router, jigsaw, sander, drillstand

Phil Davy's handy garden tray – for transporting plants to the garden or holding a few small tools – makes use of recycled oak salvaged from an old plans chest

During a major clear out last year, I unearthed an old plans chest that had definitely seen better days. Although made from oak, it'd been exposed to the elements and most of it had rotted away as a result. Fortunately, I was able to salvage a few drawer fronts and sides, the timber displaying some lovely figure. It was limited in dimensions, and I wondered how best to use this attractive natural material. The answer came in the form of this garden tray, compact enough not to take up too much space but with sufficient capacity for transferring plants to the garden or holding a few small tools.

Slats for the base mean that drainage from damp plants or soil shouldn't pose a problem, though these could be fitted closer together to make a multi-purpose tray. Great for the home office or kitchen, though you may want to reduce overall size for indoor use, or adjust the divider spacings. As it is, you can just fit a 76mm-diameter plastic pot in each compartment.

If you don't enjoy cutting dovetails, this project is ideal for finger-jointing the corners. A dedicated finger-jointing router jig makes the technique straightforward, though if you have a decent router table, a sliding fence and sacrificial board will still make it feasible.

Dividers and handle fit into housings a third the thickness of the outer tray timber. To get a snug fit, it's best to rout the housings first, then thickness the divider material so this is a sliding fit. That way you're thicknessing to exactly match the router bit diameter.

Stop the housings 5mm below the tray's top edges. The handle and dividers are cross-halved so they slot together. Use brass or copper pins to secure them to the tray sides, though ensure to pre-drill holes first.

1 When recycling timber always remove old screws or nails first. If rusted, plan saw cuts to avoid defects

2 Inspect all surfaces closely for defects and cut off damaged ends. Thickness clean timber to 10mm

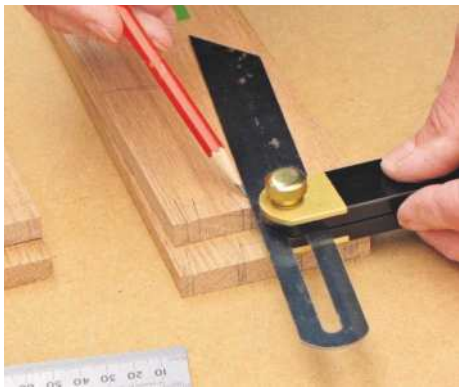
3 True up face edge of sides and ends with a bench plane and shooting board. Check with a straightedge

4 Trim ends square on a shooting board. Cramp pieces together, face edge down, and plane to width

5 Mark each tray component for width and cramp together. Place on a flat surface and plane to width

6 Saw sides and ends 2mm over-length for trimming joints later. Scribe shoulder lines for dovetails with a marking knife

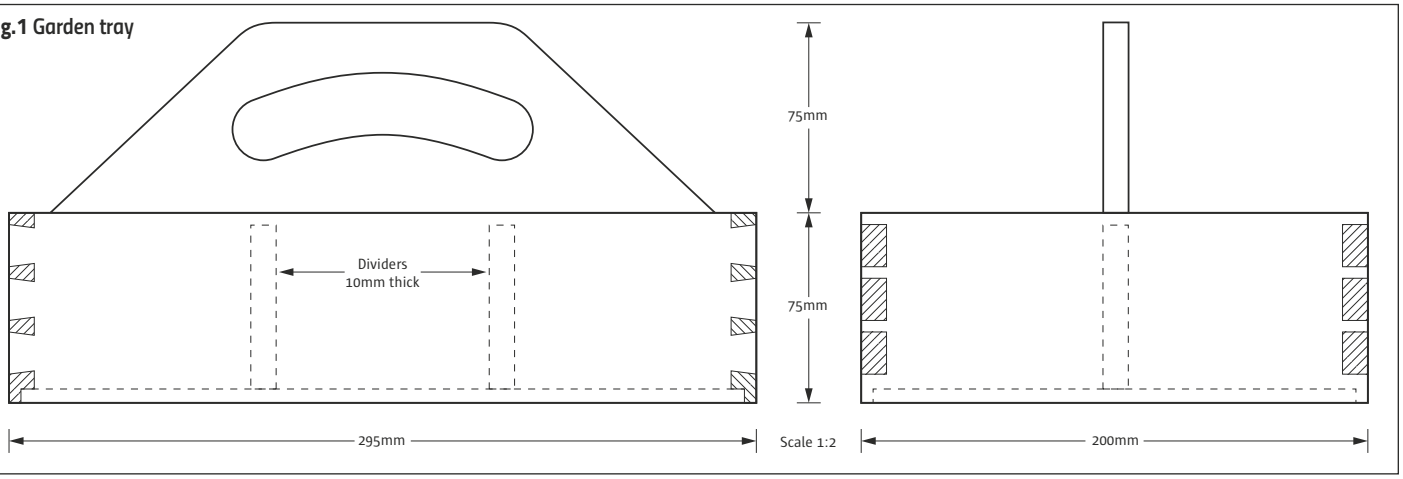
7 Space dovetails to allow for a 5mm rebate at the lower edge. Cramp boards together and square lines across

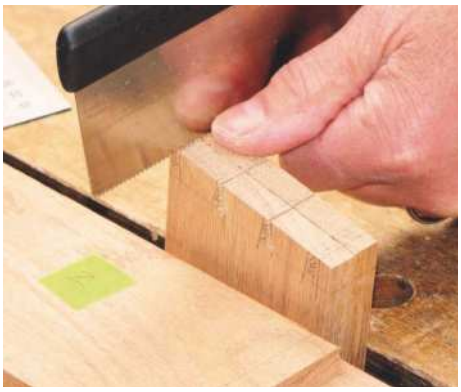


8 Mark out tails with a sliding bevel set at 1:8 – for hardwood – or use a dovetail marker gauge

9 Set the gauge to 5mm and mark the rebate for the bottom slats. Pencil in waste to be removed between the tails

Fig.1 Garden tray





10 Secure both tail boards tightly in a vice, so that they're at an angle. Cut down the sides of tails with a dovetail saw

11 Remove waste between the tails with a coping saw, keeping blade teeth clear of the shoulder line

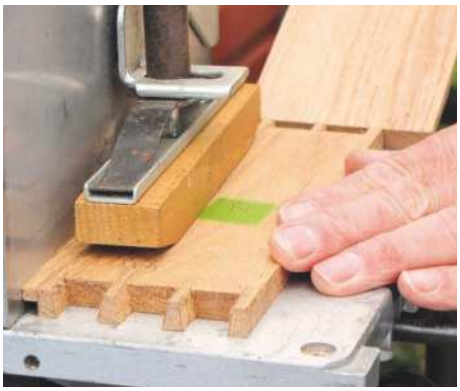
12 Next, cramp the square timber block along the shoulder line; this will keep the chisel upright when it comes to paring back between tails

13 Cramp the pin board in a vice and lay the tail piece across horizontally. Carefully mark out pins from the cut tails

14 Pencil in the waste between pins. Saw down pin sides to form the sockets, ensuring to keep the blade level

15 Remove waste with a coping saw as before, then pare back to the shoulder line with a bevel-edge chisel

16 Holding the chisel at the correct angle, trim sides of pins – sockets – as necessary. Check joints fit, and adjust as necessary



17 Create a 5mm-deep rebate along the bottom edges for the slats. Cut this on a router table to ensure accuracy

18 Cramp parts together and cut 3mm-deep housings for the dividers. Run the router against a guide batten

19 Housings are stopped 5mm below the top edges. Square rounded ends neatly with a chisel

20 Clean up the inner surfaces and check for fit. Glue and cramp up the tray, checking for square

21 Once the glue has dried, trim protruding dovetails flush with a finely-set block plane

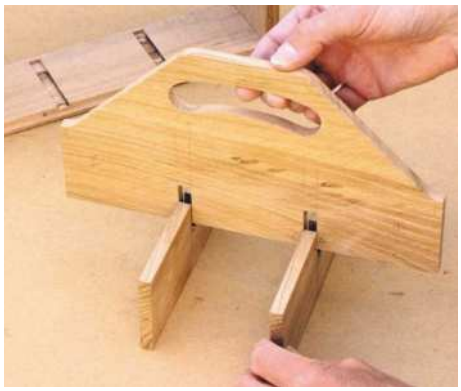
22 If required, glue the boards together to achieve sufficient width for the carrying handle. Thickness when dry

23 Draw the handle cutout with a flexible curve or arched steel rule. Ensure to allow sufficient width for a sanding drum

24 Mark hole centres and cramp the board to the backing material. Bore the cutout's ends with a 25mm flat bit

25 Using a jigsaw, remove the remaining waste between holes, then again for sawing the handle's tapered edges

26 Clean up the cutout with a 25mm sanding drum, or rasp and file if preferred. Smooth edges with various grits of abrasive



27 Slot the handle and dividers together. Mark out halving joints and carefully cut away the waste

28 Thickness slats to 24 × 5mm and saw to length. These can be pinned or screwed into the rebates

29 Rout a small decorative chamfer along the edges of the tray and dividers, then sand with a 180 grit abrasive disc

30 Brush on two coats of finishing oil, wiping off after a few minutes. Alternatively, add wax if the project is intended for indoor use

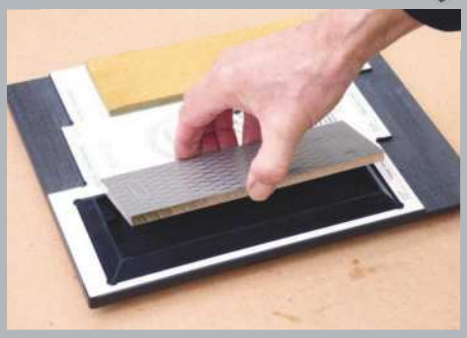
USEFUL KIT/PRODUCT

RIDER SHARPENING STATION KIT

Regardless of woodworking discipline, we probably all have our favourite method of sharpening chisels and plane irons, whether it's the way we were taught, or one that we stumbled across by trial and error. If you're looking for a reliable system, this sharpening kit from Rider ticks most of the boxes; it consists of a 13mm-thick rigid synthetic resin base with 228 × 88mm recess, for a sharpening stone, plus a fixed leather strop and polishing compound block. The board's overall size is 315 × 250mm and rubber feet ensure it stays put on the bench top during use.

Stepped cut-outs at opposite ends allow you to easily set up either a chisel or plane iron in a honing guide, without having to measure back from the tool's edge to establish the correct bevel. These cut-outs give primary and secondary bevel options – 25° and 30° – the most common angles, plus 45° – plane only – which is best suited to difficult grain.

The cut-outs give primary and secondary bevel options – 25° and 30° – the most common angles, plus 45°, plane only – for difficult grain



The supplied heavy diamond stone is reversible, with 400 and 1,000 grit faces

You'll need to buy a suitable honing guide as the board is designed for setting up a generic Eclipse tool

The heavy diamond stone supplied is reversible, with 400 and 1,000 grit faces. Its coarser side is for reshaping an edge tool when necessary, while the finer surface is for honing the secondary bevel. This is still quite coarse if you're used to having a polished steel blade from a finer waterstone, say, but good enough for general woodworking use. A rubber surround means it'll also remain in place if using the stone away from the base. This stone is a standard size at 202 × 64 × 8mm, so you could use an alternative type in the recess if you prefer. A cheaper kit is available, priced at £64.98, without the diamond stone.

You'll need to buy a suitable honing guide as the board is designed for setting up a generic Eclipse tool. Using the stops provided allows you to only hone plane irons or chisels at 25° and 30°. This is fine most of the time, though with some hardwoods or tricky grain you may need to alter the secondary bevel. Each end is clearly marked, so unless you have poor eyesight, it'd be difficult to get the wrong setting for either a plane or chisel. Owners of Lie-Nielsen bench planes or similar with 5mm-thick irons will have to resort to measuring or using a homemade stop. As the recess in the base is 4mm thick, the edge of these heavier blades overshoots the stop, so you're not able to secure the honing guide.

The leather strop is a similar size to the stone and glued to a backing board that's fixed to the base. To use it you simply rub the compound up and down like a crayon, then draw your blade back across the surface several times, maintaining a constant angle. Many woodworkers never use a strop when sharpening tools, though if you're looking for the ultimate edge, this can give a razor-like finish. That said, don't forget you'll really need a finer stone to polish the backs of blades.

This kit is definitely a handy sharpening system, which, for the novice woodworker, will yield consistent results, with a decent quality diamond stone included and leather strop if required. It's certainly cleaner than using an oilstone or waterstone, and reassuringly sturdy in use.

SPECIFICATION

Typical price: £99.98
Web: www.axminstertools.com
RATING – PERFORMANCE: 4 OUT OF 5; VALUE: 4 OUT OF 5

Using the stops provided allows you to only hone plane irons or chisels at 25° and 30°

Rub compound up and down like a crayon, and draw your blade back across the surface several times

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CHISEL RATING

HOLD THE LINE

Tony 'Bodger' Scott makes a hands-free aid for video calls

WW PROJECT

1 With a fence clamped to the bandsaw table, and a sliding fence to hold the plank square, cutting standard lengths is quick and easy

2 An offcut attached to the router table with double-sided tape establishes a repeatable size, position and angle for the trench

3 A G-clamp allowed me to use both hands to guide the wood cleanly past the cutter – only one hand is visible here; the other's holding the camera

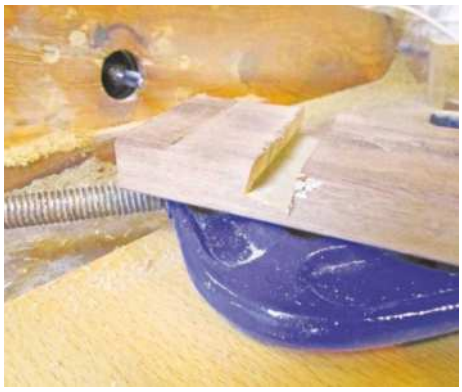
If your credit card is creaking around the edges following a winter blow-out, you might enjoy making some quick money with an elegant solution to a modern problem. That is, how to hold a mobile phone steady while you're having a video chat. It's hard enough to keep your own face in the middle of the little picture frame in the corner of the phone screen; it's even worse if the other person compounds the problem. In my experience, they either lay the phone flat on a table, in which case you're constantly being distracted by the contents of their nostrils, or wave it around as they talk, which gives you motion-sickness and means you can't see their face at all.

A solution to this modern conundrum is a simple phone holder, which can be made in less than an hour. After spotting something similar made from pallet wood in a street craft market, I decided to make an improved version using iroko and larch offcuts, which were given to me by a neighbour following the installation of a new fence.

Routing a trench

The only difficult part of the project is making a slightly angled trench in a thinnish plank – the ones I had were approximately 65 × 18mm. This can be achieved with a couple of careful saw cuts and a sharp chisel; however, a router is a better option here as not only does it produce a neater result, but it's also much faster.

There are two main ways to rout such a trench: hold the plank still while you push a plunge router across it; or keep the router still and move the wood as you go. Either way, you need to take extra care because the cutter, being angled, will be more exposed than usual.



4 There's some minor tear-out on the finished trench, but nothing that can't be removed with a little sanding

5 Once the trench has been cut, the hard work is over. It takes only a few seconds to trim the corners on a bandsaw...

The safest way is probably to cut a series of trenches in a long plank, which needs to be firmly clamped to a workbench, then cut the plank to length afterwards. As my workbench is currently occupied by another project, I started by sawing my offcuts into 125mm long pieces, and planned to make each trench about 50mm from the front end. That way, the weight of the sloping-back phone would be over the middle of the piece.

Rounding & smoothing

Using a router table and ½in cutter, I held the wood in a G-clamp so that my hands were well clear of the blade but still in tight control of the workpiece. The trench was 10mm deep on the shallow side and not quite 3mm deeper on the other, leaving a hair over 5mm below the trench. The ½in cutter left a trench wide enough to allow a standard mobile, with or without a protective cover in place, to drop in easily and thus be held reliably. Once the trench was cut, I rounded the corners of the piece on a bandsaw, smoothed the edges and faces on a disc sander, and rubbed it all over with a beeswax polish. Job done.

A Polish friend was so taken with my prototypes that she asked me to make eight more as gifts for her pals. And in return for my agreeing to individualise each phone holder by adding a name with a little free-hand pyrography, she was happy to pay £10 apiece for them, which isn't too bad for a few hours' work!

6 ... clean them up on a disc sander, then smooth the sides...

7 ... followed by the faces

10 The piece was finished by rubbing on a coat of beeswax, leaving it to dry for a few minutes, then buffing on a drill-mounted mop

8 A little hand-sanding took off all the sharp edges and slightly rounded the trench's lips, which eliminated the risk of scratching a phone screen

9 To ensure correct positioning and spacing, I find it helpful to draw letters in pencil first before burning them in permanently with a pyrography pen

CHISEL RATING

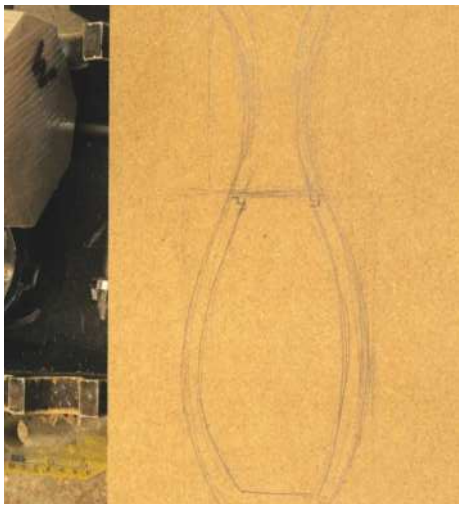
LARGE VASE ON A SMALL LATHE

Owning a small lathe doesn't have to limit the size of project you turn. Here, **Les Thorne** offers a clever solution that'll allow you to make a large vase in two parts

Many of you reading this article will have a home workshop, and I'd wager that the majority think it's far too small for their woodworking and woodturning needs. This limits the size of machines you can own, and as a result, we've seen a number of mid-size lathes being introduced in the last few years.

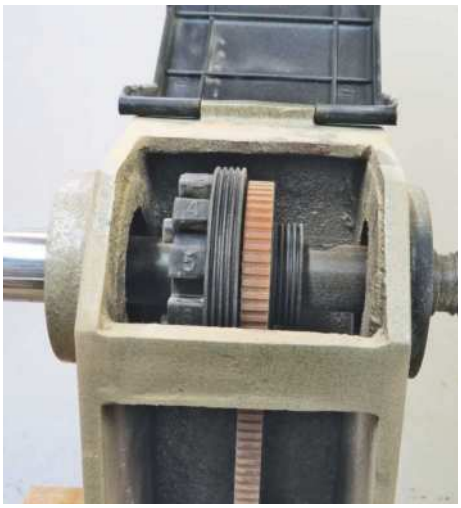
A small lathe with a big heart is a fantastic addition to your workshop whether as a main lathe or to complement a full-size machine. The problem with having a smaller lathe, however, is that it seems to be human nature to want to push it to the limit by making something that's either too heavy or too big for it to handle. But with a little thought as to the processes required, you can create some bigger signature pieces, and the vase I'm making here is a perfect example of this.

A piece this tall would be almost impossible to make on a small lathe because even though the Nova's bearings are good, you 'd struggle to hollow it as the distance from the headstock to the top would be too great and some vibration would almost certainly occur. Obviously making the piece in two parts means that you have to come up with a way of either hiding the join, or as I've done here, making a feature of it.



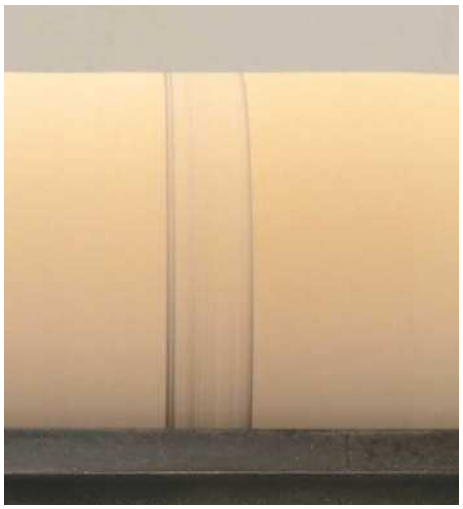
1 I wanted to try and get the maximum out of the lathe, so I drew the piece out first; this would give me an idea as to the proportions required. I needed the join to be just over halfway up the vase

2 As I intended to colour and texture the piece, the choice of wood wasn't therefore too critical. I decided that a piece of sycamore for the body and robinia for the neck would be fine. The blanks need to be cut off to pretty much dead length



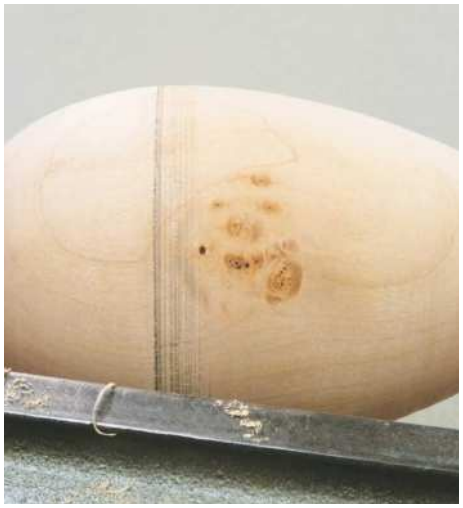
3 The lathe I'm using here has electronic variable-speed, but I set it on the middle belt ratio; this gives a speed range of up to 1,500rpm, but more torque than the higher ratio

4 Mount the blank between centres and rough the timber down to a cylinder using the spindle roughing gouge. Cut a dovetail to suit your chuck jaws and mount the blank up using the tailstock to ensure that everything is accurately aligned



5 On a shape like this, I like to have the swell or largest diameter somewhere around one-third to two-fifths up from the bottom. Mark this out with a pencil line that's around 15mm wide; this will become important later in the process

6 Shape the vase using either a bowl or spindle gouge. A push cut will afford you the best finish and, where possible, with the grain, by working from the larger to smaller diameter

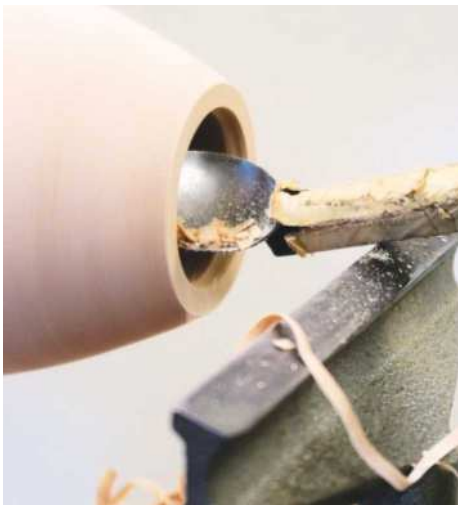


7 Leave the wide pencil line as a flat for as long as possible; this will stop you making the shape too pointed. When you're happy with the curve,the final part can be completed using either a tool or some hand sanding

8 As I intended to use a dedicated hollowing tool, I therefore needed to drill a depth hole. There was only just enough distance between centres to do this, which involved more luck than judgement. Remove the drill frequently to clear the shavings

9 The Rolly Munro hollowing tool is perfect for this sycamore. One of the main advantages of using a tool that cuts rather than scrapes to remove the bulk is that it puts less strain on the headstock and can be used at a lower speed

10 A big plus with using a small lathe is that you can work on the end of the machine rather than leaning over the bed; this is an important consideration when it comes to setting up a workshop



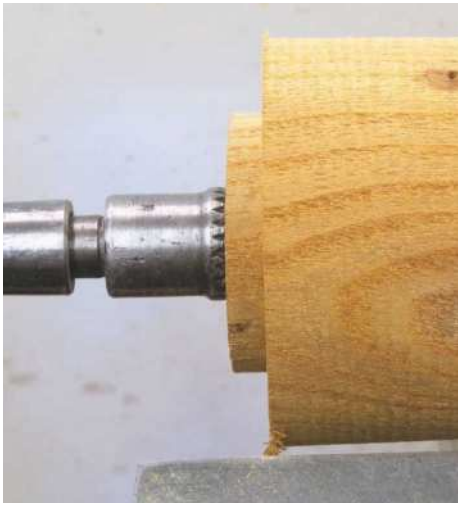
11 If you aren't lucky enough to have compressed air in the workshop, you may have to resort to something like my special spoon shaving removal tool; this is certainly a safer method than having to delve inside a piece to clear them by hand

12 It's important to always be thinking about the next stage, so you'll need to cut a step to accept the neck before you thin the work out too much. Use a parting tool and cut a 3 × 3mm section

13 Measuring a shape like this is much easier when you're using the correct tools and these callipers are specifically designed for gauging wall thicknesses in awkward shapes. Here I was aiming for somewhere around 6mm

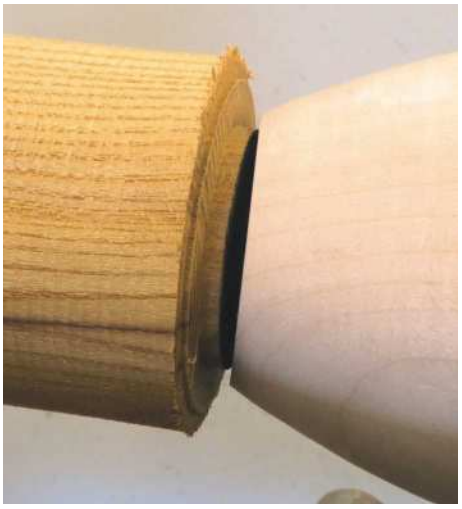
14 On a hollowed vase like this, positioning yourself correctly is critical in order to make cuts in the right place. It's important to be able to control where the tool cuts, rather than letting it determine the easiest spot for you

15 The Rolly Munro tool will produce a pretty good finish but for the final smoothing, a light scrape will be better. The Stewart System from Robert Sorby is without doubt the best tool due to its robustness – just remember to take light cuts when using it



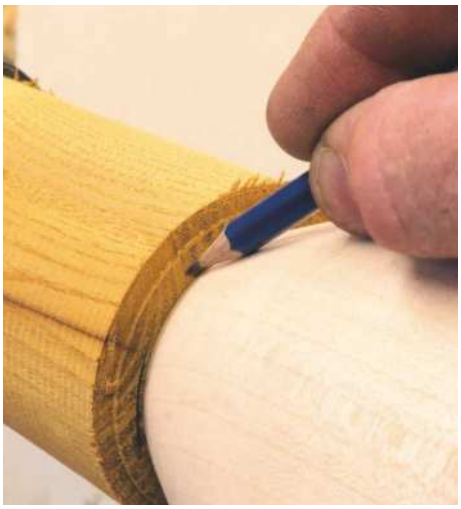
16 Now it's time to work on the neck. Mount the robinia between centres and put a chucking point on one end; this will be the top of the vase and you can then mount the piece in the chuck

17 You need to transfer the base measurement to the end of the piece you've just turned. Using Vernier callipers is the most accurate method here



18 Remove small amounts of timber and keep offering the base up to the neck as you go. It needs to be a tight fit but be careful not to force it on, especially if you've managed to get the base nice and thin

19 After drilling a hole all the way through, using a spindle gouge, hollow the neck to make a trumpet shape. Pull the tool towards you and keep the flute pointing at the 10 o'clock position



20 When you offer up the base, draw a line around the top; this will give you a rough idea as to what diameter the neck needs to be in order to match the sycamore body

21 Even though you're not going to be able to see or feel this part, professional pride means that I like to finish my work well, so I sanded this section of the neck

22 You now need to turn the piece around and grip on the spigot that'll become the join. It's then time for some light cuts as you're only gripping on a small area

23 To achieve the correct neck thickness, I like to work on the inside and outside in tandem. If you experience any vibration, you may need to move the tailstock into place for support

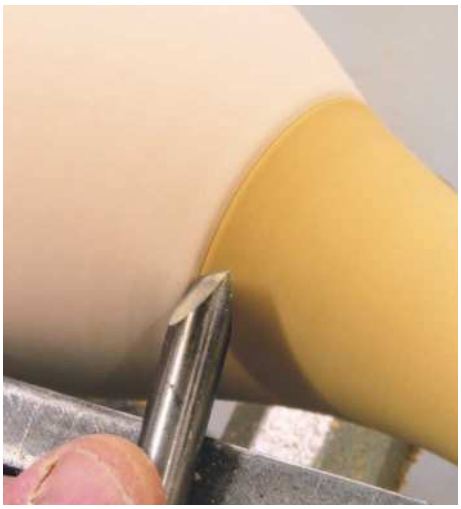
24 Once you're happy with the vase's interior, you can mount the whole thing back on the lathe. I have an aluminium cone for my centre, but you could easily make a wooden plug, which would do the same job

25 Carefully merge the two parts together by taking light cuts across the join. You may experience some vibration, but if it's not too bad then you can sand it out afterwards

26 I decided to put different textures on the piece, so I took the neck off and carved the surface using a rotary carbide burr in my Proxxon mini drill. I let the burr carve the entire surface so there weren't any gaps in the texture

27 The texturing can leave the surface rough with fluffy bits of wood sticking up. To remove these, I use a shop-built sanding arbor made up from layers of abrasive that are clamped and bolted between a couple of MDF discs

28 I textured the neck using a rotary rasp disc in an Arbortech angle grinder. I mounted the wood on a pine jam chuck to keep any steel away from the spinning metal



29 Mount both pieces between centres and glue them together using a good quality wood glue. When it's dry, turn a small punctuation point at the join; this will act as a punctuation point between the colours and textures

30 Spray the whole piece with an ebonising lacquer. Paint will be better suited than stain as it won't penetrate the wood so far, and will allow you to complete the next stage

31 When the paint is dry, you can sand off the texture's high points to expose the natural wood beneath. I start off with 120 grit and work through to 400. Stop the lathe frequently as you go to check your progress

32 The advantage of using spirit stain is that it won't show up on the black as it's translucent. I decided to use red on the sycamore and thought that yellow would complement the robinia perfectly

33 Removing chucking points at the end of a project is always a leap of faith, but with a little thought most things can be remounted and finished off. I protected the vase's neck with a little thin foam packaging, which I placed over a shaped pine plug

34 Using a small tool means that you'll only experience a small catch if something goes wrong – well, that's the theory anyway. I used a signature gouge to remove the waste, which left only a tiny amount to be finished by hand

35 Sand off the base using a sanding arbor – I like to mount the arbor in my drill press, which makes the whole process of getting a good finish easier with less chance of the sanding pad slipping and ruining your work

36 The completed two-part textured vase should look something like this

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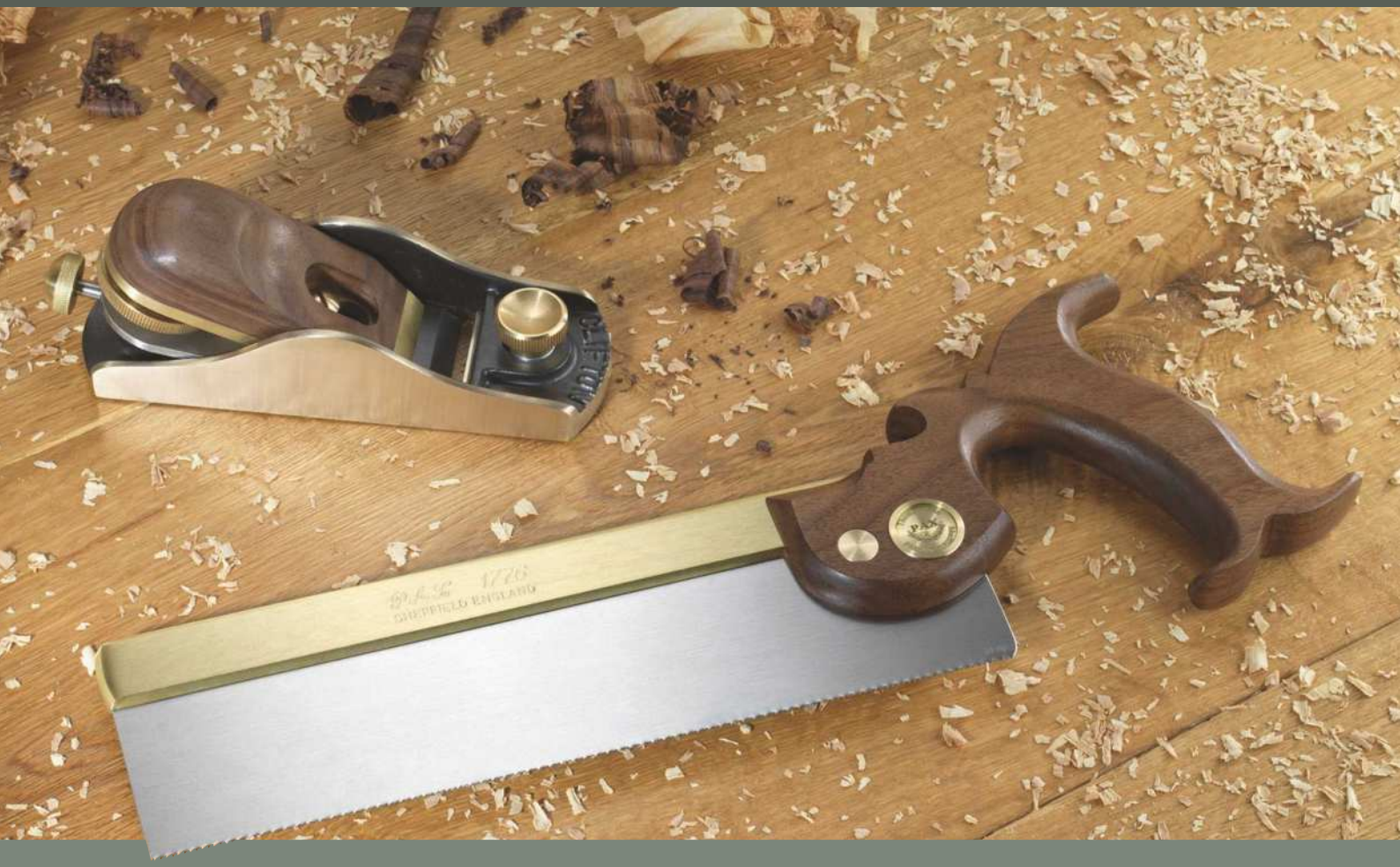

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1 An wooden Egyptian sarcophagus from around -1069 - 945 BC

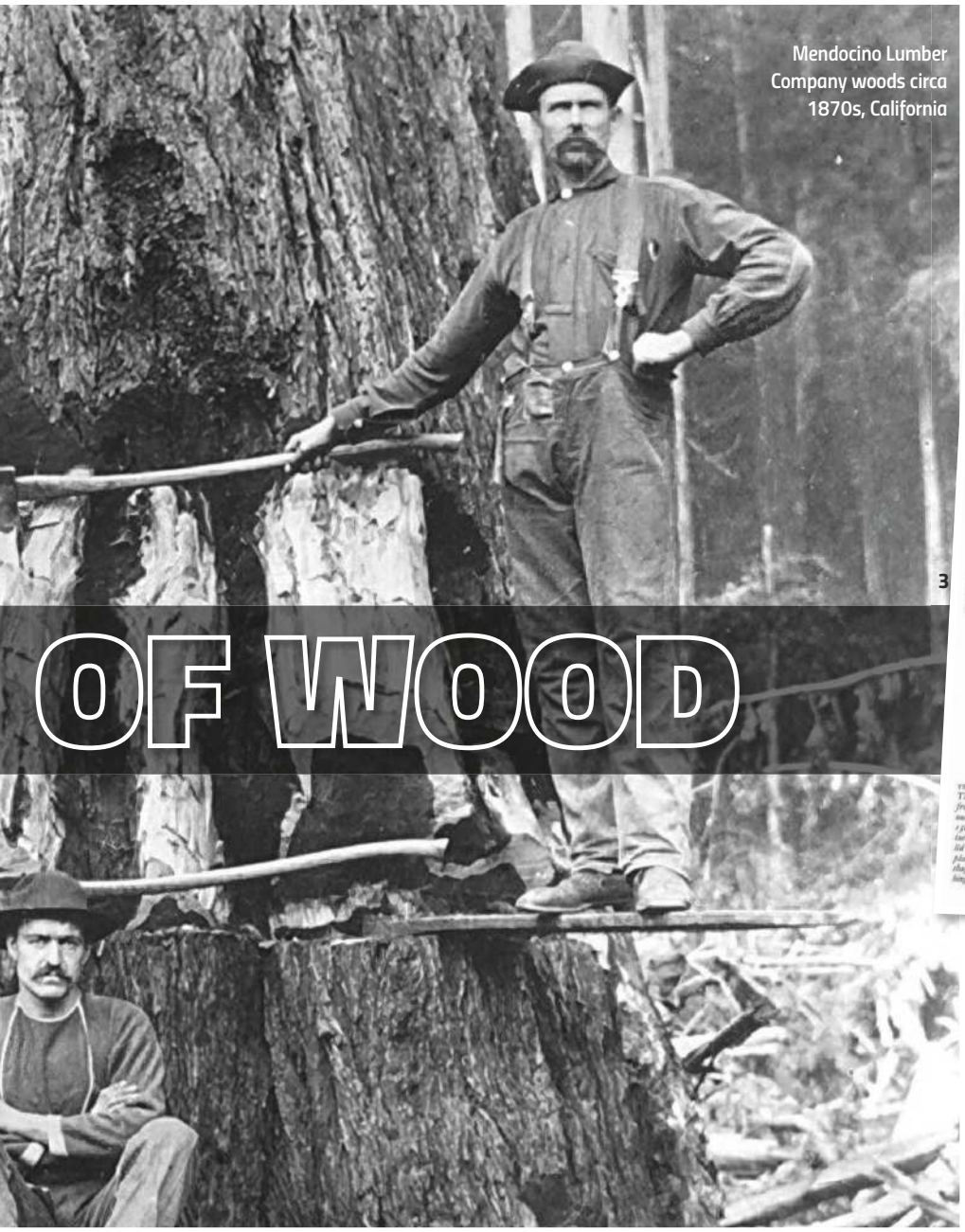
Peter Bishop takes an overview of wood's uses over time, as well as offering a glimpse of the future

Wood is a wonderful material that has been utilised since antiquity. The Egyptians valued the artefacts produced so much that they were buried with their owners for prosperity. They had little natural forest growth so the bulk of their timber was therefore imported. These highly prized woods included cedar, cypress and box. Local woods, such as acacia and carob, were cut and used as the groundwork for exotic veneer facings. Apparently ebony, one of the most valued of these, was combined with ivory to create intricate decorations. The Egyptians had obviously mastered the skills of furniture making, and many examples of mortise & tenon joint usage can be found. Wood was also employed for sarcophagi (**photo 1**), although the type of wood was dependent on the wealth of the family involved, but most would be carved from softwood, then lavishly over-decorated with a multitude of figurative scenes.

Wooden structures

Use of wood in furniture, buildings and shipping progressed. In medieval times, a simple plank and panel structure emerged for furniture. Chests were hewn directly from logs and reinforced with iron, and as these developed they became more intricate with locking and pegged joints (**photo 3**).

Wall panelling was fixed to cover over rough brick or stone work, for example, and some, in oak, had plain framing with highly figured panels. Flooring developed to produce a series of highly decorative patterns, and timber-framed building took advantage of a growing tree's natural shape. Some of the oldest examples can be found in the European cruck frame buildings (**photo 2**).



Mendocino Lumber Company woods circa 1870s, California

OF WOOD

3 Examples of early plank boxes

A series of inverted 'V's are made from curved lengths of timber, which form the main, structural parts of the building.

As techniques improved, timber-framed houses turned into an art form with many different shapes and panels contributing to the building's overall beauty. Out of necessity, some structures were made entirely from wood.

2 An example of cruck framing in Worcester, England

In Scandinavia, walls, floors and ceilings were, and still are, constructed in wood, owing to its availability and natural thermal properties. On other continents, where timber was abundant, different cultures developed a range of wooden houses on stilts (**photo 4**), with some magnificent structures having been built.

In Indonesia, for example, houses shaped like boats represent how important a role the boat plays within that culture for its survival. Other stilt houses enable the occupiers to build over water and marsh, thus making better use of the available materials and bringing them closer to their food sources.

Wooden water vessels

The origins of international shipping are based on wood. Without trees to build boats, trading and migrations wouldn't have occurred and, as an ultimate result, warships were built. Logs with their cores burnt out and shaped into dug-outs are still used in Africa. Simple North American canoes stretched birch bark over a wooden frame (**photo 5**). In other cultures, bamboo formed the basis of simple crafts. Poles of bamboo laid over a sub-frame were joined by shaping and binding them in place. The Vikings developed clinker-built crafts using scarfed joints and planks to produce their slender, gracefully curved vessels (**photo 6**).

Engineering & transportation

Wood has also been used in an engineering context to harness natural resources and exploit opportunities for development. Wind and watermills may have started out as simple structures but these developed into sophisticated production units for grinding, cutting and generating energy for other processes. Cogs and gears were first made from tight-grained woods such as apple, beech, holly or hickory, and as time moved on these were replaced with iron gears and shafts. With the introduction of steam power during the industrial revolution, wood-based designs slowly became redundant.

Wood has also figured as a key structure associated with transportation: wooden lock gates in canals allow links to be made at different levels, and huge frames and door structures resisted the weight of both water and impact from canal boats. Oak was the favoured timber for this use with some more exotic species like greenheart favoured when available. Engineers have utilised wood for the construction of bridges since first

4 A stilt house in Indonesia

5 Burning out the core of a wooden canoe

dropping a log over a stream, and gigantic log structures were built in North America during the expansion of the rail networks (**photo 8**). They utilised the naturally available resources, building tiered log developments that were locked together up to eight levels high. Other engineers designed cantilever structures to bridge gaps across rivers and ravines. Simply put, if there was wood available and a job to be done, it could be used for this purpose.

The future of wood use

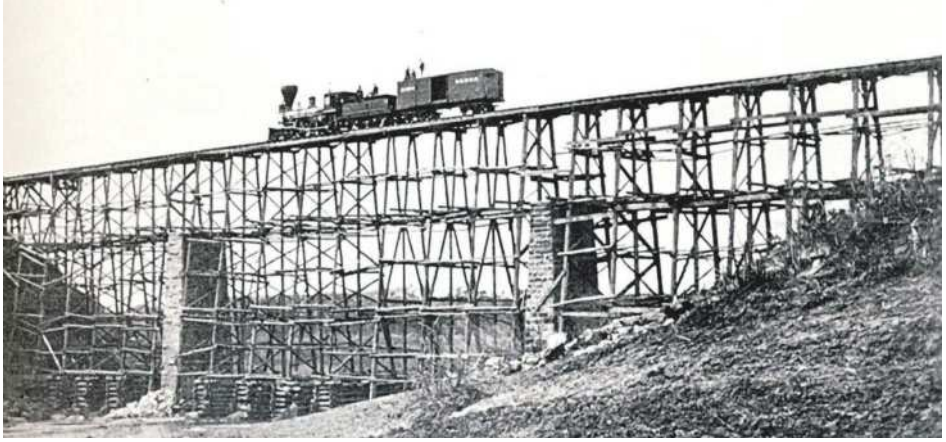
Today we're challenged to ensure that our timber supplies are sustainable. In most cases, this objective is being met; however, in some countries the bludgeoning populations and demand for land to farm lowers the value of natural forest products. When this occurs there's often a 'slash and burn' policy adopted. We must ensure that wood is valued, then it will be cut and used to best advantage and, key to this is that it'll then be replanted.

The demand for wood and wood products is huge, and our utilisation is becoming more efficient. This is demonstrated by the availability of laminated, solid wood products in both hard- and softwoods (**photo 7**). There's also been a significant increase in the use of sheet materials, which use timber that'd otherwise be wasted. MDF, sterling board and chipboard are fine examples. While we might not fully appreciate these products' aesthetic value, we should try to use them in preference of solid wood where possible. Our ancestors have shown us how they used the best stuff as 'show wood' and any old stuff where it can't be seen. As long as the product is fit for purpose, this is a great approach. I suspect you can tell I'm a bit of a wood enthusiast!

6 An ancient Viking longboat

The only limiting factor in terms of use is your imagination. Timber is so tactile it feels good to work with, touch and look at. Let's try to use it as best we can and pass something on for future generations to cherish.

7 Examples of laminated timber



8 A wooden rail bridge

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QUEEN OF THE WOODS

Barrie Scott ventures into the historic Clissett Wood to meet pole-lathe turner Gudrun Leitz, who's been offering her acclaimed Greenwood Courses for 28 years; she shows him how to turn a spindle in under 30 minutes

A SIGN OF THE CHIMES

Rather than using a modern quartz movement, Peter Vivian's Mission style clock – with plain case – boasts a beautiful Westminster chiming movement that elevates it to a whole new level

FINISHING TOUCHES

In the final part of this series, John Bullar looks at preparing and treating the wooden surfaces of furniture. Even though you may be tempted to rush this last stage, it's worthy of a number of practical considerations

PLUS ▪ On test: Triton TSPL152 1,100W surface planer ▪ Make your own mini pole-lathe Turned table lamp for beginners ▪ In profile: Chairmaker Michael Brown ▪ Tormek honing wheels range Obelisk trellis ▪ Close-up on cap irons ▪ Oak guitar stand ▪ Lapstrake plywood canoe

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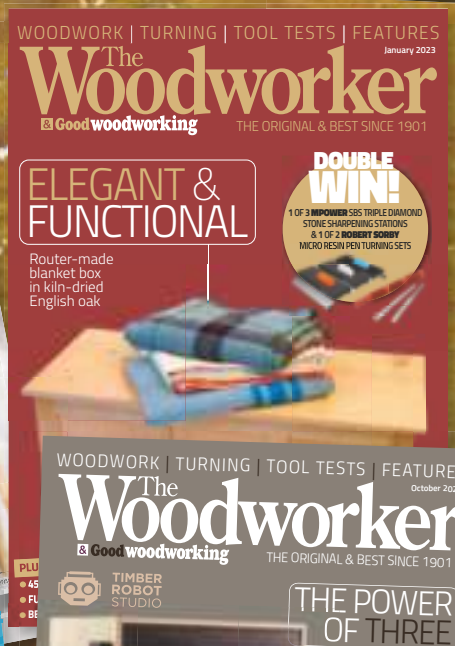

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OFFERED

Scheppach TS2000 table saw – suitable for spares; rear and side extensions, sliding table mobile base; £25 – buyer collects
07791 720 255 (Cheshire)

SCM S45 IPH bandsaw – in excellent condition; one owner; little use – selling for around half the price paid – £1,500 – buyer collects
01278 457 619 (Somerset)

Quantity of oak and Afromosia veneers: Afromosia – 2.1m × 140mm; self-adhesive oak – 2m × 300mm, plus various smaller pieces; £25
01322 664 388 (Kent)

Tormek 2000 – precursor to the T-8, with the same basic features – in very good condition; only £150. Also, WoodRat WR5 – also in very good condition; £150
01386 4300 43 (Chipping Campden)

Large sheets of bamboo veneer – 0.6mm thick; some cracks due to fragility but much of it shouldn't pose a problem. Sizes: 895 × 2,040mm; 270 × 2,200mm & 345 × 2,200mm; £30 – collection preferred but can potentially post if necessary
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Scheppach 2010 table saw with sliding table & side extension; £275
07940 704 570 (Lincoln)

Hobbies treadle fret saw – circa 1948 – in good condition; collection only
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Bosch GOF 2000 CE professional router – unused; £125. Also, antique Stanley 50 plough plane – boxed; appears to be unused; £100
07836 585 984 (Derby)

Piece of elm – 76 ×14 × 2in; selection of hardwood turning blanks in various sizes; different sets of Victorian staircase spindles – call for further details and prices
07833 988 071 (West Yorkshire)

Rexon 5in thicknesser – in good condition; £50. Also, Wolf drill stand – unused; £30 – buyer collects
07794 288 250 (Leeds)

Wadkin EQ spindle moulder – a serious industrial quality machine – two spindle speeds (v-drive belt), cast-iron body, table & fences. Net weight: 610kg – spring pressure, 5Hp motor, 150 × 450mm fences, 1½ piece; selection of tools including a pair of Oertli panel-raising cutterheads, adjustable & fixed groovers, spacers, serrated cutterhead, rebate heads, plus assortment of pre-profiled cutters. Can be seen working – manufacturer's machine leaflet available on request. Buyer to arrange removal from workshop & transport; £2,500 or sensible offers
01507 533 421 / 07848 829 335 (Lincs)

Sedgwick planer/thicknesser – 12 × 9in, 50in table, cast-iron, single-phase, heavy-duty machine, not heavily used, in great condition; £1,250 – buyer collects
07976 352 408 / 01707 331 834 (Herts)

Record Power DX500 dust & chip extractor; floor-standing – 85l capacity; £50 – selling due to lack of space
01908 510 618 (Milton Keynes)

Axminster AWVSL 1000 lathe – no chuck – with 10 various chisels, tailstock chuck and Axminster CH39FE magnetic light; £450 (ONO)
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Record PT260 twin blade planer/ thicknesser – good condition; includes base cabinet & push pad; £275 – buyer collects
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Leigh 24in (610mm) D4 Dovetail Jig – with Leigh user guide and Leigh cutters – buyer collects; in excellent condition; £150
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TAKE 5

Midcentury design meets modern techniques in this month's selection, along with a fun twist on the form of a wonderfully accomplished Japanese wooden toy

1 Jewellery box in bog oak – solid and veneer – with cast bronze legs made from a 3D printed pattern while studying at Robinson House Studio – **@robinsonhousestudio** – which were then hand patinated by Luke Evans – **@lukeevansdesign**

2 'Declaration' turned hollow form – sycamore, dye and ink – 75 × 180 × 180mm, by Peter Archer – **@parcher222**

3 Owl sculpture, hand-carved from a single piece of relic oak, by Alex Walshaw – **@alex_walshaw_**

4 Midcentury oak cupboard by Guillerme and Chambron c.1960, Votre maison edition – 144 × 49 × 173cm – as posted by Objet vagabond – **@objetvagabond**

5 'Oide Yansu' wooden toy from the 'Yada Damon Ninpocho' series – equipped with claws so it can easily climb walls, by Takeji Nakagawa – **@take_g_toys**

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