

Woodworking

CRAFTS

HAND, POWER & GREEN WOODWORKING • TURNING • RESTORATION • DIY

Take the
twist out
of timber
with winding sticks

FEATURE
Berea College,
Kentucky

PROJECTS

Shop drawers rebuild
Push-along racing cars
Laminated plant stand

TECHNIQUES

All about waxes
Sharpening turning tools

LEATHER TOOL ROLL • HALL TABLE • BIRCH BARK MATCHBOX • CORONET HERALD TEST



Clarke TABLE SAWS

LEG STAND KITS FOR CTS100 AND CTS11 ONLY £27.99 INC VAT

FROM ONLY £72.99 EXC VAT
£87.99 INC VAT

BEST SELLER

INCLUDES LEFT & RIGHT TABLE EXTENSION

MODEL	MOTOR	BLADE	EXC. VAT	INC. VAT
CTS800B	600W	200mm	£72.99	£87.99
CTS11	1500W	254mm	£154.99	£185.99
CTS100	1500W	254mm	£169.98	£203.98

CTS100

Machine Mart

65 SUPERSTORES NATIONWIDE

WHERE QUALITY COSTS LESS

Clarke 4" BELT/ 6" DISC SANDER

- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
- 225mm x 160mm table, tilts 0-90°
- 370W, 230V motor
- CS4-6E

FROM ONLY £92.99 EXC VAT
£111.99 INC VAT

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

CTS14

- Ideal for cross cutting, ripping, angle and mitre cutting
- Easy release/locking mechanism for table extensions
- 0-45° tilting blade
- Cutting depth: 72mm at 90° / 65mm at 45°

FROM ONLY £129.98 EXC VAT
£155.98 INC VAT

SHOWN WITH OPTIONAL LOCK KIT CLK5 £19.98 EXC VAT £23.98 INC VAT

evolution FURY5-S TABLE SAW

3 YEAR WARRANTY

FROM ONLY £159.98 EXC VAT
£191.98 INC VAT

- 1500W motor
- 0-60° mitre gauge
- Cutting depth: Steel 3mm, Wood 85mm at 90° or 58mm at 45°

Clarke WOODWORKING VICES

STANLEY Record

FROM ONLY £14.99 EXC VAT
£17.99 INC VAT

MODEL MOUNTING JAW (WIDTH/OPENING /DEPTH)mm EXC. VAT INC. VAT

Clarke	Bolted	150/152/61	£14.99	£17.99
Clarke	Clamped	72/60/40	£18.99	£22.79
Record	Clamped	75/50/32	£21.99	£26.39
Clarke	Bolted	180/205/78	£29.98	£35.98

BLACK & DECKER POWER PLANERS

TE-PL850

- 82mm cutting width

FROM ONLY £54.99 EXC VAT
£65.99 INC VAT

MODEL	DEPTH OF CUT	EXC. VAT	INC. VAT
Einhell TE-PL850 850W	3mm	£54.99	£65.99
B&D KW750K - GB 750W	2mm	£57.99	£69.99

Clarke 6" BELT/ 9" DISC SANDER

- Includes stand
- 1 HP / 230V / 1ph motor
- CS6-9C

FROM ONLY £239.00 EXC VAT
£286.00 INC VAT

Clarke 40" WOODTURNING LATHE

Ideal for woodturning in the workshop

- 1016mm distance between centres allows for turning longer spindles
- Inc. tool rest, tail stock, drive centre, face plate & 3 chisel
- Large turning capacity of 350mm
- 4 turning speeds

NEW

CWL1000B

FROM ONLY £136.99 EXC VAT
£164.99 INC VAT

LOCKABLE TAILSTOCK BENCH MOUNTED

Clarke 13" MINI WOOD LATHE

CWL325V

FROM ONLY £154.99 EXC VAT
£185.99 INC VAT

- Ideal for enthusiasts/hobbyists with small workshops
- 325mm distance between centres
- 200mm max. turning capacity (dia)
- 0.2HP motor

TURBO AIR COMPRESSORS

airmaster

FROM ONLY £89.98 EXC VAT
£107.98 INC VAT

* V Twin Pump

MODEL	MOTOR	CFM	TANK	EXC. VAT	INC. VAT
8/250	2HP	7.5	24ltr	£89.98	£107.98
7/250	2 HP	7	24ltr	£94.99	£113.99
11/250	2.5HP	9.5	24ltr	£109.98	£131.98
8/510	2HP	7.5	50ltr	£119.98	£143.98
11/510	2.5HP	9.5	50ltr	£139.98	£167.98
16/510*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock
- Quality induction 300W motor
- CS1-5

FROM ONLY £69.98 EXC VAT
£83.98 INC VAT

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

CDE7B

FROM ONLY £109.98 EXC VAT
£131.98 INC VAT

CWVE1

- Powerful 1100W motor
- 50 litre bag capacity
- Flow rate of 850M3/h

Clarke HIGH VELOCITY FANS

CFF18C100

18" BLACK FLOOR FAN

FROM ONLY £36.99 EXC VAT
£44.99 INC VAT

NEW

18" CHROME FLOOR FAN

CFF18B100

FROM ONLY £36.99 EXC VAT
£44.99 INC VAT

* Chrome #black

MODEL	SIZE/TYPE	EXC. VAT	INC. VAT
CFF20	20" Box Fan	£36.99	£44.99
CFF18C100*	18" Floor Fan	£39.98	£47.98
CFF18B100*	18" Floor Fan	£39.98	£47.98
CPF18B100	18" Pedestal Fan	£49.98	£59.98

Clarke AIR TOOLS

CAT111

FROM ONLY £21.99 EXC VAT
£26.39 INC VAT

HUGE CHOICE IN-STORE/ONLINE

MODEL	DESCRIPTION	EXC. VAT	INC. VAT
CAT111	Orbital Sander	£21.99	£26.39
CAT160	6" Dual Action Random Orbital Palm Sander	£39.98	£47.98
CAT165	10mm Air Belt Sander	£39.98	£47.98
CAT168	50mm Right Angle Orbital Sander	£34.99	£41.99

*was £59.98 inc. VAT

Clarke HARDWOOD WORKBENCH

- Includes bench dogs and guide holes for variable work positioning
- 2 Heavy Duty Vices
- Large storage drawer
- Sunken tool trough
- LxWxH 1520x620x855mm

CHB1500

FROM ONLY £149.98 EXC VAT
£179.98 INC VAT

Clarke DISC SANDER (305MM)

- Powerful, bench mounted, 900W
- Dust extraction port
- CDS300B

FROM ONLY £129.98 EXC VAT
£155.98 INC VAT

Clarke RANDOM ORBITAL SANDER

CRO53

FROM ONLY £32.99 EXC VAT
£39.99 INC VAT

- Adjustable front handle improves control
- 7000-14000rpm

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

Clarke ELECTRIC POWER FILE

CPF13

FROM ONLY £49.98 EXC VAT
£59.98 INC VAT

- Variable belt speed
- Tilting head
- Black & Decker

MODEL	MOTOR	BELT SIZE (mm)	EXC. VAT	INC. VAT
CPF13	400W/230V	13x457	£49.98	£59.98
KA900E*	350W/230V	13x455	£59.98	£71.98

Clarke BELT SANDERS

BS1

FROM ONLY £36.99 EXC VAT
£44.39 INC VAT

ABRASIVE SANDING BELTS IN STOCK

MODEL	MOTOR	M/MIN	EXC. VAT	INC. VAT
Clarke BS1	900W	380	£36.99	£44.39
Clarke CBS2	1200W	480	£79.98	£95.98
Makita 9911	650W	75-270	£89.98	£107.98

Clarke DETAIL SANDERS

CDS-1V

FROM ONLY £19.98 EXC VAT
£23.98 INC VAT

- Perfect for smooth and fine finishing along with hard to reach areas or curved surfaces

MODEL	WATTS	EXC. VAT	INC. VAT
PS105	105W	£19.98	£23.98
CDS-1V	280W	£29.98	£35.98

ALL MODELS INC. SANDING SHEETS

Clarke SHEET SANDERS

CON300

FROM ONLY £16.99 EXC VAT
£20.99 INC VAT

*was £41.99 inc. VAT

MODEL	SHEET SIZE	MOTOR	EXC. VAT	INC. VAT
CON200	190x90mm	150W	£16.99	£20.99
CON300	230x115mm	330W	£32.99	£39.99

Clarke 18V CORDLESS DRILL/DRIVERS

CON18LI

FROM ONLY £69.98 EXC VAT
£83.98 INC VAT

powered by Li-Ion

MODEL	VOLTS	BATTS	EXC. VAT	INC. VAT
CON18NI	18V	2 x Ni-Cd	£69.98	£83.98
CON18LI	18V	2 x Li-Ion	£89.98	£107.98

Clarke 18V BRUSHLESS COMBI DRILLS

CON180LI

FROM ONLY £109.98 EXC VAT
£131.98 INC VAT

NEW RANGE

powered by Li-Ion

MODEL	VOLTS	BATTS	EXC. VAT	INC. VAT
CON18LIC	18V	2 x 2.0Ah Li-Ion	£109.98	£131.98
CON180LI	18V	2 x 4.0Ah Li-Ion	£169.98	£203.98

Clarke CIRCULAR SAWS

CON185

FROM ONLY £41.99 EXC VAT
£50.39 INC VAT

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

*Includes laser guide

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC. VAT	INC. VAT
CCS185B	1200W	65/44	£41.99	£50.39
CCS2	1300W	60/45	£59.98	£71.98
CON185*	1600W	60/40	£62.99	£75.99

VAC KING WET & DRY VACUUM CLEANERS

FROM ONLY £49.99 EXC VAT
£59.99 INC VAT

- Compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.
- SS = Stainless Steel

*was £119.98 inc. VAT

MODEL	MOTOR	CAPACITY	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC25SS	1400W	19/17ltr	£67.99	£81.99
CVAC30SSR*	1400W	24/21ltr	£89.98	£107.98

Clarke PORTABLE THICKNESSER

CPT250

FROM ONLY £219.99 EXC VAT
£262.99 INC VAT

- Max thickness cap. 125mm and 250mm wide
- Planing depths adjustable from 0-2.5mm
- Powerful 1250W motor

Clarke BOLTLESS SHELVE/BENCHES

FROM ONLY £29.98 EXC VAT
£35.98 INC VAT

WHEN YOU BUY ANY MIX OF 4 FROM THIS RANGE SAVE AT LEAST £23.99 INC. VAT

CHOICE OF 5 COLOURS

RED, BLUE, GREY, SILVER & GALVANISED STEEL

MODEL	DIMS WxDxH (mm)	EXC. VAT	INC. VAT
150kg	800x300x1500	£29.98	£35.98
350kg	900x400x1800	£49.98	£59.98

150 PER SHELF (evenly distributed) Strong 3mm fibreboard shelves

350 PER SHELF (evenly distributed) Strong 12mm fibreboard shelves

Clarke WHETSTONE SHARPENER (200MM)

CWS200B

ONLY £119.98 EXC VAT
£143.98 INC VAT

- Produces razor sharp cutting edges on chisels, planes, etc.
- Inc. 3 tool holding jigs, workpiece clamp & support frame, polishing paste & water trough

Clarke PLANERS & THICKENERS

CPT800

FROM ONLY £184.99 EXC VAT
£221.99 INC VAT

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

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£219.98	£263.98
CPT1000	10"	120mm	£299.00	£358.80

Clarke OSCILLATING BELT & BOBBIN SANDER

COEBS1

FROM ONLY £139.98 EXC VAT
£167.98 INC VAT

- Dust collection port
- Inc. 6 sanding sleeves/bobbins

Clarke OSCILLATING BELT & BOBBIN SANDER

COEBS1

FROM ONLY £179.98 EXC VAT
£215.98 INC VAT

- Sand concave, convex, straight or multi-curved pieces
- Dust collection port
- Inc. sleeves, drum & belt

FAST, EASY FINANCE

- Over 12, 24 or 36 Months
- Purchases over £300
- 12.9% APR, 10% Deposit*

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- ONLINE
- PHONE

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Clarke SLIDING COMPOUND MITRE SAWS

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800W motor
- Laser guide

FROM ONLY **£89.99** EXCL. VAT
£107.99 INC. VAT

MODEL	BLADE DIA/BORE DEPTH (mm)	CROSS CUT	EXC. VAT	INC. VAT
CMS10S2	210/30	60/120	£89.99	£107.99
CMS210S	210/30	60/120	£99.99	£117.99
CMS10S2	254/30	78/340	£139.99	£167.99

Clarke MITRE SAWS

FROM ONLY **£59.99** EXCL. VAT
£71.99 INC. VAT

MODEL	BLADE DIA/BORE DEPTH (mm)	CROSS CUT	EXC. VAT	INC. VAT
CMS210	210/30	60/120mm	£59.99	£71.99
Einhell TC-MS 2112	210/30	55/120mm	£59.99	£71.99
Einhell TC-SM 2131	210/30	62/310mm	£129.99	£155.99
Einhell TC-SM 2503	250/30	75/340mm	£159.99	£191.99

Clarke WORK TABLE SUPPORTS (PAIR)

ONLY **£29.99** EXCL. VAT
£35.99 INC. VAT

• Ideal if you have your own work top or want to build a steel or wood workbench • Inc. mounting holes for worktop, shelf and floor

Clarke DRILL PRESSES

FROM ONLY **£66.99** EXCL. VAT
£80.99 INC. VAT

• Range of precision bench & floor presses for enthusiast, engineering & industrial applications

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

FROM ONLY **£39.99** EXCL. VAT
£47.99 INC. VAT

• Great for sawing, cutting, sanding, polishing, chiselling & much more • 250W motor

Clarke BENCH BANDSAW

FROM ONLY **£129.99** EXCL. VAT
£155.99 INC. VAT

• Produces fast, precise mitre & longitudinal cuts • 350W motor • 7.5" throat size • Cuts in all types of wood

Clarke BISCUIT JOINTER

FROM ONLY **£52.99** EXCL. VAT
£63.99 INC. VAT

• 1100Rpm Operating Speed • 860W motor • 14mm Cutting Depth • Inc. dust bag, storage case and face spanner for cutter change

Clarke SCROLL SAWS

FROM ONLY **£82.99** EXCL. VAT
£99.99 INC. VAT

• 50mm max cut thickness • Air-blower removes dust from cutting area • Table tilts 0-45°

Clarke STATIC PHASE CONVERTERS

FROM ONLY **£229.99** EXCL. VAT
£274.99 INC. VAT

• Run big 3 phase woodworking machines from 1 phase supply • Variable output power to match HP of motor to be run

Clarke CONTRACTOR JIGSAWS

FROM ONLY **£15.99** EXCL. VAT
£19.19 INC. VAT

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC. VAT
CJS380*	420W	55/6mm	£15.99	£19.19
CJN750#	750W	80/10mm	£27.99	£33.99
Bosch PST700E*	500W	70/4mm	£49.99	£59.99

Clarke MORTISING MACHINE

FROM ONLY **£174.99** EXCL. VAT
£209.99 INC. VAT

• Accurately creates deep square recesses • Table size 150 x 340mm • Max. chisel stroke 76mm • Robust cast iron base & column ensures stability & accuracy • 95mm depth of cut

Clarke GRINDERS & STANDS

FROM ONLY **£32.99** EXCL. VAT
£39.99 INC. VAT

• Stands come complete with bolt mountings and feet anchor holes

Clarke ROUTERS

FROM ONLY **£46.99** EXCL. VAT
£56.99 INC. VAT

• Powerful heavy duty machines ideal for trade and DIY use

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Clarke PROFESSIONAL BANDSAWS

FROM ONLY **£199.99** EXCL. VAT
£238.80 INC. VAT

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

• Table tilts 45° • Adjustable blade guide • Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors

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In the August issue...



Hello everyone and welcome to the August issue of Woodworking Crafts

Scything in slippers

Any of us who have practical interests or hobbies probably have more than one such pastime. In my case I can list them. Hand planes – I love a decent vintage hand plane, especially my late Victorian corrugated base Stanley No.4 smoother and my No.5 Stanley Gage plane from the 1930s; Then there's my lifelong interest in photography, it was my first career after all. I have a cabinet full of vintage Nikon manual cameras and lenses, the lenses still come out from time to time to use on my Nikon D7200 DSLR camera, especially a 55mm Micro Nikkor for closeup work, images so sharp you could almost cut your hand on them. That brings me neatly to my third interest, which is scything. Cutting grass and brambles the old-fashioned way by hand has seen a revival. It isn't quaint – it is eco-friendly, no petrol, noise or fumes and no sweat, unlike a neighbour who sweats and frets cutting a meadow-deep lawn with a ghastly industrial-sized strimmer. I'm not volunteering for that job. So, I've just received a new short, Italian-made Falci trimming blade, a different profile to a meadow-cutting blade. A quick honing of the factory-finished edge and it was ready to go. Nothing beats early morning sun with dew on the grass when a scythe cuts at its best and the gentle swish as tall grasses and weeds give way to razor-sharp steel, and yes, in slippers. Some mowers do it barefoot to feel in tune with nature. A great way to start the working day at my desk. It's like that with hand planes or chisels too. A friend, on my advice, recently junked the rubbish, ever-blunting blade in his No.5 jack plane for a decent, upgraded thick, carbon steel blade and, *quelle surprise*, it cuts beautifully at last. It pays to get the real deal, to use tools that give pleasure and satisfaction and to work at an even, measured pace that delivers a result of which we can be really proud.

Anthony Bailey

Anthony Bailey, Editor

Email: anthonyb@thegmcgroup.com



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JOINERY

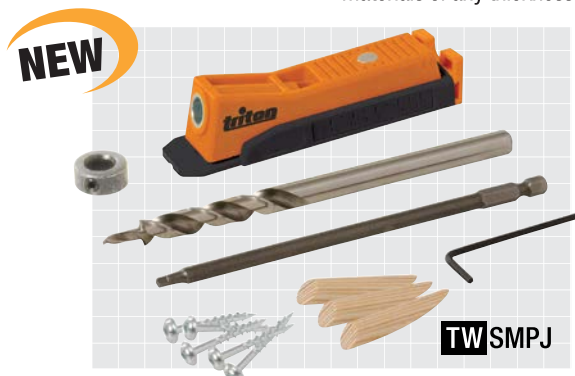
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storing all those
bits and bobs

Design INSPIRATION

A hall table is a traditional domestic feature which still has a place – for your phone, your keys, letters, scarf, you name it. It's a handy drop-off point

PHOTOGRAPHS COURTESY OF SHUTTERSTOCK



Chunky yes,
but the cross-brace
design could work well

We love the retro look, clean and elegant without trying



The waisted top
profile is elegant
but not obtrusive



A solid, dependable, traditional shape

Hall telephone table

James Hatter's table has a familiar ring to it, but didn't call for a whole trunk of oak to build it...



A recent visit to a garden centre that also sold oak furniture revealed a telephone table which my wife viewed and wanted to buy. 'I'll make you one,' I said, to which she responded: 'How long will it take?' Well, it didn't take too long with the help of my grandson, Kieran, as this article shows.

The table is 710mm high, 700mm wide, and 360mm deep. It uses American white oak, with an ash handle, and decorative joint infill. The drawer has an oak front measuring 195 x 555mm and pine is used for the drawer sides and back. It has 250mm bottom drawer runners for smooth, lasting operation. Jointing biscuits are extensively used to join the components together.



The front and rear pieces can be slightly eased at the corners

TOP & SHELF CONSTRUCTION

The table top is made by edge-joining two lengths of 90 x 28 x 520mm together using size 20 jointing biscuits and adhesive. This forms the centre part of the top. Next, cut two 90 x 28 x 180mm lengths, one to either end of the centre piece, using size 20 biscuits. Two front and rear pieces, each 90 x 28 x 700mm long, are attached to the centre assembly. Clamp assembly together and, when set, use abrasive paper to give a smooth finish.

The shelf is formed in the same way but the overall size is 315 x 590mm. Sand smooth and remove any sharp edges.



The centre part of the top panel is formed by joining two boards together using jointing biscuits



Mark and cut matching biscuit slots to join the end pieces to the assembled centrepiece.



Join and cramp the end pieces to the assembled centrepiece



Finally, cut slots and join the front and rear pieces



Cramp the assembly and allow to set

LEGS AND RAILS

Four legs are cut, each 45 x 28 x 672mm long, and three rails, each 45 x 28 x 560mm long, for the front and back, also four 45 x 28 x 254mm rails for the sides. In addition, a 90 x 28 x 569mm rail is cut for the rear and two 90 x 120mm fill-in pieces in pine for the rear.

The rear sub-assembly is formed by joining the two pine pieces to the top rear member using size 20 biscuits, then joining the lower rear rails to the pine pieces. Make sure the assembly is square and that the top and bottom rear rails line up.



SIDES

Two side panels are required. These are formed by first joining two lengths, each 20 x 100 x 520mm long, together using size 20 jointing biscuits and adhesive. Clamp together and, when set, cut two panels, each 200mm wide x 254mm long.

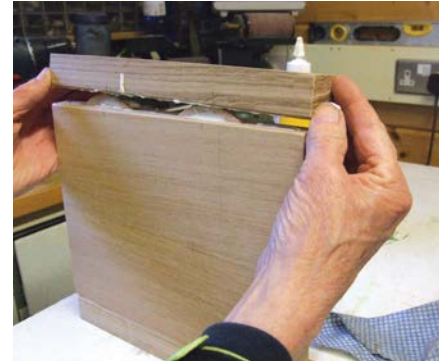
Before forming the sides, clamp the legs together and cut a 28mm wide x 15mm deep slot 170mm up from the bottom on the inside of each leg. This will form the slots for the lower shelf attachment later. To form the sides, cut matching size 20 biscuit slots to join the side panels to the legs. Cramp and leave to set.



Clamp the legs together and trench out the slot required to hold the shelf in place



Join two pieces to form the side panels



Join the side rails to each side panel



Check that the shelf will fit with a fit that will allow movement of the shelf for assembly



Mark and cut biscuit slots to attach the side panels to the legs

CUTTING JOINTS TO JOIN RAILS TO SIDES

Mortise and tenon joints could be used, but I decided to use biscuits. First, cut matching slots to the top of each side and the connecting rail end. The size 20 biscuit slot will break out and will need filling later. For the lower carcass rail, clamp a guide rail across. The slots will extend to the front of each slot, showing a visible groove. This will be filled in after assembly with an ash infill.



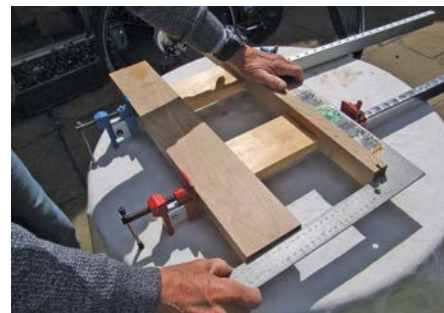
Use the biscuit cutter to cut slots to join the rails to the sides



For the lower rail joints, use a guide for the biscuit cutter



For the rear sub-assembly, attach the two lengths of pine to the lower rear rail using size 20 biscuits and adhesive



Join the top rear rail and ensure that the assembly is square



Trim biscuits to remove the outer points

CARCASS ASSEMBLY

Use abrasive paper to smooth the various components prior to assembly. Do a dry run first to check alignment of joints. Cut the joining biscuits to remove the outer points. This will ensure that they do not project the slot and be visible.

First, join the top rear sub-panel to each side using size 20 jointing biscuits and adhesive. Clamp lightly. Carefully lift the assembly on to its four legs. Join the top front rail to the sides, carefully easing out the legs to allow to fit, and repeat with the lower front rail. Clamp the assembly firmly, ensuring that it is square. When set, remove the clamps and cut ash infills to cover the slots left at each joint.

Slide the lower shelf into place, apply adhesive so that it goes into the slot in the legs. Line the rear level with the leg – this will mean the shelf slightly protrudes at the front. When all set, use abrasive paper to smooth out joints.



Carefully lift the part-assembly upright. Attach the front rails then clamp to set



Slide the shelf into position, lining the back edge level with the rear of the leg



Add a dab of adhesive before sliding the shelf into its final position



Cut ash infills to fit the slot cut by the biscuit cutter



Attach blocks to the top of the rear rail for attaching the rear of the table top

DRAWER

The drawer, uses pine for the sides, back, and inner front, and has a 6mm plywood bottom. The drawer uses 250mm bottom drawer runners and the front is oak. Cut a 6mm groove along the inside bottom of the drawer sides. This can be achieved using a 6mm cutter in a router. The plywood base is supported in the groove. Jointing biscuits are used to join the rear and inner front to the sides.



Cut an 6mm groove towards the inside bottom of the sides



Cut matching biscuit slots to join the sides to the inner front and rear pieces of the drawer



Complete the assembly and clamp. Check that the drawer is square



Screw drawer slide support pieces into place



Attach the drawer slide runners. Attach the matching slider component to the bottom side edges of the drawer



Slide the drawer into place, then insert the drawer front into the opening



Use screws through the inner drawer front into drawer front to attach firmly

Drawer handle

A handle or knob could be purchased, or one could be made. The one used for this project was made from ash. Cut a 12 x 28 x 120mm strip of ash, and two 15 x 12 x 35mm ash blocks. Attach the blocks to the back ends of the front strip using adhesive and clamp until set. Sand the assembly and cut a shim off each end to give clean ends. Smooth all edges with abrasive paper. Mark the centre of the bottom of each end block, and drill a pilot hole to take the attaching screws later.



A simple handle can be made by attaching spacers to a strip of wood

FIXING THE TOP



With the drawer removed, place the table top upside down and place the inverted assembly in position. Use screws to attach the top firmly to the frame

FINISH



I used a water-based matt clear varnish to protect the table. The varnish was applied with a synthetic bristle brush. When using water-based matt varnish, make sure that the product is well stirred before each use to ensure that the matt additive in the varnish is well distributed. Three coats were applied, with a light sanding with a fine grade paper between coats. ■



A woodworking glossary

The letter S

SANDING DRUM A spinning cylinder wrapped with a flexible abrasive sheet.

SAPWOOD Timber taken from the outer living portion of a tree trunk.

SAWYER Commonly used to describe someone who works in a sawmill.

SCALES The wooden handle on a knife.

SCARF JOINT A lazy Z-shaped longitudinal beam joint used to join timber framing.

SCORP A drawknife with a curved, sometimes completely circular blade used for hollowing out objects such as bowls.



PHOTOGRAPH BY TONY GRIFFITHS

Using a large scorp

SCRAPER A tool that is flat in section, that comes in different end profiles and is used with a scraping action on the lathe.

SCRATCH AWL A sharp-pointed hand tool used to mark wood for cutting when a more precise mark is needed than that provided by a pencil.

SCRIBE JOINT End-grain moulded counter-profile joint that plugs into the long grain profile.



PHOTOGRAPH BY JOHN BULLAR

A wedged scarf joint

SCRIBING FIT The woodworking technique of shaping the end of a moulding or frame component to neatly fit the contours of an abutting member or a wall if fitting furniture.

SCROLLSAW A motorised fretsawing machine.

SEASONING Reducing the moisture content of wood before working to prevent cracking, splitting, and other damage due to drying.

SECONDARY BEVEL An additional sharpening step performed on the cutting edge of a blade creating a final bevel several degrees steeper than the primary bevel.

SET To drive a fastener, usually a nail, slightly below the wood surface.

SET SCREW A small screw used to adjust a machine component, such as the level of the insert plate on a tablesaw or the guide blocks on a bandsaw.

SHAKE A crack or split in wood, caused by damage or drying.

SHANK The shaft of a bit or cutter that is gripped in a tool by a chuck or a collet.

SHAVE HORSE A combined seat and work clamp for green woodworking

operations. A movable end piece holds workpieces down with foot pressure freeing both hands.



PHOTOGRAPH BY JOHN BULLAR

A shave horse in use

SHOOT Planing an edge straight or square.

SHOOTING BOARD A jig board for use with a hand plane for planing end grain.



PHOTOGRAPH BY GMC/ANTHONY BAILEY

A shooting board

SHEAR FORCES In woodworking this typically refers to the effect of gravity and the weight of objects on cabinet parts, particularly shelving and their fixings.

SHEEN The description of a wood finish that is less than full gloss.

SHELLAC A type of finish derived from an organic secretion of the lac bug supplied in liquid, granule and flake.

SHIM A slip of wood, plastic or metal used to fill a gap or make a surface level.

SHIPLAP The term for a particular type of overlapping boarding for wooden buildings.

SHIPLAP JOINT Shiplaps were traditionally used in solid-wood cabinet backs. The overlapping edges hide any seasonal wood movement.

SHORT GRAIN Long grain the fibres of which are cut across and left so short that the material becomes fragile and won't hold together.

SHOULDER The perpendicular face of a step cut, such as a rebate or tenon, which bears against a mating joint part to stabilise it.

SHOULDER PLANE A flat-sided, narrow bodied plane for trimming tenons and other adjustments to fit.



A shoulder plane

SILICON CARBIDE Very hard, uniform, fast-cutting abrasive material used in high-quality abrasive papers and grinding wheels.

SKEW CHISEL A carving or turning chisel which has a cutting edge that is not perpendicular to the sides of the chisel but at an angle.

SKIP TOOTH A bandsaw blade with



Slot mortiser attachment

regularly spaced gaps between teeth for fast cutting, allowing space for sawdust to escape into.

SLED Device to guide a workpiece accurately and safely through the cutting edge of a woodworking machine, usually a tablesaw.

SLICK An extra-large chisel used in framing and traditional building construction.

SLIDING BEVEL A tool with an adjustable angle between the blade and body.



A sliding dovetail joint

SLIDING DOVETAIL JOINT This joint offers great strength and rigidity for box work, especially drawers and case pieces.

SLIDING TABLE On a table saw, a movable portion of the table used to feed a workpiece through the blade.

SLIP MATCH Veneer pattern done by aligning successive pieces side by

side vertically in the same sequence they were cut – not mirror matched (flipping).

SLIP STONE A shaped stone used for sharpening shaped carving tools.

SLOT MORTISER Horizontal boring machine that cuts elongated slots.

SNIFE The action of a thicknesser to pinch and create a step at the end of a board.



Snipe due to poor blade setting

SOFT START Electronic control for an electric motor, often used on routers to bring revolutions slowly up to the set speed.

SOFTWOOD Wood from a gymnosperm tree, i.e. trees in the divisions Pinophyta and Ginkgophyta. Despite the name, not necessarily very soft or light wood, e.g. douglas-fir is a softwood.

SOLE The bottom of a woodworking tool, often called the base.

SOSS HINGE Fully concealed knife-style hinge in which both parts are mortised into the door and the door frame.

SPADE BIT Flat woodworking bit for drilling large diameter holes, available in a series of sizes. ➤

PHOTOGRAPH BY GNC/ANTHONY BAILEY



A spalted turning by Mark Baker

SPALTING A change in the texture, strength and colour of wood caused by colonies of fungus growing within the dead wood. Where colonies of fungus meet, fine black lines, often considered a desirable feature in woodturning.

SPECIFIC GRAVITY Measurement of the density of wood done by using a uniform size block displacing a given amount of water

SPEED SQUARE A small triangular-shaped layout tool that combines aspects of try, mitre and framing squares. The tool has a lip on one side to allow it to hook on your work.

SPINDLE MOULDER A heavy-duty woodworking machine similar to a router designed to machine profiles on joinery and cabinetry components.

SPINDLE SANDER A machine with a round, oscillating sanding drum that protrudes through the machine work table.

SPLINE A narrow strip of wood that is glued into corresponding grooves to join pieces of wood.

SPOKESHAVE A type of short-bodied that is drawn by two handles and can create concave or convex shapes, often used for wheel spokes and chair legs.

SQUARE A tool such as a steel square, try square, combination square.

STICKERS A small block of wood used to separate boards that are in the process of drying.



Stile, rails and panel

PHOTOGRAPH BY KEVIN LEE

STILE The vertical member of any frame such as a door, window or face frame.

STOPPED JOINT A cross-grain grooved joint that offers good strength. Because the dado is stopped and the shelf notched, the joinery remains hidden when assembled.

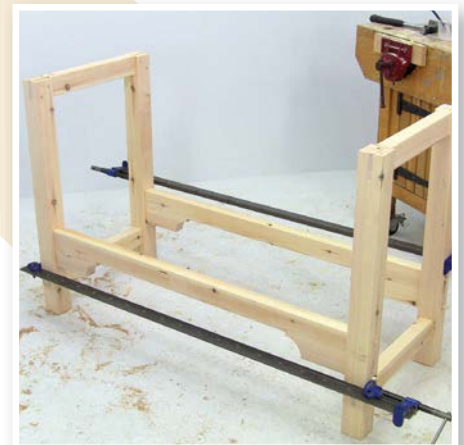
STOPPED SLIDING DOVETAIL JOINT It locks two pieces together but it can be difficult to make so it fits nicely.

STRAIGHT BIT A router bit with straight cutting edges, the most common type of cutter in many sizes.

STRAIGHT GRAINED The grain pattern when annual rings are perpendicular to the face and run parallel to the edge.

STRAIGHTEDGE A variety of measuring devices that have a square, straight side often marked with measuring scales.

STRETCHER A horizontal support member on an item of furniture such as a table, chair or workbench) it ties to vertical elements such as legs.



Stretcher rails in a bench frame

PHOTOGRAPH BY ALAN HOLTAM

STRING Side timber that supports the treads and rises in a staircase.

STROP A device usually leather, used to add the final finish to a freshly sharpened blade.

SWEEP The curvature of a gouge ranging from flat, with very little curvature through to deep curves. ■

Various vintage spokeshaves



PHOTOGRAPH BY MICHAEL HUNTLEY



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Laminated beech stand

A stylish, contemporary piece of furniture that is at home in the lounge or conservatory



This elegant plant stand topped by a leafy plant in a decorative container will brighten up a dull room corner.

This traditional stand gets its contemporary appearance largely due to the use of a light wood – in this case beech, but ash or maple would be equally good. The techniques used should stretch the average woodworker's abilities enough to make it an interesting project. The top is 38mm thick, but looks thinner thanks to a careful choice of moulding on the edge. There's a lower platform which helps add strength and the stand is supported on three flared legs.

Design

Use suitable raw timber stock for the top, this one is 50mm thick sawn beech, wide enough for over half the diameter. This is planed and thickened down, then cut in half, glued and clamped together to make an oversized square blank. The lower platform is the same, except the finished thickness is 25mm and roughly 315mm diameter, if necessary prepared as for the top, using two pieces. The legs consist of laminations. This technique is ideal for ash and works well for beech as used here. Usually the narrow strips (lamellae) would be bandsawn to form the narrow strip components, but I decided to use my tablesaw as it could give 'planer finish' strips that would fit together closely.

Draw some angled lines across the blank piece you are going to cut into strips so you can reassemble the pack afterwards in the correct order for a better grain match. In order to arrive at the correct final thickness you need to cut 4-4.5mm wide strips. Five strips will be required but cut an extra one in case of problems. The strips should be over-width to allow for thickening later on. The degree of leg flare is a matter of personal taste, balanced by the bending properties of the timber in question plus the height at which the lower platform is going to be set. The drawings show how to estimate this shape by measurement rather than using a giant trammel. This latter method is perfectly possible, however, using the radius shown.

You will need

- Planer thicknesser
- Bandsaw
- Tablesaw
- Clamps
- Router in table + long straight bearing-guided cutter, large-diameter roundover cutter, guidebush & 12.7mm TCT cutter
- Pullsaw
- Chisel
- Ruler
- Spirit level
- Square
- Extramite glue
- Petroleum jelly
- Paper strips
- White spirit

LAMINATING PROCESS



1 Mix the powder with water and apply the glue to each lamination

Laminating legs

1 The glue has to be capable of setting rock-hard without any movement, ruling out PVA which can flex when set. A powder glue such as Extramite is suitable, although aliphatic resin glue dries harder than plain PVA and may work perfectly well. With powder adhesive follow the instructions carefully as it can cause dermatitis and the mix can be lumpy when you really need it to be very smooth. Once mixed, apply with a slip of wood on one each of the meeting faces, but not both as the extra glue is too thick to exude completely from the joints. Place the glued pack into the jig, taking care to keep the ends level and at a suitable position so you end up with a flat leg section that is long enough. Mark the jig to make for accurate repeats when making the other two legs up.

2 I used super-strong Irwin clamps as they flex and don't mark the work but apply a lot of force. At least five clamps are needed to hold the pack into the jig, starting where the flare begins. Make sure the strips are level but don't clean off the glue. Leave to set for 24 hours – do not be tempted to undo the clamps before then



2 These clamps are immensely powerful and the rubber pads prevent damage to the workpiece

because the glue must be allowed to set really hard. Repeat with the other two legs, making this exercise a three-day job. Now remove the last lot of paper and wipe the release agent away using white spirit on a rag. Also scrub the legs to degrease them.

Thickening

Place one leg into the existing jig and make a cam clamp to hold the leg against the jig firmly but without the amount of force required for laminating.

3 Feed the jig into the thicknesser mouth, setting the correct depth including the board underneath so the cutterblock just skims off the glue, then re-pass to neatly finish the timber. Repeat this operation with all three legs. Note the jig fixing screws must not be too long as the jig itself gets thickened down at the same time. Now unscrew the jig, turn it over and refix to the board. Screw the cam in the new position and repeat the thickening operation on the other edge of each leg until you reach the final thickness of 38mm. You should now have three matching legs finished in both planes and needing to be trimmed to length. ➤



3 The clamps are replaced by an MDF cam for thickening

MAKING A LAMINATING JIG

The laminated legs demand the making up of a jig on a board, the straight and flared shape being formed using prepared softwood to become a mould. Mark the shape on the softwood and bandsaw it out. Glue the pieces making up the mould until they are wide enough. Do not glue them to the board as they will be removed later on. Instead, screw them on to the board from underneath with the screws properly countersunk in. Importantly, the jig needs a release agent, and petroleum jelly, that most ubiquitous of all lubricants, is perfect for the job. Apply it liberally, especially along the bottom corner where the jig meets the board as glue will be exuded in this area. Place strips of paper on the board, cut to fit neatly against the jig as a further means of release.



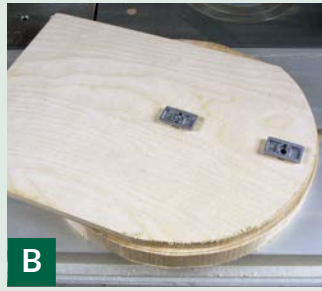
The jig with the glued components ready to be clamped in place

CIRCLE BLANK CUTTING



A

A piece of masking tape is applied to the drill to act as a visual depth stop



B

These fittings from the router table featherboards provide a perfect way to hold the jig on the table. The underside of the sliding circle-cutting jig with a blank attached



C

The jig setup ready to cut. Note the stop board clamped firmly in place and the cutter guard



D

In the process of cutting. The blank needs to be held firmly to prevent it spinning the wrong way and causing damage. Note the rotation marks as a clear reminder to the operator

A-B Most router tables have a mitre protractor slot, often of a safety pattern where anything pushed into the slot cannot simply lift out but is trapped. I used slot fitments from some featherboards to make the jig. A screw goes through one of them underneath and into a pre-drilled hole in the centre of the blank.

C-D A long straight cutter is fitted in the router collet and a stop board is clamped beyond

the cutter. The front edge of the jig base is cut away in a curve to avoid the router cutter having to work more than necessary. Press the blank up against the cutter body between the blades and set the stop board against the jig base (it must slide under the blank). Withdraw the jig and switch on the router. Grasp the blank firmly and slide the jig towards the cutter which will then begin to bite and turn the blank anti-clockwise towards the cutter rotation. Do not let go of the blank until a section has been

cut. If you do the cutter will just run idly against the blank, and if you don't grip the blank as you move it on to the cutter first of all, it will get caught by the cutter and spin the wrong way very alarmingly but worse still it will rip some of the end grain out. Repeat this rotation cut, moving the stop board back a millimetre or two each time until the correct diameter has been reached. Repeat this technique for the other blank and you will have two perfectly smooth, round, flat edged-blanks.

Top

4-5 While the leg glue-ups are taking place you can get on with shaping the top and lower platform blanks. Make up a homemade trammel bar with a pencil to mark both circles and bandsaw slightly oversize. The finished shape is done on the router table using a special jig. I wouldn't claim it is unique but I haven't seen it described elsewhere and it does work. It is the same principle as bandsawing circles using a special fixed trammel point or jig (see circle blank cutting).

More router work

6 The underside of the top is wasted away using a large, classical bearing-guided cutter. This gives two successive curves plus a slight step, resulting in a much thinner appearance. This can be done on the router table or freehand.

7 The lower platform calls for a large diameter roundover cutter set down enough to give a step shape at the top. All these operations should be done in several depth stages to avoid too much strain on the cutters.



4

A router trammel bar and a taped-on Biro work quite well for marking out circles. Cut 2-3mm outside the marked line to leave just a limited amount to be machined away on the router table



5

Machining the underside of the top using a large, classical-profile cutter



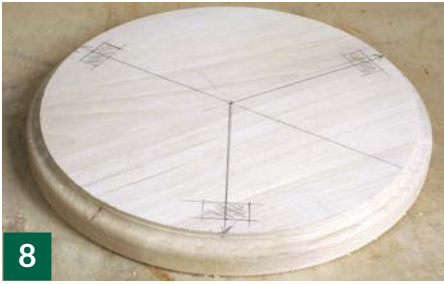
6

The resultant shape after doing both top and bottom cuts before sanding. Note the slight step near the bottom of the profile



7

Machining the large roundover on the lower platform is safer done on the router table. Note the improvised lead-in pin



8 The 'pie chart' lines set out to allow marking of the mortise positions



9 The underside of the mortising jig showing the bandsawn detent which allows the jig to sit properly on the curve



10 The jig firmly clamped in place and overhanging the bench for mortising



11a Each tenon is cut by hand and the corners are rounded with a chisel



11b Writing the joint letter inside the joint allows each one to be identified after the surface markings have been sanded away prior to assembly



12 Use a pullsaw to cut the leg bridle to take away the minimum possible to avoid weakening the leg. A counterbore is used to both drill and create a hole ready to plug over the screw head

Joining

The legs are mortised into the top so marking out must be accurate. In fact, I drew one line that ran through the screw hole and then made a mark by eye for the other two positions and used a ruler to check the distances between the marks on the circumference. They were almost exactly correct and needed only slight adjustment – thank heavens for the 'cabinetmaker's eye'.

8 Now draw a line through these two marks and the screw hole to create the 'pie chart' appearance. Mark the mortises the correct distance in from the edge, allowing for the leg tenon which will be shouldered.

9-10 Make up a jig to machine a mortise. This will rest against the circumference and is intended for use with a guidebush and a 12.7mm diameter cutter. It gives a well-rounded hole.

11 The tenons are marked and cut by hand. They need to be slightly shorter than the mortises to allow for glue squeeze-out.

12 Next, the platform must be bridled into the legs,

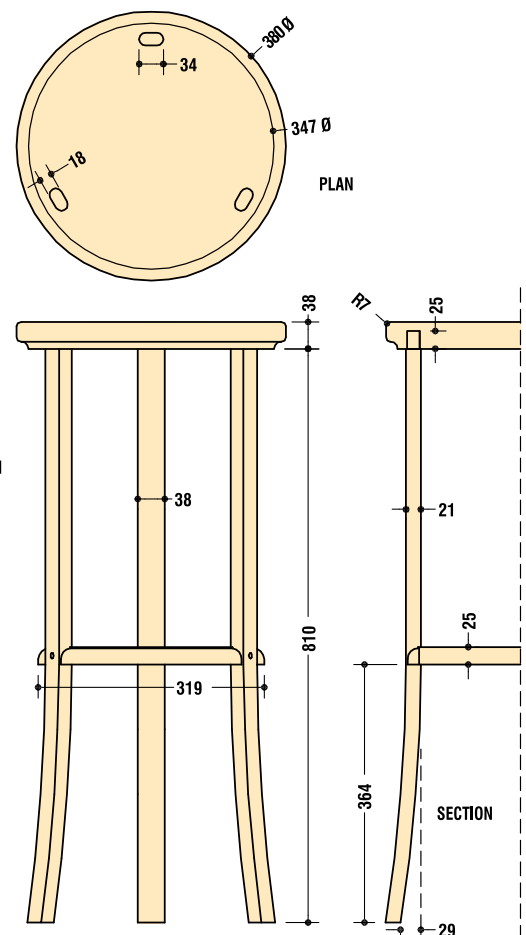
removing the least amount necessary from the legs to keep strength at this point. For accurate alignment, mark each bridle down from the top of the leg. The leg should slightly overlap the upstand edge created by the roundover cutter when the joint is assembled

Assembly

Dry-assemble the table and use a counterbore bit through each leg into the platform so it just goes in enough to fit a beech plug after running a screw in. Completely sand all surfaces and glue and assemble including screwing the platform in place, then place heavy weights on the tabletop to close the joints until dry. Once the glue is set, place the table on a flat level surface, determining this with a spirit level. Place a block or ruler against the foot of each leg and mark a line. Draw across the flat of each leg using a square, saw carefully to the lines and sand the bottom edges.

Finishing

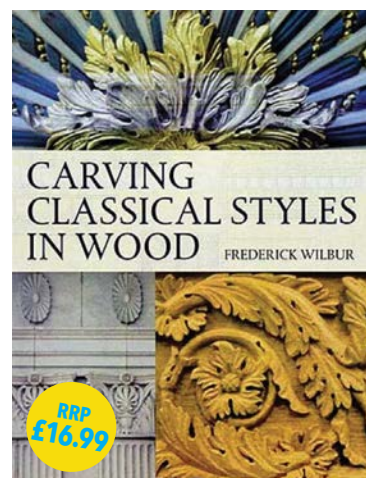
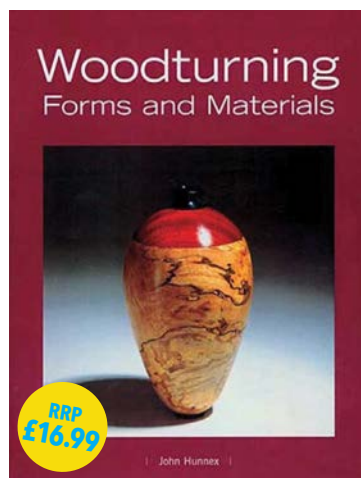
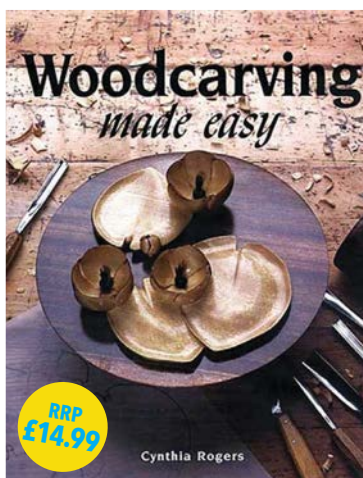
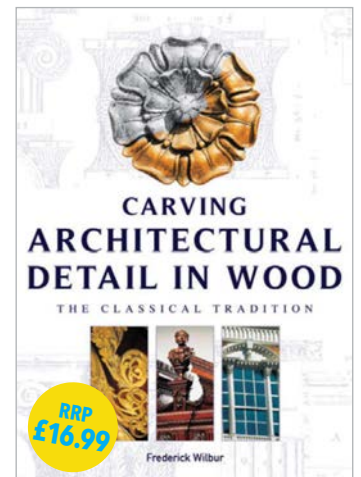
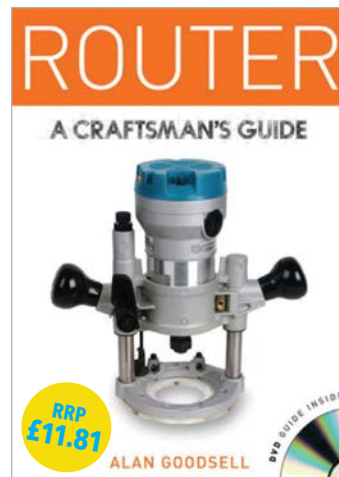
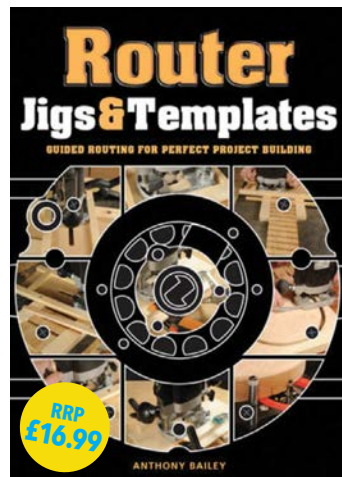
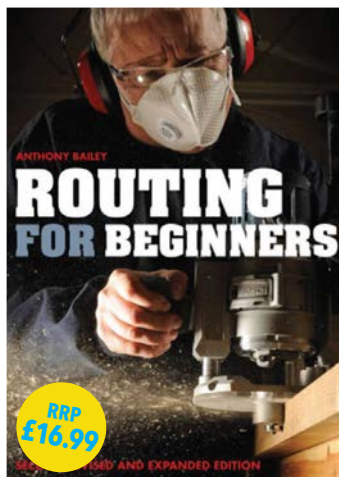
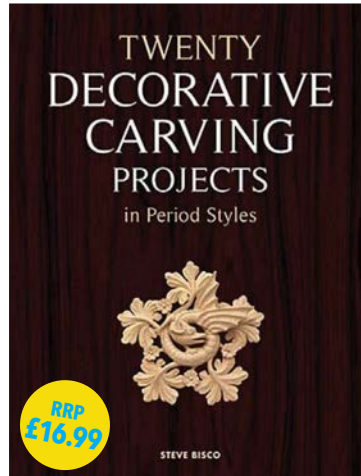
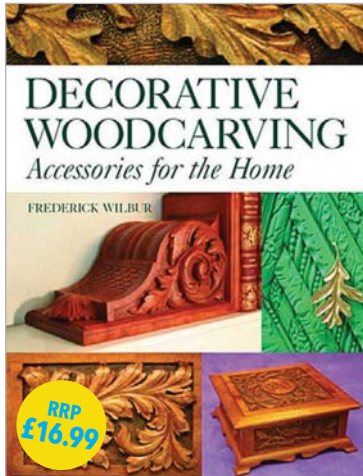
All that remains is to apply a finish. Bearing in mind that plant pots sometimes leak or get overwatered, a clear varnish is probably your best bet. The result is an elegant addition to a modern living room. ■



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Meet the contributors...

We put all of this month's professional and reader contributors here, so you know exactly who they are and what they do



Louise Biggs

Having completed her City & Guilds, Louise trained for a further four years at the London College of Furniture. She joined a London firm working for the top antique dealers and interior designers in London before starting her own business designing and making bespoke furniture and restoring furniture.

Web: www.anthemion-furniture.co.uk



James Hatter

James' main interests include design and construction of a wide range of wood-based projects, and DIY, mainly for home and family use. Ash and oak are favourite timbers, which are

included whenever possible in appropriate projects. He enjoys teaching and working with his seven-year-old grandson, Kieran, who often makes really good suggestions in design. James makes good use of woodworking machinery for enjoyment, and sometimes to overcome a lack of skill with hand tools.



Michael Essam

Mike is a craft teacher and woodworker. He works with people of all ages and abilities for whom he devises projects that try to be interesting and ensure successful outcomes.

A collection of these project designs was published by Collins. He also sells some of his own work.



Simon Rodway

Simon has been an illustrator for our magazine since 'the dawn of time' itself, drawing on his experience in the field of architecture. He also runs LineMine, a website with articles and online courses on drawing software. A new course, SketchUp for Woodworkers, is proving really popular.

Web: www.linemine.com/courses



Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and, over the years, has made bespoke furniture, including clocks, inlay work, Adam fireplaces, book cases and reproduction furniture.

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Paul Adamson

Paul runs green woodworking courses in his native Derbyshire and likes to hand carve and use woodenware from the green wood he gathers during local woodland management works.

Bushcraft, spooncarving and kuksa vessels are among the many things he enjoys teaching out in the local woodland.

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Amber Bailey

Amber is a marquetarian and surface design artist with a background in furniture restoration. She has trained in prestigious decorative art schools both sides of the English Channel and is now based in North Wales working for a furniture company using laser-cut marquetry.

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Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and

Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.

Your face and details could appear here in our 'rogues' gallery' if you write an article for the magazine, and you could be rewarded for your efforts too.

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SHARPENING

Part IV

Turning tools

Turning tools require very specific techniques to sharpen them correctly. We show you how

Turning tools need to be ground to create an edge to cut with on the lathe – they are not honed or stropped afterwards like other woodworking tools. The action of the wood turning gives enough motive power for the tool to cut effectively and any burr remaining after grinding is instantly removed by the action of cutting into the wood. However, there are significant differences in technique which need to be followed for effective sharpening and use of all the principal types of lathe tool. Lathe tools are unusual in that the presentation angle to the wood is varied according to the technique used and shape you are cutting. Therefore the cutting edge of the gouge needs to be of a shape that can be manipulated to cut at a specific area of the cutting edge in order to cut the wood effectively to the form required. Each tool has its own uses and therefore grinds and cutting-edge profiles.

PARTING TOOL

The parting tool is the easiest to sharpen. You simply set the tool rest to create the required angle for the parting tool – the inclusive angle can be anything between 30 and 45°. So, with the tool held against the rest, gently push the tool into the grinding wheel to create a clean grind, then turn over the tool and repeat on the opposite side. The actual cutting edge is the line created where the two ground faces meet.



With the toolrest – or here the sharpening jig – angle set, grind off one side...



... and then the other, to create an inclusive angle of between 30° and 45°

SKIEW CHISEL

The skew is perhaps the next easiest tool to sharpen, given that you are just grinding a flat on both sides of the tool to create an angled point. As you can see, the sharpened edge is at an inclusive angle of between 25° and 35° and – when the blade is viewed from the flat side – has a canted rake edge of about 25° too. Set your tool guide to the correct angle and grind one side and then an equal amount on the other, to keep the cutting edge in the centre of the tool shaft.



The skew is similar to the parting tool for grinding. First one side...



... then the other is ground. Be careful to keep both blade angles the same

SCRAPER

Scrapers come in all sorts of shapes and sizes. For your first scraper, we advocate getting a round-nosed version. Sharpening this tool involves a slightly more complicated method than the skew. For the scraper, you are creating a blunt bevel on one side of the tool to create the edge used to clean off your workpiece. A little like a cabinet scraper, you are in effect creating a burr edge, which actually cuts the timber. To sharpen, set your grinder toolrest to the correct angle, somewhere between 45° and 80° – about 60° is a good place to start – and present the scraper to the grinding wheel so one end of the bevel will touch the wheel. Then push the scraper on to the wheel and sweep it around with your fingers, pressing the tool on to the rest and into the wheel with an even pressure, until the full scraping edge has been sharpened. The cut is made by the wire edge created at the intersecting line between the flat top of the scraper and the ground bevel.



Push the scraper into the wheel at one edge first, to start the grind...



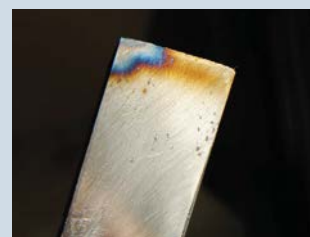
... then, with even pressure on the wheel and toolrest, sweep the handle around...



... until all of the scraper edge has been ground, creating your cutting edge

Top tip

When sharpening on the grinder, take care not to overheat the tool. The first sign of this is the bluing of the blade as it overheats. If it does overheat, do not quench the tool in water as this can cause micro-fractures to occur in the high-speed steel used in turning tools. HSS is now the most commonly used steel for turning tools. This is because it offers increased wear resistance over the carbon steel used before. As with all cutting tools, they have to be both hard enough to take an edge, and flexible enough not to snap when in use.



An overheated chisel

SPINDLE ROUGHING GOUGE



The spindle roughing gouge takes the simplest of the grinds on

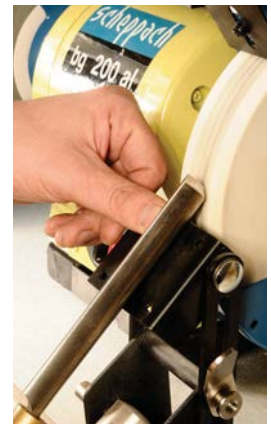
the gouges, as it is basically straight across, creating a flat profile when viewed straight down from the flute. To create the profile, set your toolrest to give a bevel angle of between 35° and 60° – 45° will serve you well to start with. Then push the tool down on to the rest with the flute pointing to about 2 o'clock, and gently push the tool into the grinding wheel. Keep the cutting tool square to the wheel and rotate the tool along its axis to grind the bevel equally across all of the tool cutting edge.



Present your gouge to the wheel with the flute pointing to 2 o'clock...



... then rotate the gouge along its axis, keeping firm pressure...

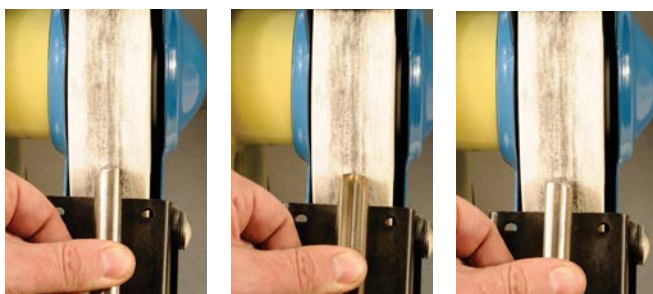


... until all of the bevel on the gouge has been ground

BOWL GOUGE

The bowl gouge can take two different kinds of bevel. There's the straight grind, which most tools come ready prepared with, and the swept-back profile, often called a fingernail profile. The swept-back profile is now the most commonly used grind on the bowl gouge because it gives more actual cutting edge on the tool than the straight grind, and allows the cutting edge to get into tighter areas because the flute sides – known as wings – are swept back. As your turning skills develop, you will find out which grind best suits your turning skills.

Straight grind



Start with the flute facing to the right to start the grind...

... then smoothly rotate the tool along its axis...

... until the flute is pointing directly to the right

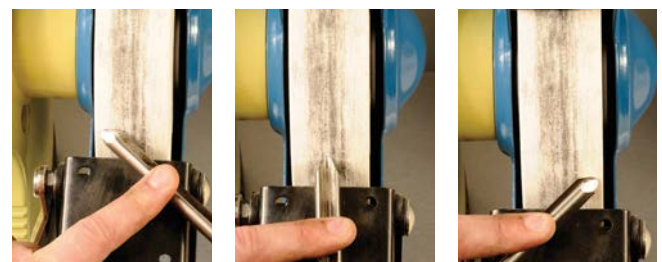
To create the straight grind on this tool, the bevel should have an angle of between 80° and 45° – 45° is a good place to start. Here, just as for the spindle roughing gouge, the tool is rotated along its axis to grind the bevel. First, set up the toolrest correctly, then, with the tool's flute pointing directly to the right, push the tool on to the grinding wheel. When the grinding wheel bites, turn the tool along its axis so the full face of the tool is ground. Repeat until happy with the result.



Here are four bowl gouge profiles. The normal profile on the left is followed by successively more swept-back grinds

Fingernail profile

The swept-back profile is quite a lot harder to achieve on the bowl gouge, as it involves a swing and rolling motion at the same time. What you are attempting to do with this grind is sweep back the wings of the gouge, giving you more cutting area and easier access to the workpiece. Start off with the flute of the gouge pointing to 2 o'clock and the tool presented to the wheel at an angle of about 45°. Then sweep the tool across the grinder while at the same time turning the tool along its axis until all the bevel is ground. An alternative method of achieving the swept-back grind freehand is to cut one wing of the tool, then the other, and then blend in the central part of the gouge. To be honest, the easiest and most consistent way of creating and maintaining this type of grind is to use a jig, discussed on the next page.



Start with the flute at 2 o'clock and a 45° angle...

... then rotate along the axis & sweep the tool...

... finishing with the tool pointing at 45° the other way

PHOTOGRAPH BY JANE ARNULL

SPINDLE GOUGE

The spindle gouge also takes a swept-back profile, sometimes called a 'lady finger' profile. This is achieved in a similar way to the bowl gouge swept-back (or fingernail) profile, outlined on the previous page. The difference in the two profiles is not too obvious, but the spindle gouge tends to have a more pointed outline when viewed from above, looking straight down on to the flute. Again, the degree of difference is very much a personal preference and as your turning skills develop you will naturally find the degree of curvature which suits your turning style.



SWEPT-BACK PROFILE SHARPENING JIG



First, set the angle of the bevel grind with the tool clamp arm...



... then set how far the tool protrudes from the clamp...



... and finally, the height of the tool clamp arm

To create the swept-back style of grind on your spindle and bowl gouges, you can buy a jig to help with this difficult grind. The jig holds the tool steady so that it will follow a sure course as you sweep it around and twist the tool at the same time. The jig screws on to your bench in front of your grinder, then you have to set three physical parameters. First, set the angle of the arm which connects to the tool-holding clamp – this sets the angle of bevel you are grinding. Most jigs come with a measuring device to help you work out this angle. Then set the distance the tool will protrude from the clamping device – this will also affect the angle of the bevel you grind. Finally, set the height of the arm between the pivoting joint and the tool-holding clamp. Once these parameters are set, the jig guides you as you sweep the tool across the grinding wheel.



Use the edge of your sharpening bench, or make a small jig, to mark how far each tool protrudes from the tool clamp so you can replicate each bevel accurately by using this mark again and again.



Follow the same arc as when cutting by freehand...



... but this time allowing the jig to guide the grind as you make it...



... finishing with the gouge at around 45° to the right

TURNING SAFELY



The first rule of turning is to work safely and know how to use the tools and equipment properly. Turning is a wonderful way to shape wood, but the combination of a fast-moving workpiece and sharp metal tools needs care, and dust and debris from turning present risks and hazards.

When turning, many a turner has inadvertently caught a tool edge, causing it to dig in and if the work is very thin, possibly causing the wood to chip or shatter.

Protecting your eyes and face is essential. To minimise risk, always wear a full impact resistant face shield. Also, never wear loose clothing, tie back long hair and make sure there are no trip hazards near the working area.

It is also essential to protect yourself against wood dust. The harmful effects of timber dust are well known, so both ambient and localised extraction are essential – and not just when sanding. When turning seasoned timber, small amounts of dust are released. Obviously, when sanding, this problem is at its worst. In the WWC workshop we have ambient dust removal, and always wear a properly rated facemask when doing any woodworking which puts dust into the air. When sanding on the lathe, I also use a local extraction point, just to make sure. A workshop extraction unit and a hose clamped to the lathe bed are sufficient here. ■

KITTED OUT

Take a look at the gadgets and gizmos that we think you will enjoy using in your workshop

280W random orbit sander

Triton Tools has added the 280W random orbit sander (TROS125) to its popular and extensive product portfolio. This powerful tool has a 125mm diameter hook-and-loop backing pad for quick changes of sanding discs and features variable speeds of 7000 to 12,000rpm. The speed is easily changed using an adjustable dial. At 280W, the sander boasts ample power for a variety of sanding tasks, leaving a smooth, flawless finish. Dust is effectively dealt with by multiple extraction holes on the backing pad. There is also a vacuum dust extraction port that can be rotated 360°, increasing user safety and creating a clean work space. Ergonomic rubber over-moulded grips reduce vibration and increase user comfort, precision and safety. Weighing just 1.75kg, the 280W random orbit sander is light and easy to manoeuvre. Included with the sander are a soft carry case for convenient storage and quick travel, three mesh sanding discs of various grits, a dust bag and a dust extraction port adaptor for different sanding applications.



Web: www.tritontools.com

Sauno wood kilns by Logosol



Sauno is a range of wood kilns made by Logosol, offering a 'time-saving, cost-effective solution for hobby and professional woodworkers and woodturners. Incorporating new Swedish drying technology, Sauno wood kilns make wood drying achievable and affordable for even the smaller scale woodworker and will produce better results'.

The manufacturers say: 'A major problem when drying timber is the wood retaining the water it holds. However, Sauno overcomes this problem by using a method called "relax" drying.

'The relax drying method is frequently used in large sawmills for their best timber, thereby reducing the risk of cracking and other damages caused by accelerated drying. The wood kiln heats and steams the timber at high temperatures, changing the cell structure of the wood and making it possible for

water to move outwards from inside the wood. The next step is to dehumidify the timber.'

Sauno offers a choice of three kiln kits – VT1, VT3 and VT5 – depending on the scale of your requirements.

These kits consist of just the dry control unit and thermostat. Once you have your kit, you will then need to construct an insulated kiln box. Two plans are included: one using an insulated wooden frame, the other using structural floor insulating panels. This DIY solution lowers your investment cost compared to other drying solutions

V1 – £602.40 inc VAT
V3 – £804.00 inc VAT
V5 – £1284.00 inc VAT

Contact: Axminster Tools & Machinery
Web: www.axminster.co.uk

Trend Routing woodworking catalogue 2018

New products for 2018 include:

- Air stealth half mask
- Euro cylinder lock jig
- Drainer groove pro jig
- CRB mortise & fluting accessory
- LED torches

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Coronet Herald lathe

Mark Baker tries out a new midi-lathe from Record Power

The Coronet Herald lathe from Record Power was launched last year and Record's sales description says: 'Thanks to a number of innovative design solutions the capabilities, features and performance of the Herald far exceed anything a machine of this size has been capable of before. It brings top-end professional performance at a fraction of the size and cost of comparable heavy-duty machines.'

I have been able to use it now for the past three months and, mindful of Record's comments, set about seeing what it was capable of.

Lathe assembly

The lathe can be used as a bench-top model, so you need to decide if you mount the lathe on a bench or on a stand, either homemade or bought. I wanted to use the tubular leg stand Record offers for this lathe.

The tailstock is held in place by a screw lock clamp mechanism. The handle to do this is on the rear side of the tailstock. The toolrest assembly is locked in place by a camlock-handle mechanism and the toolrest positioned and held in place by a threaded lever lock handle.

The headstock – minus the motor and control – is locked in place by a level clamping mechanism on the rear side of the lathe. The motor and speed controller is placed on a machined round rod at the rear of the headstock and slid on to this so the pulleys fit into the hole in the headstock. A nut is used to secure the motor in place on the end of the round rod and a lever-locking arm is placed in an arced slot

and used to lock the motor in place.

When assembled, the lathe centre height once on the legs comes to about 75mm below my elbow. To raise it further blocks can be placed under the legs.

Initial impressions

Assembly can be done solo, but it is helpful to have a second person. The headstock, lathe bed, tailstock and toolrest assembly are all cast-iron. I was impressed with the quality.

When looking at the headstock, I noted that at the end of the lathe spindle, which runs through a hole in the end of a plate section covering a gap on the headstock casting, there is a handwheel. Look at the picture captioned 'inside the headstock'. This shows that there is no rear bearing at the end of the spindle. There are three bearings in total in the extended cast housing at the front of the headstock. Two are placed at the front of the housing, then there is a gap and then

the third is at the rear of the extended housing. This is not a new concept and is used on other makes of lathes, some of which are much larger, with good success to this day.

Note also the castellated 24-position indexing wheel, the silver spindle-lock/indexing lock button, the small screw to affix the flip-over cover and the pulleys. All lock positively and easily.

The headstock can be moved along the lathe bed and/or rotated. This is done by slacking off the headstock locking mechanism at the rear. Once the pressure is eased off you can rotate it to any position you like, even turning it 360°.

There are three indents to shift the spindle from in line with the lathe bed to 90° to the bed. Once in the position you lock it in place. If you set the spindle at 90° to the lathe bed you can turn larger work using a bowl-turning attachment or a floor-standing rest. Swivelling the headstock can be a huge help when hollowing out work. You



The digital speed control and speed readout unit

have a nicer working position than when leaning over a lathe bed. The swivelling headstock also means you can turn the head round to the other side and select the reverse spindle rotation on the controller, which enables left-handed turners to work successfully. This, of course, requires that the chuck used has a mechanical locking mechanism to lock it onto the spindle so it cannot rotate off.

In use

I found the power delivery was smooth, precise and responsive with no hesitation whatsoever. It is also quiet. There is loads of torque for larger faceplate or spindle work up the diameter capacity over the bed.

There is a small time delay before reaching the speed selected and for it to stop after switching it on or off.

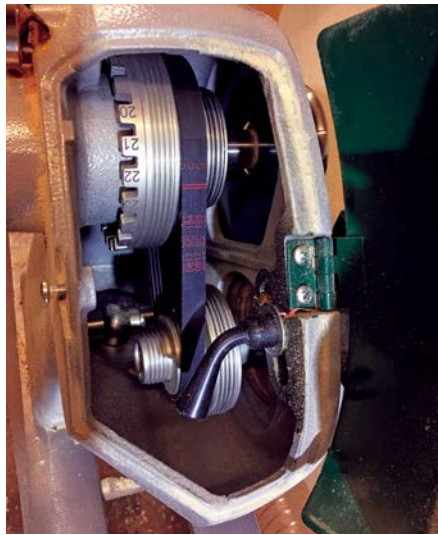
Maximum torque for larger work is obtained by working on the slower pulley. The speed range possible not only caters for the larger work, but also for small lace bobbins and delicate spindles.

There is a belt ratio press-button that you click to indicate which belt you are on which will give a minimum and maximum speed range appropriate to the pulley selected. The speed ranges are: 95-1055, 140-1868 and 290-3890rpm. The middle pulley is the one that will likely suit the largest variety of work.

It is worth noting that the lathe has a reverse spindle rotation option too. The speed control unit takes a little getting used to, but it is quickly learned.

When turning some spindle work using a 150mm-long piece of 115mm-diameter sycamore spindle work held on a spigot in the chuck working on the unsupported tailstock end of the wood, I noticed some vibration. I experienced the same on the outer edge of faceplate work on 250mm x 100mm timber.

I tried various things to find out the cause. It wasn't the bearings or



Inside the headstock

the chuck. I wondered if it was the stand. I tried the lathe on the DML305 adjustable stand and there was no vibration, so it must be the leg area.

Re-fitting the lathe on the leg stands, I tracked it down to the rubber feet and when I removed them it stopped the issue.

Using the BTA

Trying the bowl-turning attachment I found that there is a slight amount of flex when it is used at maximum reach when rough-shaping work using it to turn the maximum diameter possible. Nothing that I found prevents the turning of the work, just go a bit gentler on the heavy cuts, or that affects the finishing cuts.

I think that most people would only turn work with a BTA occasionally so it is nice to have for those occasional jobs.

Conclusion

I loved the leg design as it allows you to fit a dust extractor underneath, saving valuable workshop space. The manual says the legs can be filled with sand, for extra weight. I found the lathe a delight to use. Functionality wise, it did everything I asked of it without fuss and components stayed put when locked in place with no creep under pressure and use. I think it is a great midi-lathe which will suit many turners' needs, capacity and space-wise. At £999 I think it is a very good price for what it delivers. ■

Tech spec

- Maximum between centres: 508mm
- Maximum swing over bed: 355mm
- Maximum bowl diameter when using the bowl-turning attachment: 533mm
- Spindle speeds: 95-3980rpm
- Swivel headstock
- 24-position indexing
- Three pulleys
- Motor input P1: 1kW
- Motor output P2: 0.75kW
- Thread: M33 x 3.5
- Taper: 2 Morse taper
- Weight: 48kg
- Size: W870 x D290 x H252mm
- Five-year warranty – covering manufacturing and construction defects for a period of five years from the purchase date.

Accessories supplied

- Knock-out/lever bar
- Revolving centre
- Four-prong drive spur
- Faceplate
- Instruction manual

Prices:

- Coronet Herald lathe: £999.99
- Tubular leg stand: £149.99
- Cast-iron outrigger: £49.99
- Bench feet (riser blocks): £69.99
- Bed extension 400mm: £179.99

Contact: Record Power

Web: www.recordpower.co.uk



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Makers Central 2018

Show Report by **Lee Stoffer**

May was the start of the show season for me, and it all kicked off with a brand new show called Makers Central, hosted at the NEC in Birmingham by NZ Woodturning Co.

I was lucky enough to be asked to open the show with the first live on-stage demo, which seemed to go down really well with the growing crowd. It was great, if a little daunting, to look out and see so many friendly faces engaged in watching me hack away at some freshly cut timber with my favourite edge tools to make a quick spoon and describe the process.

For the rest of the weekend lots of highly popular YouTube makers from all over the world took to the stage to either demonstrate or talk about their skills, process and motivation. The hall was constantly buzzing with excited visitors clamouring to meet their favourite YouTubers.

All in all the organisers managed to put together a very impressive and successful show that catered for a huge range of interests, from the most basic woodworking right through to computer programming and robotics. Many of the popular trade stands you'd expect to see at a woodworking show were present, along with an eclectic mix of individual makers, crafts folk and exhibits, which meant there was an amazing variety of skills and products to entertain a diverse range of visitors. There were also plenty of opportunities to get hands-on and have a go at some of the crafts on display.

If you didn't manage to get along to the show this year I'd highly recommend visiting next year, when we'll hopefully be doing it all again, maybe even bigger and better. You can check out the Makers Central website and YouTube channel for more info: www.youtube.com/watch?v=C3zqf6iUuig

EVENTS

Peter Sefton Furniture School Open Day, Saturday 14 July 2018, The Threshing Barn, Welland Road, Upton Upon Severn, Worcestershire, WR8 0SN
www.peterseftonfurnitureschool.com

Lammas Festival, 28-29 July 2018 – (to be confirmed), Western Lawns, Eastbourne, East Sussex
www.lammasfest.org

Sawfest, 27-29 July 2018, Sheffield and Bamford, South Yorkshire. For anyone who is a handsaw fanatic there is one must-see festival – ‘Sawfest 2018’ held in several locations in Sheffield, the home of toolmaking in steel.
sawfest.co.uk

Woodfest Country Show, 28-29 July

2018, Pen-y-cefn, Caerwys, North Wales, CH7 5BP
www.woodfestcountryshow.co.uk

South Downs Show, 18-19 August, 2018, Queen Elizabeth Country Park, nr Petersfield, Hants, PO8 0QE
www.southdownsshow.co.uk

Biddenden TractorFest and Country Fair, 18-19 August 2018, Woolpack Corner, Tenterden Road, Biddenden, Kent TN27
www.tractorfest.co.uk

Henley Country Craft Show, 24-27 August 2018, Stoner Park, Henley-on-Thames, RG9 6HF
www.thecraftshows.co.uk/henley-on-thames



PHOTOGRAPH BY GAVIN PHILLIPS

Sawfest, Sheffield

Stock Gaylard Oak Fair, 25-26 August 2018, Stock Gaylard Estate, Sturminster Newton, Dorset, DT10 2BG
www.stockgaylard.com

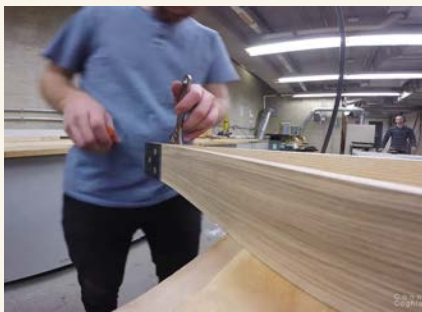
Charcoal and Woodyard Weekend, 25-27 August 2018, Weald and Downland Museum, Singleton, West Sussex, PO18 0E
www.wealddown.co.uk

Web links for you

YouTube

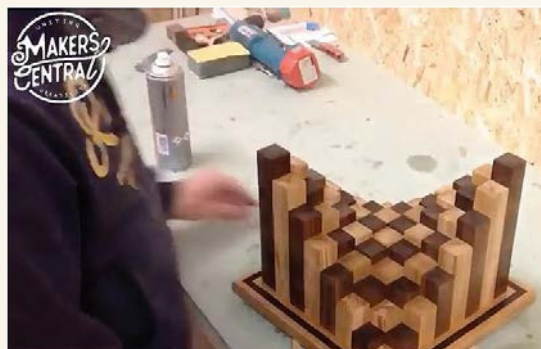
How To Make A Chair Conor Coghlan

A fascinating university project designed to get both arms and legs of a chair interacting to create a chair that flexes under load. Not only that, it looks elegant with its deceptively simple bow spring design.



Makers Central

As mentioned by Lee Stoffer in his show report, check out this YouTube channel for plenty of amazing crafts, not just in wood. There's a whole world of ingenious and innovative makers out there creating unique works for you to appreciate.



Pinterest

Wooden boat building

Boat construction is fascinating, the way materials and methods come together to create elegant, seaworthy vessels and there are plenty here to admire.



Twitter

@WoodworkingNuts

‘Before and after’ by Jeffrey Michael Samudosky. From giant tree trunk to giant Kraken, a most impressive piece of work.



PLANS 4 YOU

Slatted sun lounger

Simon Rodway takes it easy with his latest project

Having somewhere relaxing and comfortable to sit on a sunny day has to be one of life's great pleasures, and that is exactly what I had in mind when putting together this month's project – a slatted sun lounger. Although to some extent you could see it as a luxury item, particularly when you consider the amount of space occupied, I particularly like this curved example as it is also designed to fold up for storage when not in use.

The construction, in fact, is in principle very simple, and there are very few joints – just a couple of mortise and tenons on each pair of legs. What is required is a certain amount of geometric precision when it comes to setting out the main curves, and also in the spacing of the legs and headrest, since the smaller components all have to fold away inside the main body, and then the leg or bottom section folds over that as well.

When cutting a curved shape you obviously want the grain to be parallel as much as possible with the direction



Folding headrest with two steel pins either side at ends of supports, which fit at different depth into slots in inner faces of curved seat rail

Top or seat section slats project beyond curved rails to finish flush with outer rail

Folding back legs, also joined by bottom rail. Front and back legs cut at feet to sit flush on the ground

Leg stop

Folding front legs joined by bottom rail, open against front stops fixed into inner face of curved seat rail

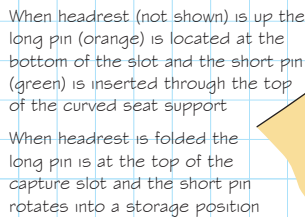
Seat slats fixed to curved rails using two screws at each end (not shown for clarity) to create rigid joint.

Seat slats on bottom section finish flush with outer face of curved seat rail

Cutting list

Curved seat rails	4	@	Ex 950 x 225 x 22
Front legs	2	@	Ex 250 x 60 x 22
Back legs	2	@	Ex 350 x 65 x 22
Headrest supports	2	@	Ex 290 x 45 x 22
Seat slats	22	@	680 x 69 x 12
Headrest slats	3	@	588 x 69 x 12
Leg rails	2	@	588 x 44 x 22

Note: leg stops not included in list. These could be timber or rubber/plastic screwed to inner faces of rails.



Wax & wane

Sometimes the simplest of finishes is the one you can really take a shine to

There are so many ways to finish a piece of furniture or a turning, carving etc. But there is one substance that will do far more than just add a finish, one that is ingrained in our collective memory more than any other – wax. Why is this? Say wax and we can easily think of beeswax because of its natural association with nature and bees, or perhaps spray wax for housework and easy polishing of furniture, even if it does contain unlovely silicone rejected by antique lovers and restorers, or – let's be slightly revolting – ear wax, something we all suffer a surfeit of from time to time. So we tend to recognise it in general terms as a constant in life. Wax, the thing we need or don't need but it's always there. So, what is so special about wax as a substance?

Source Wikipedia – *'Waxes are a diverse class of organic compounds that are lipophilic, malleable solids near ambient temperatures. They include higher alkanes and lipids, typically with melting points above about 40°C (104 °F), melting to give low viscosity liquids. Waxes are insoluble in water but soluble in organic, nonpolar solvents. Natural waxes of different types are produced by plants and animals and occur in petroleum.'*

So there you have it, hopefully that makes sense. Let's put it into practical terms by looking at some really handy

Safety

All solvents are hazardous to a degree, being formed of hydrocarbon compounds, so always read the label on the tin and, if necessary, visit the manufacturer's website to download the relevant safety data sheet.



Wax can be solid, semi-solid or liquid, depending on the formulation

forms of wax that we can use in our everyday woodworking activities. Bear in mind that waxes are always a blend, even if it is a single wax and it's solvent, but most will be a more complex mixture of components. Wax compounds are used for other things, such as car body finishing, but we are concerned with wood.

ALL SORTS OF WAX

PHOTOGRAPH BY JOHN BULLAR



In solid form, beeswax can be heated to melt and apply to a surface

Beeswax

This is perhaps the simplest and most pleasing wax to use. It is basically refined beeswax produced by using the empty wax chambers that bees make to create a hive. A fantastic product of nature that has many applications but looks and smells distinctive and pleasant due to the presence of oil of turpentine as the solvent, itself a natural product derived from pine resin. It is considered moderately toxic, so if



Beeswax is a component of many different paste and liquid waxes

used in quantity good ventilation is essential during wax application.

The wax is non-hardening so, although it will shine an existing complete surface finish such as French polish, it cannot repair it or make up for the lack of any finish. It is generally supplied as a paste but can also be obtained in stick form.

Carnauba wax

Carnauba comes from palm leaves on trees grown in parts of Brazil. It is incredibly hard and is the essential main ingredient in a typical hardening wax. It has a complex chemical makeup which gives it its essential strength and useability after refining and bleaching.

Although it can be used on its own, for instance in stick form for applying to turnery when it is rotating so the heat melts the wax, it is otherwise normally blended with other waxes and solvents to make a useable paste or liquid wax. Carnauba on its own is capable of scratching a highly finished surface due to the degree of hardness.



Carnauba wax is incredibly hard in a pure form



Applied to turnery, carnauba makes a complete finish on its own

PHOTOGRAPH BY JOHN BULLAR



A hardening wax compound is the standard way to finish bare or sealed wood

Hardening wax

Hardening waxes are a combination of waxes such as beeswax, carnauba and microcrystallite dispersion agents and a solvent. Since carnauba isn't guaranteed to break down into a fine enough state, possibly making the wax compound lumpy, a microcrystallite ingredient ensures that all the waxes, especially carnauba, do disperse so the finish achieved is a smooth, even shine without any risk of the underneath finish becoming scored in the process of application. ➤



Wax with micro-abrasive included can give a good sheen to wood

Micro-abrasive wax

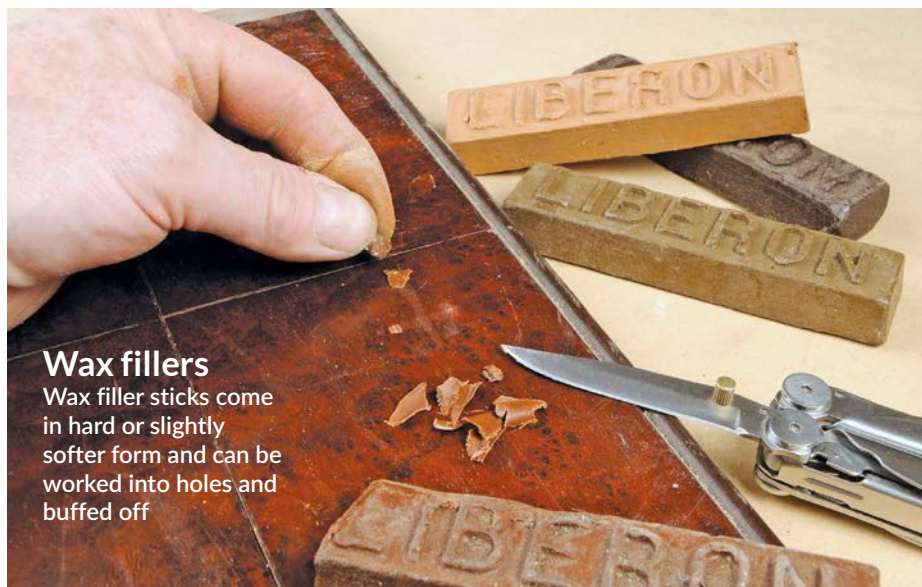
A newer form of very refined wax capable of being used on finished wood surfaces or plastics, depending on the product. It is intended to increase the level of finish by the use of ultra-fine abrasive particles in the wax. The wax acts on those particles so it reduces their tendency to score surfaces. The result is an ultra-fine shine where the object will benefit from the additional treatment.

Hardwax oil

This gives the best of both worlds when wood finishing. It can be used on furniture or flooring and is applied as an oil but with waxes present, so once it has dried it has the more lasting shine of a typical wax finish. It can be applied in more than one coat for a complete finish. It has become increasingly popular because of ease of application and the quality of finish achieved.



Hardwax oils have the benefits of wax finish in an oil-based form



Wax fillers

Wax filler sticks come in hard or slightly softer form and can be worked into holes and buffed off



A clear machine wax gives the necessary slip without contaminating the work

Machine wax

There are various different wax compounds which can be in a solid or paste form and are intended to improve the performance of machine tooling and machine feeding, such as giving a thicknesser bed more 'slip' by reducing friction. For woodworking machines it needs to be a clear type that doesn't stain into the wood grain.

Spray wax

Standard silicone spray waxes are not approved for antique furniture and are not suitable for woodworking processes as the silicone can allegedly scratch a delicate finish and it will create a 'resist' effect that will prevent lacquer etc from bonding to a surface and will 'reject', i.e. roll back. There are specialist spray waxes without silicone.



Always use non-silicone spray wax on woodwork, either new or existing

Candle wax

This is the traditional method of preventing drawer runners from sticking where two dry wood surfaces slide against each other. It works, but a hardening wax will also do a pretty good job.



Repaired pine drawer runners ready for waxing to help them run smoothly



Tallow is a very solid, sticky form of blade lubricant useful for handsaws

Tallow

This is a rendered animal fat compound which has limited use in woodworking. Sometimes used as a lubricant on handsaws. More recently it has been subject to objections from animal rights organisations as it is a by-product of the meat industry. It is a component of candle wax.

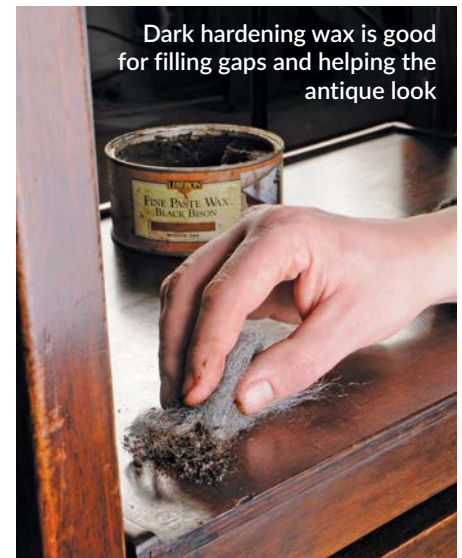
USAGE TECHNIQUES

Hardening wax is the favourite type for most work. The colour can make a big difference and you can get it in different shades, from clear, tinted and various colours depending on the brand. Clear or a light tint is fine for most purposes, but those with a colouring medium added in, such as 'antique pine' or 'Georgian mahogany' are extremely useful for adding a richness, a completeness of finish which may be lacking, especially on restored work. A dark shade can fill small gaps and cracks on old pine or an antique without resort to filler sticks or indeed wood filler.

When applying the wax use very fine 0000 wire wool or mutton cloth which

has an open weave. Both can make the wax stick to an already shiny surface and are good for rubbing the wax into bare wood. If you want a quick result use more wire wool or mutton cloth to wipe off the surface and buff to a sheen. If you leave the wax to dry out, once the solvent has evaporated it becomes hard and difficult to shift. The answer is to apply more wax to soften the first lot.

Keep a clean cloth for the final buffing and you should achieve a nice level of sheen on the surface. Intricate detail or carving can be waxed and finished using suitable brushes, preferably natural bristle for a strong action without damaging surfaces. ➤



Dark hardening wax is good for filling gaps and helping the antique look



Hardening wax needs positive pressure to stick evenly to a highly finished surface



A natural bristle brush is good for buffing without damaging surfaces



Rubbing coloured wax on to a painted surface alters the appearance considerably

Finishing on paint effects

If you are using special paint finishes, such as milk paint, waxing over the paint will change it dramatically. It can take away the rawness of new paintwork instantly and, combined with tricks such as 'rub thru' to paint layers or wood underneath, can create a shabby-chic effect.

Liming wax is used for a decorative effect on open-grain timber, generally



Liming wax infill can be white, black, metallic or any colour you want

oak. It can be white or any suitable colour but the underneath surface may benefit from a sealing coat so the liming paste doesn't colour the entire surface.



Turnery

Turnery can be polished using neat carnauba wax while turning on the lathe at low revs and gives the highest, shiniest finish but needs a bit of skill to do well – it relies on the wax heating up and softening. A safer option is using paste wax on a buffing wheel and offering the work up to the wheel to get a good finish rather than just rubbing on with a cloth.



Cast-iron can be very 'dry', so waxing helps a great deal to reduce friction

Machine use

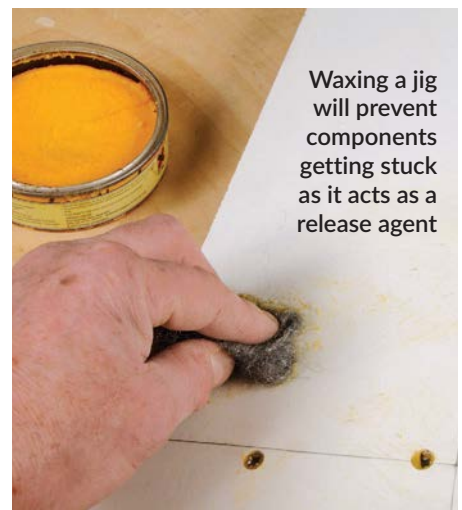
Having some 'slip' on machine tables, whether cast-iron or MDF, makes a real difference. It is particularly noticeable when thickening because the pressure of the rollers on boards causes a high level of friction. Machine wax is fine for certain engineering purposes but standard clear hardening paste wax does the job perfectly well. If you machine one face and then turn it over any traces of wax should get removed as the thicknesser bed gets repeatedly used.

Screwing

Traditional slot-head screws often need a bit of help driving neatly into wood. Brass ones are particularly vulnerable to slot damage by the driver tip. Using a spot of wax on the threads will help the screws into the wood without effort.



Beeswax is an easy way to help screws drive into their holes



Waxing a jig will prevent components getting stuck as it acts as a release agent

Jigs

Wax is very useful if you want non-stick jigs when gluing up. That way you can avoid components for laminating etc from damaging a jig if the glue won't bond to the jig.

Conclusion

The use of wax is a varied and wide-ranging subject but hopefully you can put waxes to good use in your woodworking projects. ■

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Birch bark matchbox

PHOTOGRAPHS BY PAUL ADAMSON

Working with bark is a nice, relaxing change from heavy woodcarving work, involving a little thinking about to produce some useful items.

By **Paul Adamson**

The silver birch tree (*Betula pendula*) in the UK has a poor reputation for its bark as a craft resource, but this is unfair. The bark we are talking about is the outer bark, which peels away from the inner bark attached to the main woody stem. For most other tree species that have useful bark it's the inner bark that is used. I have made many interesting items for myself, others, and with students on courses from bark obtained through woodland management works in the Midlands. You just have to lower your expectations. Birch bark canoes you can forget about obviously, but small to bucket-sized pots can be made and if the bark is a little thin, just double the thickness with another piece, or use the same section coiled around twice. Getting the bark off the trees can be quite easy and yields lovely bark that is not too thick or thin if you have a clean section of the main stem around 200-250mm in diameter and around the same in length. Small knots, twiggy shoots and lenticels can normally be worked around with care, and the bark from freshly felled trees is best for ease of removal, workability and appearance. It can be removed throughout the year, but it is sometimes easier when the tree is still in the growing season.





Barkcraft as two separate methods

Woven items such as knife sheaths and arrow quivers make use of thin sections of bark that can be cut out of larger sheets that have faults in them. These would otherwise have been thrown away if solid containers are the only project in mind. Woven projects take longer to make but have greater strength within them due to the flexibility the weave gives them.

Most containers for food or equipment are made using a single unwoven sheet because it's quick, convenient and, if made well, strong enough for the job. We will look at the most simple of these types in this article – a matchbox. I originally observed this method of pot making after watching an excellent programme by the television presenter Ray Mears.

First off we need to source some bark from recent felling work or, if you're lucky, a piece fallen in a storm during the past year. Please don't peel bark off living trees as it can cause decay to enter the tree and invites less careful foragers to also remove the inner bark and potentially kill the tree.

1 Tools required are simple. Cutting with good scissors is easier than with the knife most of the time. Strong wood glue helps to make a long-lasting project. Knives and saws are used to work the wood for the base and lid. Some cordage or leather is needed for the lid handle, and a template should be designed beforehand.

2 After finding a useable section within the bark, use the template to draw around and cut out a section free from holes and faults. You can alter the template in height and length but the distance from the letterbox and the back of the tab that goes through it is close



to 100mm. This gives the right final pot diameter for holding a box of matches.

3 The remaining dimensions in this case are 250mm long and 65mm wide. The letterbox is 2mm wide with the tab that fits through the same width, but with the arrow-shaped wings wider to lock into place.

4 The inside of the bark has the best surface finish and appearance and will be on the outside of the pot. Clean up the flaky silver surface that will now be the inside with a knife and by rubbing sections off with the hands.

5 Then cut out the letterbox section carefully with the point of a knife.

6 I use the point on a corner and then rock back like a guillotine rather than dragging the blade across the line. It's safer with less slippage.

7 Glue roughly around the area pictured and roll up the pot tighter than the final size so that there is room to pop the tab into the letterbox.

8 After a bit of wriggling though it'll fit, but a trim with the knife may be necessary. ➤

9 Now we add some simple formers to squeeze the glued sides of the pot together.

10 A round, straight stick of hazel split down the middle with a slightly smaller diameter than the pot is ideal, and two wedges as pictured.

11 Simply add the sections as shown and offer up the wedges firmly, but not forced excessively, until the excess glue squeezes out. Clean up the excess glue.

12 Make the base and lid the same way by carving a round stick to a taper until around 5-8mm fits inside the pot.

13 Mark the limit of protrusion and saw off. The base is tidied up on a piece of sandpaper and then glued into place.

14 For the lid piece, drill a small hole around 3mm dia. A sharp, pointed needle file does an excellent job of this. Into this a piece of ready-made string or leather can be added.

15 Here I've plied some lime tree fibres from the inner bark of the tree into a simple two-ply cordage.

16 Feed both ends through the hole of the lid and use a thin wedge of wood and glue to fix, tapping into place. Once dry, trim off for a flush, neat fit.

17 All done. A quick wipe-over with a drop of walnut oil to bring it to life, and it will last many years as a strong waterproof container. Use 'strike anywhere'-type matches or tape on a striker surface to the base for safety matches. ■



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Berea College Kentucky



This month we look at a unique educational establishment in the States, with a very inclusive ethos and located in an area of natural beauty

Berea College is a liberal arts work college situated in the city of Berea in the US state of Kentucky. It is located in Madison County, 35 miles south of Lexington – itself an important place in the history of America, the Appalachian mountains lying to the east.

Student promise

What caught my eye was the college's statement that no student will pay a tuition fee – the only one in America to make that promise. Although it is a Christian-based college, it is open to everyone regardless of race or creed. Consequently it is able to teach and support students from disadvantaged backgrounds. Set in a beautiful part of the States and with such a welcoming approach to learning, it seems like a student's dream placement. In Berea's own words: 'The best education money can't buy.'

The college

Courses cover a wide range – languages, physical education, maths, computer science, economics and much more, but my major interest was the woodcraft workshop. I asked woodcraft supervisor Andy D Glenn to tell me more. 'Berea College is a special place. It's definitely what caught my attention when considering this position. Berea is a wonderful small town and a great place for our family to be.

'I think what drew me to the job, which I started August 2017, was a little bit of everything – the principles of the college, the town and surrounding natural environment, the history of the woodcraft program, and ability to work alongside the college student crew all drew me to the opening.'

Andy continued: 'It's a challenge unlike others I've encountered when it comes to woodworking and this really

excites me. My challenge – can we be successful? Can we make beautiful, functional work? Can we provide meaningful experiential learning?'

Woodcraft training

'Training the students is an area where I spend a lot of time. I want to get them to the point where a student leader can take a group of less experienced crew members through the process of making our pieces.' *So how does the production in the workshop benefit the College?*

'In a lot of ways. It's all about the work – making beautiful wooden pieces that the college then sells and the revenue goes back towards supporting the educational mission. But there are other aspects at play as well. Providing design opportunities for the students. Taking the time to train them in new and different skills. The goal here is not an assembly line, but having students

PROFILE – Andy D Glenn

Can you tell us about yourself Andy? How did you get into woodworking in the first place?

I had woodworkers in my family and that exposed me to making. One grandfather was the town milkman, and he had a basement shop where he built small furniture pieces and gifts for the family. My other grandfather was a farmer with a wood and metal fabrication shop. He could build anything, and did so, to keep his farm operational. I gained my initial experiences through time spent with them. Then, through high school, I would spend time in my neighbour's shop and he taught me the safe use of many of the machines and how to complete a project.

I went to the North Bennet Street School in Boston, MA from '06-'08, completing the Cabinetry & Furniture Programme. For the following five years I worked in small custom furniture and repair shops, along with teaching woodworking workshops at NBSS. I followed that with experiences at a shipyard and a custom cabinetry shop, while building furniture on the side. And I continued to teach.

In the future I will continue to travel and teach, though on a limited basis.



Andy demonstrating the spindle gouge to the shop student wood turner Azariah Mawoka

with the skills to take a project from the rough board all the way through to completion.'

Typical working day

What is your own working day like in the woodcraft workshop?

'My days vary greatly. My goal is to train our student crew to the point of relative self-sufficiency. I'll always be working alongside them and with them on our offerings – we're co-workers here at Berea College. I have much of the information and experience, and I need to transfer as much of that as I can to them. That takes time, patience, and a willingness to work slowly in the short term with the belief that the students will gain experience and speed up in the long run.

'There is another full-time woodworker in the shop – Chester Mullins. He works with the students as well and he typically takes a small crew through a large project (such as making all the furniture for a dormitory on campus, or creating architectural details for a newly constructed building). He also makes custom furniture and does great work on the lathe. He's been here five years and his background was with the army, fabricating wooden parts for airplanes.

'Chester supervises five to seven students, depending on the special project running through the shop. I work with 18-20 students and we make the production items we carry in our catalogue and stock in an inventory area.

'We have plenty of administrative work – ordering for the shop,

budgeting and credit card reconciliation, etc. We have collegiate duties as labour supervisors, which include writing evaluations for each student and meeting with them to discuss their performance.

Methods

'A majority of our work is produced by machines and has been for the past 35 years. There is a significant amount of handwork that was once a part of the programme and we are working towards adding handwork into our designs going forward. Out of our current catalogue, I'd refer to our lathe work as the most "handwork" thing we do. Students turn our wooden baskets and the details in the turning show the hand of the maker. Other students are turning rolling pins and candlesticks. Again, the slight variations show the skill and design eye of the turner.

'We use chisels to trim and adjust tenons. We'll make modifications to pieces with a plane, or use hand tools for a repair. But the production items were designed for machine efficiency. ➤



Chester Mullins





The typical shop meeting includes updates on our current production, upcoming projects, and demonstrations around techniques



I'm planning on adding the hand details into upcoming pieces/designs. We're currently redesigning our Harmony Bench and Stool to a design with more regional aesthetic, and that incorporates handwork.

A typical student group

Andy says 'Berea's mission determines our student groups. Most of our students come from the Appalachian region here in the States. We have international students as well – men and women of course. This past year we had a few more men than women working within our crew. Freshmen are selected for their labour position, upperclassmen can apply for open positions. I'll have 15 upperclassmen for this fall, and will need to select five freshman students to fill the open positions.

'It's an awesome aspect of our shop that, because Berea College draws in the diversity of the region and our student crew reflects that diversity. Berea College is designed to provide education for students of low financial means. It's a common trait across most of the students here.'

The student working day

Andy says: 'Students work their shifts around their class schedules. Most students have classes or work running from 8am-5pm each day, so at times the shop has a couple of students working, other times we'll have 14 or so. We have one hour (4pm-5pm) on Tuesday afternoons when all the students are here. We fill that time with training, safety, and other relevant information. We also have Tuesday evening hours (6pm-8pm) when we'll cover a topic as a group – furniture design, training in the spray room, how

to mill lumber, how to use chisels and planes, sharpening, etc.

'Students normally work within small crews of three to five to complete a small run of an item'. He continues 'We have a basket crew making continually – milling, turning, assembling, and weaving. Some students work more around the machines, because they like selecting and milling lumber. Others would prefer to do quieter detail work, such as assembly and sanding. I try to keep students engaged with tasks that they enjoy. We have so much work that it's possible to do it this way'.

'As the year progressed last year, our students' skill set grew to the point that many of them could handle much of what we do from start to finish. But it takes time to get to that point. Students typically work 10 hours a week and need time to become comfortable in the shop. Most of the students do not have a "hand skills" background. Their high schools did not have woodworking programmes. Some students will major in a related field, such as Technology & Design (they'll receive shop experiences within that programme), but most others haven't worked with wood before joining our shop crew.'

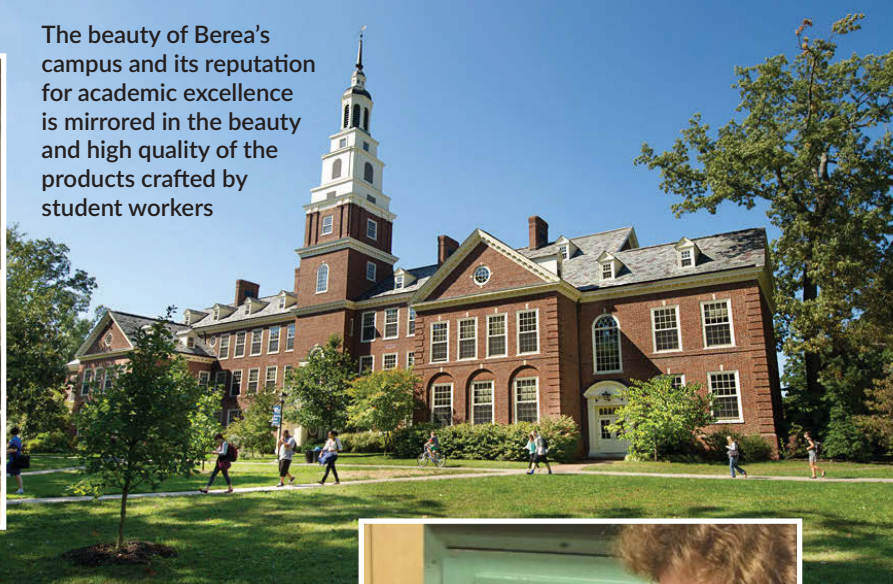
Functional wood shop

Andy put me straight on a critical point. 'We are not a course, but a functional wood shop within a college. We're mostly making our production items, custom work, and speciality items for the college. We work within the labour programme here at BC – separate from the educational programmes but of equal value.

'Freshman students must work for a full school year. Upperclassmen change work positions each semester, if they'd



The beauty of Berea's campus and its reputation for academic excellence is mirrored in the beauty and high quality of the products crafted by student workers



Growing from a model of self-sufficiency to furnish College buildings, Berea's Woodcraft later began making items for retail sales, such as fine colonial-styled items in the 1930s

like, though many stay in one position during their time at Berea. So it's possible to have a constant turnover, and we constantly need to train up a new crew. One of my objectives is to provide a quality, enjoyable experience within the shop in order to retain students. Students are trained on whatever job is coming through the shop and they join midstream, joining a crew and contributing as they can.'

Student remarks

Andy observes: 'Students are an integral part of our programme. In fact, I see my role as supporting them in the production of our items, and not the other way around. There are two full-time staff and 25-27 students. They're doing a majority of the woodworking. I lean on them to do good work and to hold each other to a high standard of work. I think they realise their work is needed and appreciated here. Of everything we do, it seems that students are naturally drawn to the lathe'. Shaina Melton, a 2012 education major, says: *'Working in the shop has taught me patience, concentration, responsibility, dedication, and the importance of teamwork. I'm extremely grateful for getting to have such amazing experiences here and I hope I get to have many more.'*

DeAndrae Lightfoot, a 2021 Heath & Human Performance major says: *'Working in woodcraft has been one of the best experiences I've had in my five years of working. If you enjoy solving problems, working with your hands, and working in a peaceful environment, then this may be the job for you.'*

Products for sale

The Crafts Program at BC includes: woodcraft, broomcraft, weaving, ceramics, and jewellery. Most products are both functional and beautiful. The weaving is completed on traditional looms. The broom-making is done in a low technology way, with much of work done by hand.

'The woodcraft programme has gone through different variations and forms throughout its history. We produced furniture from Wallace Nutting's collection at one point (1930s-40s), making more early American and colonial-style pieces. During those times the woodcraft programme consisted of six to eight full-time woodworkers/furniture makers and 40 students.

'The products are made of Appalachian hardwoods: cherry, walnut, maple and oak. Some of it comes from the College's forest and Berea community, otherwise it is purchased from a regional distributor. Outside of custom commissions, much of the production items are small in scale that they are easy to ship or transport in a vehicle. There are a healthy amount of online sales: bereacrafts.com. A good portion is sold through the college-owned crafts gallery, the Log House, and at the BC



college visitor centre. Woodcraft's production items include wooden baskets, games, kitchen items, and small furniture.'

I'd like to thank Andy D.Glenn for being so helpful and forthcoming about the work that goes on in the woodcraft workshop at Berea College. Maybe there's something we could draw from that back here in the UK? ■

If you are interested in an international placement or simply want to find out more about this unique institution visit: www.berea.edu



Most items are produced in small runs – like these single and double handled cutting boards – so that students can experience all the skills necessary to produce our items



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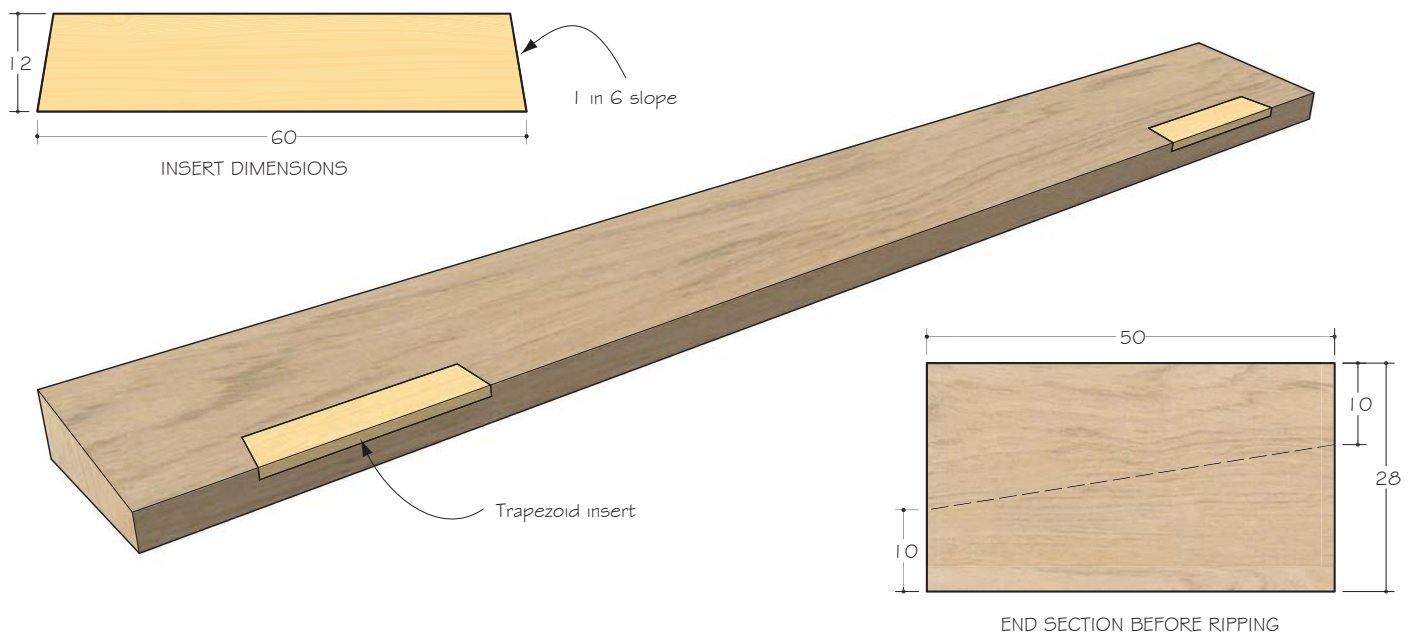
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is more

Winding sticks *and how to use them*

Stick or twist? **Michael T Collins**
levels with us once again



For most of us, if we are presented with a piece of wood we can sight down its length and easily see any twisting or cupping – I am forever doing this at the big box stores when looking for the straightest boards. But when we have rough-sawn long boards it is not so easy to do as they are generally unwieldy.

1 Winding sticks are used to amplify the twist or wind in a board. In this article I will take you through the steps of making a pair out of straight-grained wood. I have a pair made of mahogany that is at least 100 years old. Having just finished a vanity top in walnut I thought that the off-cuts would make a nice pair, but any hardwood will work.

2 Take a piece that is 45cm x 5cm x 3cm and on one end mark a diagonal 1.5 cm from one side to 1.5cm on the other side. We are going to be making a pair, both tapered, and I find that having a slightly wider bottom makes for a more stable tool that's less prone to toppling over. ➤



3 Join these lines together and proceed to rip the piece in two – try to split the line so that each half is almost identical in size.

4 Clean up the saw cuts with a jack plane, adding the 'sighting' markers. Sight marks are a visual aid that emphasises the amount of wind in a board. It's a good idea to have a contrasting colour for these. On one of the sloping edges mark a 3mm x 3mm rebate – this is going house a darker wood (purpleheart) inset into a full-length rebate.

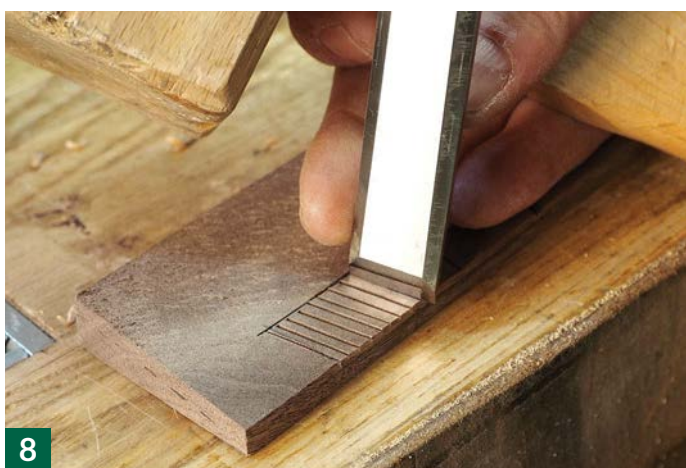
5 Scribe the location then plane using a combination plane. Glue the inlay into the rebate and hold in place with masking tape. Note: If you want a really dark wood check out my vanity top article in issue 41 where I explain the process of ebonising wood. It's a good idea to use a lighter-coloured wood on the other winding stick. I am using yellow heartwood which will contrast nicely with the purpleheart.

6 Cut the lighter wood to the required shape. Here I cut them into trapezoids 12mm deep with a base 6cm long and 3mm thick. The slope edge was 1:6. I used a makeshift mitre box to cut the angle.

7 On the slope side, position the inlay pieces about 2cm in from the ends, and scribe around the inlay. You have now outlined the section that needs to be removed.

8 Make some relief cuts with a chisel and pare away the waste.

9 Set the depth of the router plane cutter just a hair under the inlay's thickness.





10 Finish off the removal of the waste with the router plane.

11 Glue the inlay in place.

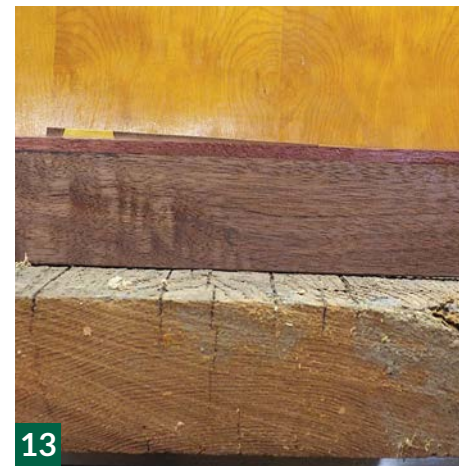
12 Finally, plane the winding sticks so that the inlaid pieces are flush. You now have a pair of winding sticks that will serve you for many years and no doubt last 100.

So let's put the winding sticks to good use. In my stack of wood, I have many nice pieces that one day will be incorporated into a fine piece of furniture, but I also have several pieces that are equally nice, but due to poor storage have either twisted, cupped or warped. A beginning woodworker might be tempted to consign these pieces to the burning pile. But wait, not so fast. This is where our new pair of winding sticks comes in. The first step is to realise that one of the aims, when preparing wood, is to get the most useable wood out of a board.

It often pays to cut long and wide boards into more manageable sizes. Doing this will invariably remove some of the issues – for example, a board that is bowed along its length can be cut into smaller lengths with less bow.

So, let's look at a simple issue – a twisted board. Just a word of caution, this process works well on well-seasoned boards – if they are not seasoned there may be movement after the process and it will need to be done again.

13 Start by placing the winding sticks as shown in figure 13. Here you can clearly see that there is significant twist. Start by flattening one edge. If there is a bow, snap a chalk line the length of the board so that any bow in the edge is eliminated.



14 With a jointer plane, bring the edge down to this line and mark it as the face edge. Next work on one of the faces. If the board is cupped, place it so the convex side is uppermost – the board is more stable this way. If the board rocks, place small wedges under it to keep it steady.

15 Using a shoulder or combination plane, create a shoulder at both ends of the board to a depth that just clears any cup across the board and bow over the length. The shoulders must be at right angles to the newly planed face edge.

Now take your brand-new winding sticks and place them, centred, in the shoulders you have just created.

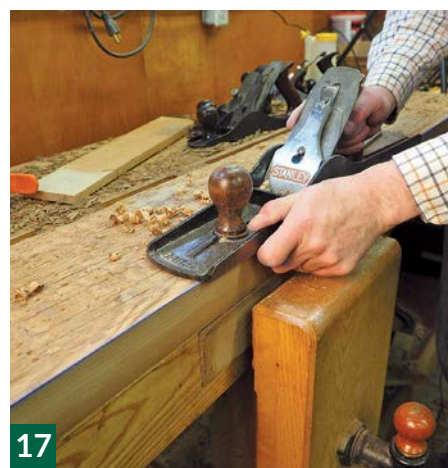
Sight down the board. If a winding stick marker at the far end is occluded, adjust the rebate until you have the winding stick parallel.

Once the winding sticks are parallel, snap a chalk line the length of the board on each edge from one shoulder to the other. Plane each rebate slightly lower if the snap line does not lie within the board's entire length. The idea is to have the two flat areas and the snap lines be coplanar and at right angles to the face edge. ➤



16 Use a scrub plane (or smoother with a cambered blade) and work diagonally across the board (from the planed edge), bringing the surface down to the snap lines. It's a good idea to chamfer the exit side of the board so that tear-out is minimised, especially with a scrub plane that has an aggressive bite.

Once the board is brought down to the snap line you can switch to a jack plane. Work in the opposite direction diagonally across the board – I skew the plane slightly so it slices across the fibres.



17 Check for flatness using the edge of the plane's sole. Finally, end with a jointer, planing down the length of the board. The jointer will bring the ridges down with each successive pass – once the plane is removing continuous shavings stop. Check that this face is at 90° to the face edge and mark this as the face side.



18 From this newly-planed face side, using a marking gauge set the thickest dimension that can be accommodated in the board and deeply mark the thickness of the wood on all edges.

19 Repeat the planing regime on the opposite face. The gauge line will act as a stop and will be revealed as you plane down to it. A pencil line would be missed. Check for squareness.

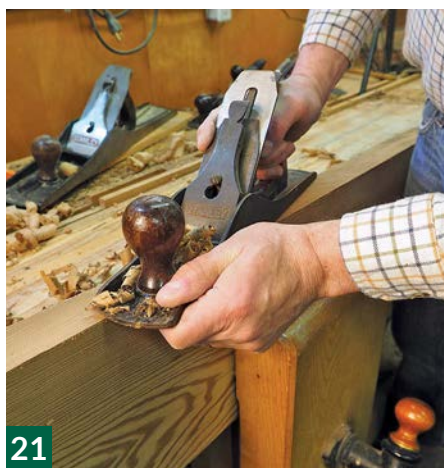
20 Lastly, from the face edge, with a marking gauge or combination square, gauge the width of the widest board that will fit the entire length of the board...

21 ...and plane down to this line.



22 You should now have a board that has a uniform thickness and square. Once you have finished this process sticker the boards and set them aside. If you have to remove a lot of wood, you may want to bring the boards to final dimension in two or more stages as the wood may 'relax' as you start to reveal wood at a higher moisture content.

So in future, don't get in a twist about warped boards, just reach for your winding sticks and straighten them. ■



Coming next month in
Woodworking
CRAFTS

*The editor makes
the case for
personalised tool
storage with
his own
unique design*

**ISSUE 43
ON SALE
02 AUG**

PHOTOGRAPH BY GMC/ANTHONY BAILEY

- Upcycled writing slope
- Wardrobe shelving unit

PLUS: Woodland ways • Plans 4 you – Garden sunbreak
Trees for life – Pear • Working with wych elm bast

Woodland ways

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Ancient hedgerows

There's no doubt about it – for wildlife, any hedge is better than no hedge. But old and ancient hedges have so much more to offer. By **Gary Marshall**

Above: A fallow deer from the Wentworth herd – typical of an 'enclosed' species

Definition – a hedgerow is a rough or mixed hedge of wild shrubs and occasional trees, typically bordering a road or field.

Is it old or is it new(ish)?

One way, in England and other specific parts of the British Isles, to judge whether a landscape is of pre-Enclosure origin, is to take a look at our hedgerows and associated field arrangements.

Old (generally medieval or before) landscape was often divided into small irregular fields, divided by mixed species hedges and with areas of common grazing and strips, cultivated sometimes by one man and his horse or oxen, in 'great fields'. Woods were scattered and, again, irregular, often joined by thick hedgerows or 'shaws', sometimes dating back to original forest clearance. From the medieval era right up to the 19th century and even beyond – if Commons Acts are also

included – there have been movements and Acts of Parliament to enclose 'inefficient' rural land use.

So, if the fields are regular, the hedgerows mainly of 'quickthorn' – hawthorn to you and me (*Crataegus monogyna*) and relatively straight and even (even if outgrown in places) the landscape is likely to be post-Enclosure.

In the 1970s it became popular for hedge aficionados to take a section of hedge and count the number of species occurring over a set distance. A formula would be applied giving an age estimate for the hedge. Some very good mixed native species hedges have been planted for several decades. The above method (and it was always somewhat arbitrary) alone will not help determine the age of a hedge. A good way is to study the oldest maps available – to see if current hedge-lines match old ones. Some may have been reinstated.

Features of ancient hedgerows

Some very old hedges grow on field and woodbanks. Some follow parish boundaries. Specific shapes of these banks help determine the type of boundary. Around the old Royal Forests, banks topped by living or deadwood 'pales' would be erected, with gaps or 'hatches' and 'deerleaps' to allow access in or out of the forest.



A shaw between two fields



Clockwise from top left: spindleberry; butcher's broom; primroses; greater stitchwort

Enclosed landscape – thin hedges and large fields

Look for names such as Chuck Hatch or Forest Gate. Many of these old banks and pales can be seen today – although now eroded and grown into the landscape. Often these pales and banks are grown with massive old beeches and signs of old 'plashed' (chopped and fallen) or pollarded trees.

Often 'non-commercial' species grow in the hedge. Here are a few examples: spindle (*Euonymus europaeus*), dogwood (*Cornus sanguinea*), crab apple (*Malus sylvestris*), wild pear (*Sorbus communis*), wild service (*S. torminalis*), whitebeam (*S. aria*), field maple (*Acer campestre*) and wild rose (*Rosa canina*). At the ancient hedge base you are likely to see a good mix of wildflowers, including ancient woodland indicator plants: butcher's broom, wood anemone, red campion, lords and ladies, greater stitchwort and strange, wonderful parasitic toothworts – not to mention the all-too hedgerow primroses, bluebells and cowslips that adorn our hedgerows in spring.

Hollow ways

Favourite haunts of mine are hollow ways, secretly twisting and running up and down hills between fields, but disguised with a mix of oak (*Quercus robur* or *petraea*), holly (*Ilex aquifolium*), wild cherry (*Prunus avium*) yew (*Taxus baccata*) and, of course, hawthorn and blackthorn (*P. spinosa*).

Cornish hedges

Now there's a subject. While crafted from local stone and earth, many of these, especially in narrow tortuous lanes, date back even to pre-history.



This once was a hedge



An old woodbank

Consequently they are a haven for wildlife and can be seen overgrown with willow (*Salix* spp.), oak, blackthorn and a riot of wildflowers including heathers in heaths and moors.

Historic features to be protected

Hedgerows in the countryside are protected, but ancient hedgerows are easily damaged: by mechanical means – traffic, flailing and woodland machinery; by neglect – failing to spot and deal with unstable trees can mean chunks of hedgerow are prone to irreparable change; by ignorance – gapping up old hedges with inappropriate non-locally occurring species; by spray drift from nearby arable fields; by animals browsing – and by careless development.

So admire our old hedges while you can... ■



A hollow way



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Precisa 6.0VR-P1	Inc 2m STC + TWE + TLE + pre-scoring (as illustrated)	4.0 / 6.5 + 1.0	110 mm x 1400 mm	£3,450.00	£4,140.00
Forsa 8.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 2600 mm	£5,420.00	£6,504.00
Forsa 9.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer (as illustrated)	NA / 6.5 + 1.0	107 mm x 3200 mm	£5,575.00	£6,690.00

STC = Sliding Table Carriage. TWE = Table Width Extension. TLE = Table Length Extension.



Teak occasional table

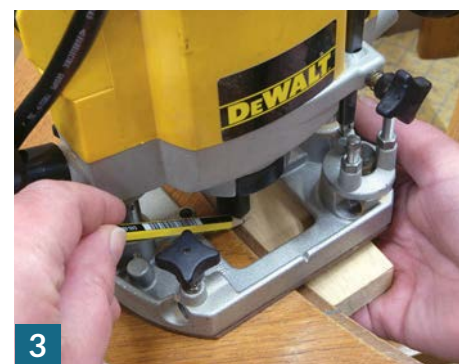
Louise Biggs has a clear-sighted and fitting solution for a contemporary table in need of improvement

The table had been inherited by the clients with the exception of the glass top, which needed replacing.

1 A new toughened glass top had been made, but when they tried to place the glass in the rebate it did not quite fit. They asked if I could just trim the rebate a little until it fitted. Although close in colour to their teak (*Tectona grandis*) lounge furniture, the second part of the job was to tint the finish to match and spruce it up a bit.

2 Fairly straightforward, I thought when visiting the clients. I would need a block shaped to the inside curve of the top. Marked and cut out on the bandsaw, the block was cleaned up with a spokeshave. The shape was checked at several points around the top.

3 The block had a hole cut to allow the cutter to pass through before being fixed firmly to the router base plate using double-sided carpet tape and the cutter set to remove 1mm from the rebate, giving 2mm overall and enough clearance for the glass. Glass should always have a breathing space to allow for any movement in the materials. ➤





4



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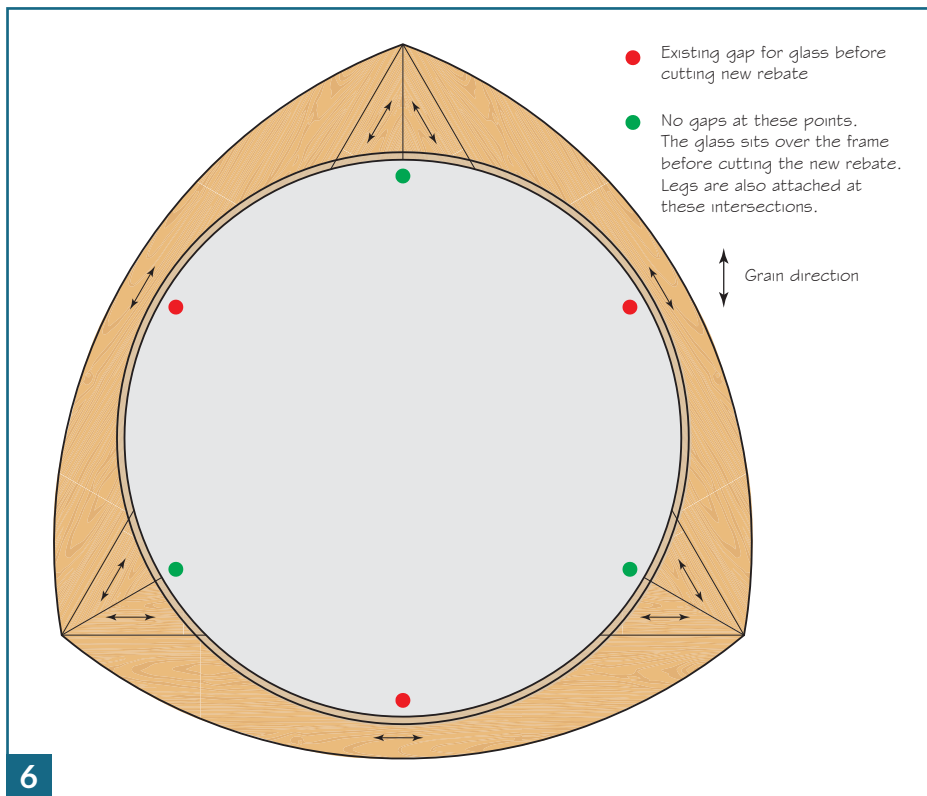


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4 Already knowing there was one problem to overcome in that the surface veneer on one half of each rail would be cut 'against the grain', I decided to set the cutter just above the veneer surface and check that the block would run smoothly around the circumference.

5 In doing this I noticed a problem. The router appeared to move in and out around the circumference and cutting like this would create a wavy rebate, not a round one. Going back a step, I centred the glass over the rim and found the slightest gaps at the mid-points of each rail (right hand) and a tight spot at the intersection with each leg (left hand).

6 It was evident that the table rim was no longer round. As the finish was going to be tidied up I cleaned



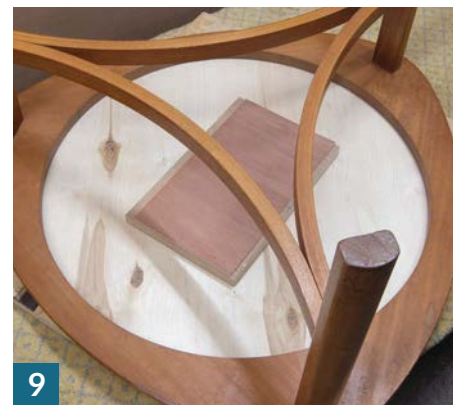
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8

up the rebate to find that the top rim was formed in many sections, not just three pieces as I thought, but with two angled blocks at the point where each leg attached. This had caused the rim to move differently at several points around the circumference. Picture 6 shows a plan view of the frame, without the veneer, showing the construction of the top frame with grain directions and where the original rebate was loose and too tight.

7 In order to re-cut a true circle I was going to need a pivot point in the centre of the table and enough strength to support the router. The first stage was to rout a circle out of a piece of 6mm ply. The circle would need to fit as tightly as possible into the rebate so as not to move around, while keeping the pivot point in the centre. Using one of my Perspex circle cutting



9

jigs I marked the board as to the radius required then using a combination of cutter sizes and different holes I set the router to cut to the outside of the marked radius. Further details on the Perspex jigs can be found in my article in Issue 27.

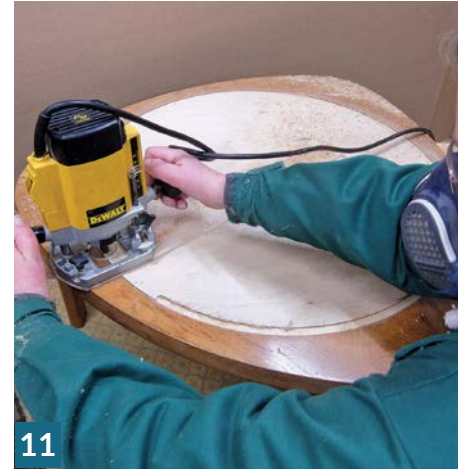
8 The plywood disc was fitted into the rim, any slight adjustments at the tight spots by the legs were reduced as required with a spoke-shave and using double-sided carpet tape the disc was firmly held.

9 With the plywood being the same depth as the rebate the disc would be cut away as the new rebate was cut, thereby removing the pivot point. Waste pieces of board were used to pack out the thickness of the rim until flush on the underside and these were held with double-sided tape.

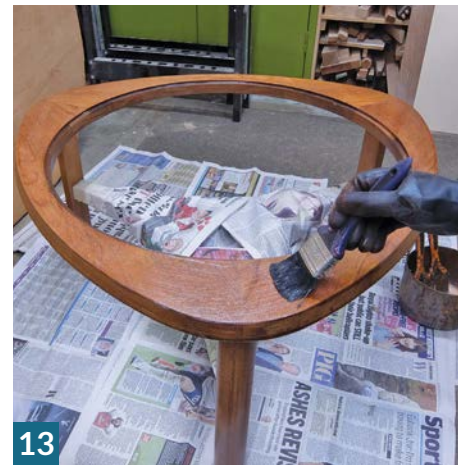
10 A long piece of ply was positioned from inside one leg across the frame to the opposite rail. This was pinned to the table rim and to the packing blocks in the centre. Once it was turned back on its feet the plywood disc was pinned to the waste blocks from the top. All the pieces were now firmly fixed, so there was no chance of the pivot point moving as the new rebate was cut.



11 The router and jig were adjusted between cutter size and pivot holes until the combination allowed for a rebate cut to 1mm larger than the size of the glass. This would cut the rebate near the intersections with the legs while barely touching the rebate at the mid-point of the rails as explained in step 5. The first cut was shallow in order to cut through the veneer and prevent tear-out where the router went against the grain.



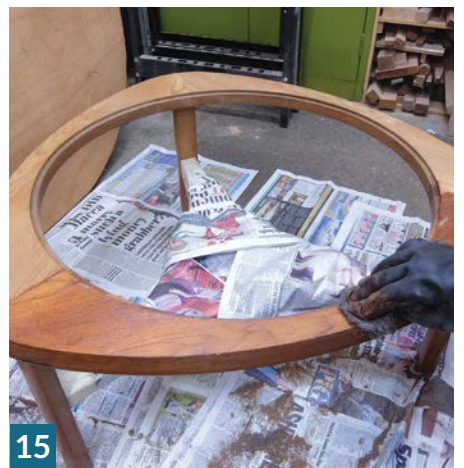
12 Lowering the depth of the cutter each time, the rebate was cut in three passes, the last pass cutting through the base of the plywood disc. The plywood disc was removed and the glass test-fitted before the remaining support boards were removed.



13 The table was de-waxed and degreased and cut back with 240 grit abrasives. This would hopefully remove the minor scruffs and scratches on the rim and show if this course of action would be sufficient to re-coat with a tinted lacquer to match the door sample supplied. After one light coat of lacquer it was evident that the legs and top frame would need to be stripped to give a satisfactory finish. Where the existing lacquer had worn through it created a problem with a two-tone finish. The stretcher rails were masked off using newspaper and masking tape and the stripper applied and left to work.



14 To reduce the amount of wire wool used, the initial surface finish was removed using a flat, wide paint scraper. I made sure the corners of the scraper were rounded to prevent them digging into the surface.



15 Subsequent coats were re-applied and cleaned off using wire wool. Grade 3 is preferred for this type of work as it will not clog up quite as quickly as the finer grades.

Once clean of finish and stripper, the frame and legs were neutralised with methylated spirits and when thoroughly dry the sections were re-sanded with 240 grit abrasive to remove any final residue from the stripping process.

16 Finally the table legs and top frame were spray finished and tinted to match the colour sample. With the glass now fitting within the new rebate the table was ready to go back to its new owners. ■



Trees for life

European beech

A quintessentially English tree found in woodland, hedgerows and as an ornamental specimen, the beech is seen as functional timber, not pretty – but why?

The European beech (*Fagus sylvatica*) is just that. We cannot call it our own as it can be found in many places on the continent and there are different varieties worldwide. Perhaps it is its universal nature, often close to us as hedging or as statement trees on streets and in parks, possibly as the copper beech variety (*Fagus sylvatica purpurea*) and its leaves, catkins and nut cupules that subconsciously remind us of its presence. Its timber, being pink and rather plain and even in grain and texture, always lends itself more to functional items, such as workbenches, mallets, nursery furniture and the like.

The tree

The European beech is a large tree, capable of reaching heights of up to 50m tall and 3m in trunk diameter, though more typically is 25–35m tall and up to 1.5m in trunk diameter. A 10-year-old sapling will stand about 4m tall. A typical lifespan would be 150–200 years, though sometimes up to 300 years. In cultivated forest stands, trees are normally harvested at 80–120 years of age. They start to flower when between 30 and 80 years old. The flowers are small catkins which appear shortly after the leaves in spring. The seeds, called beechnuts, are small, triangular nuts 15–20mm long and 7–10mm wide at the base. There are two nuts in each cupule, maturing in the autumn five to six months after pollination. Flower and seed production is particularly abundant in years following a hot, sunny and dry summer, though rarely for two years in a row. European beech is a very popular ornamental tree in parks and large gardens, not only in Europe, but also in North America and New Zealand.



A perfect hillside view

Did You Know?

Although often regarded as native in southern England, recent evidence suggests that *Fagus sylvatica* did not arrive in England until about 4000BC, or 2,000 years after the English Channel formed following the ice ages. It could have been an early introduction by Stone Age humans, who used the nuts for food. The beech is classified as a native in the south of England and as a non-native in the north, where it is often removed from native woods. In the woodlands of southern Britain, beech is dominant over oak and elm south of a line from about north Suffolk across to Cardigan.

Forest tree

A beech forest is very dark and only a few species of plant are able to survive there, where the sun barely reaches the ground. Young beeches prefer some shade and may grow poorly in full sunlight. A beech prefers drier chalky or lime and light loam soils to grow well. In a clear-cut forest a European beech will germinate and then die of excessive dryness. Under oaks with sparse leaf cover it will quickly surpass them in height and, due to the beech's dense foliage, the oaks will die from lack of sunlight. Foresters may assure the oaks' survival by cutting young beeches with a billhook 10cm off the ground.



Spring leaves and flowers of beech



Beech seed cupules



A beech forest

Working characteristics

The sapwood is hard to differentiate from the heartwood. The colour varies from whitish to very pale brown, and may darken to a pale pinkish-brown. It can turn a deeper reddish-brown with steaming. Sometimes the wood has a dark-red heart or darker veining. It has a straight grain with fine, even texture and a characteristic fleck, and quartersawn wood may display an attractive broad ray figure on radial surfaces. It is suitable for steam-bending. It has medium stiffness and high crushing strength. When poorly seasoned, beech is liable to bind on saws, burn on crosscutting, and cause planing problems. Otherwise, it has medium resistance to hand tools, with moderate blunting of cutters. For nailing, pre-boring is necessary. Beech glues easily, stains and dyes well and takes an excellent finish. It is a very good turnery wood.

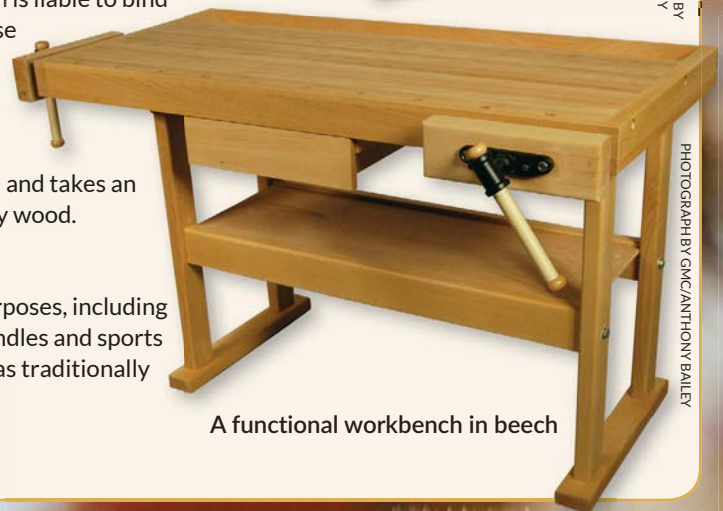
Uses

Beech timber is used for a variety of purposes, including fuel, furniture, cooking utensils, tool handles and sports equipment. The wood burns well and was traditionally used to smoke herring.

A typical example of beech timber



PHOTOGRAPH BY GMC/ANTHONY BAILEY



PHOTOGRAPH BY GMC/ANTHONY BAILEY

A functional workbench in beech



PHOTOGRAPH BY GMC/ANTHONY BAILEY

A simple spice rack

Wildlife

Due to its dense canopy, rarer plant species are associated with beech woodland, such as box, coralroot bittercress, and a variety of orchids including red helleborine. Beech woodland makes an important habitat for many butterflies, particularly in open glades and along woodland rides. Beech foliage is eaten by the caterpillars of a number of moths, including the barred hook-tip, clay triple-lines and olive crescent. The seeds are eaten by mice, voles, squirrels and birds. Because beech trees live for so long they provide habitats for many deadwood specialists, such as hole-nesting birds and wood-boring insects. The bark is often home to a variety of fungi, mosses and lichens.



Barred hook-tip moth (*Watsonalla cultraria*)

PHOTOGRAPH COURTESY OF WIKIPEDIA

Spalting

Spalting is a discoloration caused by fungal attack. It is the first stage in decay, and sometimes the wood can become soft or totally rotten. Beech is a wood that will spalt nicely for making turned work.



Spalted candle holders by Sue Harker

PHOTOGRAPH BY SUE HARKER

Food

Native truffle fungi grow in beech woods. These fungi are ectomycorrhizal, which means they help the host tree obtain nutrients in exchange for some of the sugar the tree produces through photosynthesis. The edible nuts, or masts, were once used to feed pigs, and in France they are still sometimes roasted and used as a coffee substitute.

Mythology

In Celtic mythology Fagus was the god of beech trees. Forked beech twigs are traditionally used for divining.

Medicinal

Beech was thought to have medicinal properties – beech leaves were used to relieve swellings, and boiling the leaves could make a poultice.

You can find examples of beech trees in parks and gardens and avenues, clipped hedges retain their leaves all year round. Look out for beech trees next time you walk in one of these many places of rest and recreation. ■



A beech hedge keeps its leaves

Ask the experts



ANTHONY BAILEY
Editor,
Woodworking
Crafts magazine

Another selection of awkward questions for our experts to answer

KEEP IT CLEAN

Q I like to think I am environmentally conscious, avoid waste, do not pollute with waste compounds and reuse wood when I can. Is there more that I or other woodworkers could do to save the planet? **Q**

Jan Van Fries

Anthony replies: As usual the question is shorter than the answer, which is long – very long. This is, as we are now very much aware, a vast, opened-ended problem with many strands – like a hydra of Greek mythology. Like that beast it takes a lot of slaying. Woodworking produces waste that may or may not be suitable for recycling in some form or other, or better avoided altogether. The first thing is to make sure you recycle according to your local authority rules so at least that part is taken care of, hopefully the material will then be processed. Dustbin waste may enter landfill, which may make sense if it is done correctly. Ask your local authority what it does with it, but if you take it as black bag waste to a recycling station then it could be used for power generation where that is available, except that a limited amount



An incineration plant that can produce electricity from domestic waste

of dioxins may enter the atmosphere on combustion. This is where it gets complicated, because for each problem there isn't a perfect solution. Using aqueous finishing compounds is obviously better than high VOCs (volatile organic compounds) but especially for small-scale spray finishing these aren't really very workable. There are plenty of other examples, the most recent brought to our attention being the widespread use of disposable plastics entering

watercourses and oceans. We can all help in small ways – such as stopping the use of plastic-based cotton buds often used in conservation work and disposable non-recyclable coffee cups, I now take a travel mug with me everywhere. Governments, manufacturers and businesses need to participate and engage fully but we can make lots of little, supposedly insignificant steps too, which all add up eventually, 10, 20, 30 and more years down the line.

GIVE ME SHELTER

Q I've done quite a lot of DIY and more straightforward woodworking. I now want to put up a standalone car port and log store which I want to make out of 100 x 100mm oak posts and trusses across the top of them. I've done drawings and it looks fine, but my question is rot. The ground is quite tough clay soil, I've had various bits of advice, such as kiln-dried oak staying damp in the middle, so is it better to use green oak instead and then clad with shiplap boards? **Q**

Don White

Anthony replies: Rot, as I think you are suggesting, occurs at or below ground level, deeper than that and the timber, especially in clay, will remain intact perhaps indefinitely. So there is a critical area in the first 300mm or so where loose soil, rain and air conspire with growing spores to attack and

decay the wood. Green, i.e. wet, oak is better because it will dry out at its own pace and the tannin should help keep decay at bay. It's not possible to be precise for how long but it should stay in good order for many years. Keep the shiplap clear of things such as compost or piles of leaves as they will hasten decay.



Fresh-sawn oak logs in sizes suitable for building construction work



Even spray technique is important when using aerosol lacquer

TAKE A SHINE TO IT

☞ A friend has told me that standard clear gloss lacquer for car bodywork is the same as the stuff sold for spraying furniture. That could make a difference if I don't have to buy a spray gun and compressor just for one job. Can I get away with using aerosol lacquer instead? ☺

Ben Hadley

Anthony replies: OK, for a start not all lacquers are the same – we will look at spray finishing at some point so I won't go into all the detailed differences here. However, it is true that one-part spray car body lacquer is not dissimilar to the equivalent furniture aerosol finishing product – bearing in mind there are various formulations for wood finishing, I am making a very generalised comparison. If yours is not a big project then half a dozen aerosols and consistent spray technique might be sufficient depending on the timber type and level of finish you are looking for. Do several coats, denibbing between coats with a lubricating abrasive paper, and keep the aerosol moving to avoid sags and runs. Once it has hardened you may be able to use very fine wire wool and wax to knock back the shine and get a slightly softer sheen. Do remember to work in an open, well-ventilated area, no naked lights and an appropriate, well-fitted twin filter mask intended for gases and vapours.

RIPPING YARN

☞ Hi, I've got kitted out to do upholstery as I keep getting asked to reupholster chairs or repair wobbly chairs where the upholstery needs removal to deal with the woodwork first before the soft coverings. I have a tack lifter but it isn't as effective for digging out tacks and nails as I had hoped. Is there a better way of doing it? ☺

Gabriel North

Anthony replies: I get the impression you may be semi-professional or at least the go-to guy for everyone's seating nightmares? A full-time professional upholsterer would usually use what is known as a ripping chisel. It looks rather like a standard woodworking chisel on steroids, because it has a thick, often round and sometimes cranked, shank shape. It has a blade like an older type firmer chisel, no bevels to the sides and it is 'off sharp', i.e. blunt.



An old fashioned firmer chisel is strong enough for tack lifting

Place the edge under a tack head and a well-aimed mallet blow will make the tack jump out of the wood, along with any associated upholstery. Prices range from about £15 up to £40, which seems quite a lot for something that is already blunt. Take a tip, look around boot sales and flea markets for a reasonably chunky old firmer chisel about 5/8in-3/4in wide, just take off any burr and it should do the job perfectly well.

PICTURE THIS

☞ Having just found your magazine, I need some advice. I am interested in taking up marquetry since I bought a marquetry tray at a village fete secondhand stall. It seems like a challenge and satisfying when it is completed. Can you give me any pointers or suggestions on how to go about it please? ☺

Maggs Bellman

Anthony replies: Hopefully you find the magazine interesting, it covers a wide range of interests to do with wood. We do cover more specialised subjects from time to time, including marquetry. There was a short series of articles by Amber Bailey a while ago, which can be done on nothing more

than a kitchen worktop using a limited set of tools and materials. I will send you a list of the projects and you can let me know if any are of interest. It is also very useful to do hands-on learning with other people so you might want to join a marquetry club or group. Visit the Marquetry Society website which has links to groups in various parts of the country.



Marquetry is easily done at home if using the knife method of cutting

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The Tool Marketing Company, or TOMACO, as it is known, which sells a variety of tool brands, including COLT, Sharp Edge and Narex Tools, is pleased to be sponsoring the Ask the Experts section in collaboration with GMC Publications. Each issue's Star Question

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N.B. If you do need help or advice you can email me: anthonyb@thegmcgroup.com or visit: www.woodworkersinstitute.com where there are lots of useful articles, either way the service is free!

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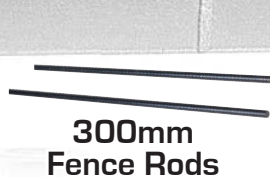
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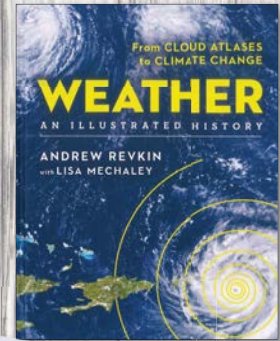
The **Editor** believes that understanding the weather forecast is the concrete way to plan his working day

Weather – An Illustrated History – from cloud atlases to climate change Andrew Revkin with Lisa Mechaley

Wherever you are in the world you will experience weather. Not the same weather of course, it can vary wildly, an untameable natural force. What this book does is explore our already substantial knowledge base of global weather, both putting it in a historical context, including the development of forecasting, and running through a wide variation of weather patterns to climate change, the current worry on everyone's mind.

It starts at the very beginning 4.567 billion BCE – Earth gets an atmosphere – then moves through a sequence of critical periods in earth's weather history, such as 66 million BCE – Dinosaurs' demise; 100,000BCE – Climate pulse propels populations; 300BCE – China shifts from mythology to meteorology. Obviously many of the significant dates covered are in the last 400-plus years as the human race has made significant discoveries and encountered events relating to weather behaviour, such as Fahrenheit standardising degrees, London's last Frost Fair, the rising curve of CO₂ and forecasting El Niño. Learn about the possible result of a nuclear winter or polar vortex or how coral reefs are heating up.

The presentation is good and very methodical, with the many topics displayed as double-page spreads with a photograph or illustration on the left page and the supporting text on the right hand, breaking it down into more bite-sized chunks and making such a vast subject easier to assimilate. Definitely a worthy tome to take seriously.



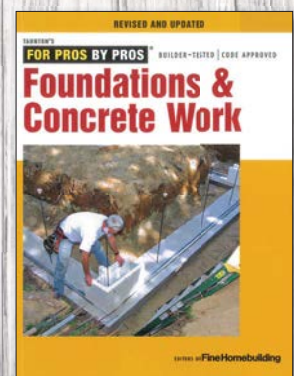
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PRICE: £17.99

Published by Sterling New York

Foundations & Concrete Work – for pros by pros Editors of FineHomebuilding

At first glance concrete doesn't have a lot to do with woodwork, but I would heartily disagree. A while ago I had to undercut a large shed with a gradually rotting base and pour concrete under the framework in place – not easy, but my childhood experience working at home with my civil engineer father stood me in good stead. This book, American in flavour and regulation, has some really interesting and useful insights for understanding the principles for building foundations, types of concrete, shuttering, laying paths, stone-faced walls, the use of steel rebar for reinforcement, also how to line rooms after concreting and much more. Moving from large-scale professional works down to smaller projects, or adapting techniques for those domestic projects such as garage or garden, are all possible to glean from this book. Understanding how to incorporate insulation and working to Passivhaus standards are also covered. You won't necessarily expect to apply all the practical advice given, but it will help inform what are invariably quite critical building works, such as keeping a basement dry, for example. A fascinatingly informative read.



ISBN: 978-1-63186-913-6

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PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Improved shoot board

Colin Sullivan makes a few additions to this workshop essential

Am I right in saying that if you think about a problem long enough, you may be able to make a small improvement to an established idea? In this case, using the plane laid on the bench with the cutter towards you – perhaps up against a straight batten – could have been the first step to making a shoot board. Here I will show how to make a shoot board that will provide you with a simple way of guiding the plane in a straight line at 90° to the work, either along the grain or across the ends.

I made my first shoot board a long time ago after seeing one in use, and soon realised what a good idea it was – a quick and accurate way to plane the end of wood for joint making, i.e. dovetails. The first stage of making well-fitting joints is to prepare the wood properly, followed by accurate marking out. This saves time in the long run and may avoid planing or paring them to fit.

THE PROBLEM

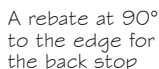
The basic shoot board is simply two pieces of wood with a stop to put the work against and a rebate for the plane, turned on its side, to run on. One hand holds the work up against the stop and presses on to the sole of the plane, while the other hand moves the plane back and forth. You need a considerable amount of practice before you get good results. It is easy to pull the plane over and damage the shoot board. The board will then need to be taken apart and made true again to get a good result. This was the problem I wanted to tackle – if only the plane could be held in such a way that it was impossible for it to plane the board as well as the work.

Portability

With no commercially made shoot boards available, or at least not in any significant numbers, it's fascinating to learn how craftsmen have set about solving the same problem throughout

the years. Without too much effort, I came across shoot boards with sloping ramps. Others have attachments for mitres and sliding components that permit truing when the inevitable happens and the crucial faces become worn. As fine as these are, none compare to the 8ft-long hydraulic behemoth of Martin Grierson. It may only be suitable for shooting veneers but a shooting board it is nonetheless. After all this reading it became apparent, like so many things in the workshop, that there might not be a right or wrong way to construct a good shoot board, or even one that was consistently better than all the rest.

There's no doubt that a well-constructed jig will last a lot longer than something concocted in a hurry, but quite often the best solution is the quickest, especially if you make a habit of working away from your shop bench – the idea that led me to something that could be a useful jig to tuck under your arm as you head for the door. ➤



Woodworking Crafts issue 42

THE SOLUTION

My answer was to make a sort of sledge to fit around the plane that runs parallel with the fence, keeping it from cutting into the board itself. The side of a plane is only 3-4mm thick but enough for a plywood cut-out to hold it steady. This is then backed by another piece of 4mm ply that runs in two grooves, which ensures the plane is held exactly where it should be and unable to cut into the board itself.

Choosing your plane

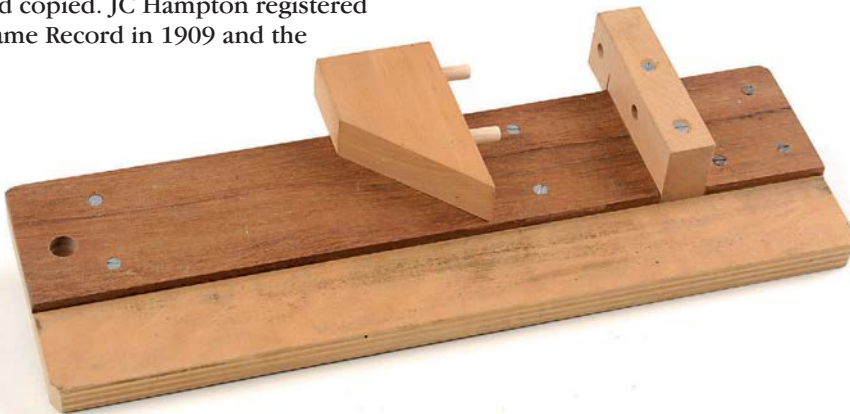
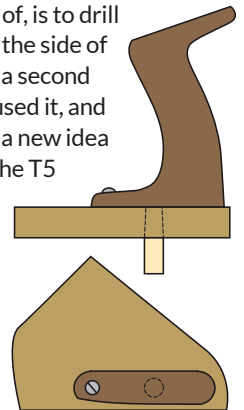
A reasonably heavy bench plane is probably sufficient for most work on a shoot board unless you intend to do bigger things, then you will need to use a bigger plane. I chose a Record No.5½ 'stay set' plane that weighs in at a little under 3kg. It is 380mm long with a 57mm-wide blade. The stay set refers to the back iron, which is in two pieces for easy sharpening of the blade. It is also thicker than a normal back iron, measuring 3mm. This model with a rosewood (*Dalbergia retusa*) handle was made in the 1930s and is equal in quality to the Stanley plane Record copied. JC Hampton registered the name Record in 1909 and the



A detachable handle can be used like a pushstick to achieve a good amount of momentum

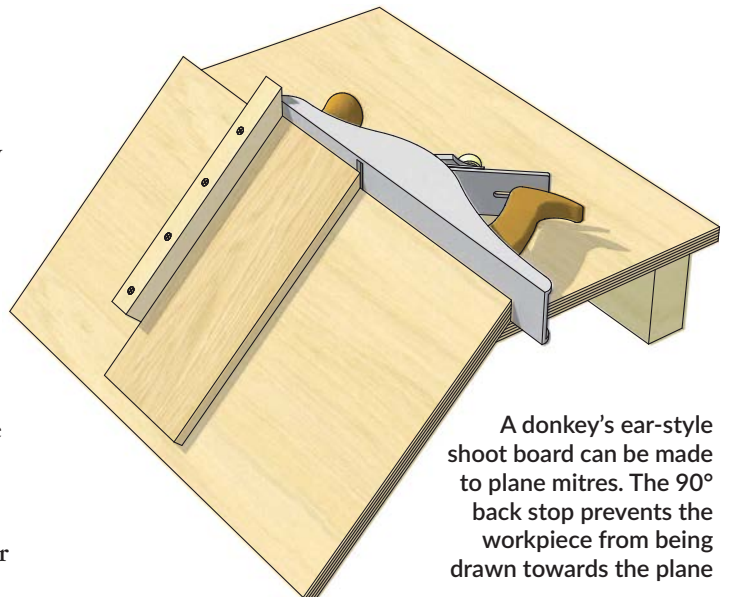
foundry made vices and heavy cast-iron items. They started making planes about 1932 after acquiring the Preston Tool Company of Birmingham. The Stanley patents had expired by then so direct copies of the Bailey designs were made. It's amazing how blatant Record and Marples were in making exact replicas, but it also says that Bailey got it just right and the same planes are still being made today.

You'll see from the photos that the No.5½ seems to have sprouted a second rear handle. It is, in fact, not fixed to the plane in any permanent way and acts a bit like a pushstick. The bottom section is shaped to nestle in tightly behind the frog. The dowel prevents the handle from tipping. Spare handles are easy to come by and won't set you back too much if you keep a look out for them at car boot sales or similar venues. An alternative, and one I know Derek Jones, editor of *Furniture & Cabinetmaking*, is fond of is fond of, is to drill and tap a hole in the side of the plane and fit a second front knob. I've used it, and although it's not a new idea – Record made the T5 Technical Jack with a second knob – it is further forward and allows you to put pressure close to the cutting edge.



MAKING YOUR SHOOT BOARD

To make a shooting board of your own, select a good, solid 18mm ply offcut. Alternatively, you can use birch (*Betula pendula*), mahogany (*Khaya ivorensis*), beech (*Fagus spp.*) or similar, as long as it's flat and true. The construction is very simple and clearly shown on the drawing. Ensure to take care with the fitting of the sliding section and make one of the rebated runners adjustable for any wear that is likely to occur. Lay the plane on 4mm ply and draw round it to make the top section of the sliding piece. Cut a shallow housing to take the stop at a right angle. The stop is bolted on through a slot for adjustment and it can easily be removed for a trim up if it is worn. A 45° block is held on two loose dowels for planing mitres. If you take the time to make a shoot board along these lines then I suggest you will not be disappointed – it really is an improvement to this type of jig. Right is an illustration of a 'donkey's ear'-type board for planing longer mitres. The sizes of any of these shoot boards is entirely up to you, for whatever kind of work you require it to undertake.



A donkey's ear-style shoot board can be made to plane mitres. The 90° back stop prevents the workpiece from being drawn towards the plane

A race to the finish!

The wheels definitely didn't come off this project created by **Michael Essam**

In an age of computer games, the fun of push-along play with toys is often forgotten. The simple pleasure that can be shared with friends, racing cars across a flat floor to see who wins, can't be beaten. If you've ever been a scout, then you will inevitably have taken part in a 'pinewood derby' following a 'crash and bash' session furiously putting racing cars together for competition. These models would be perfect for that kind of thrilling, high-speed racing activity. They are enjoyable and fairly simple to make and I think the use of the moulding produces a more satisfactory shape. Hope you like them.

Inset A – These cars and the next two photos are left unpainted to show construction.

The car at the top of the picture uses a square section centrepiece with a large 'half' round moulding for the bonnet and a smaller section of the same for driver's head fairing. The sides are ogee moulding. I attached the wheels with round-head screws as an alternative to a solid axle.

The lower car is made from two pieces of staff bead and two pieces of half round of different sizes.

Inset B – This is the only hardtop in this set (no driver's head required) and uses four pieces of staff bead. It is a simple design and construction but it does show the advantage of using the curved shapes you get using mouldings.

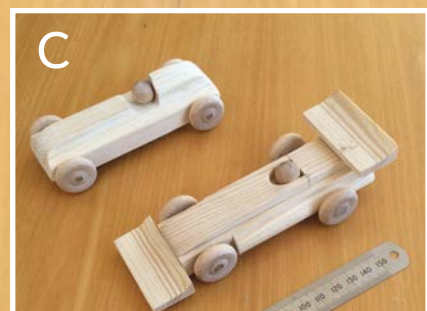
This photo shows the scale that I am working to. The car can be any

size, depending on moulding pieces available, but it is best to have some idea of the size of the wheels to help set the length of the car.

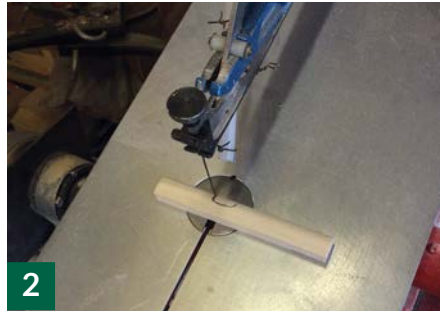
Inset C – The top car in this picture uses two pieces of strip wood glued in a T-shape. The sides are then filled in using scotia moulding to give a scalloped effect. The head fairing is cut-down scotia.

The car below uses two pieces of staff bead glued together for the 'chassis' and a strip wood top. The wings are cut from the top of some shiplap cladding.

The cars could be made in a larger size by using bigger section moulding. ➤



OPEN-TOPPED CAR



1 This shows the wheel size and the three pieces of moulding required for the body of the car. Note that all three pieces have been made slightly less wide lengthways, but this is not essential. The top part of the body, to the right, has been made smooth. Once again this is not essential. I think it looks a bit better but asymmetric design was quite common in racing cars of a few years ago.

2 The driver's compartment being cut using the fretsaw, if a driver's head is to be used it is as well to know the size of it as it becomes more difficult to cut the compartment with a fretsaw when this section is glued to the base. A coping saw would be OK.

3 The axle holes should be drilled before the top section is attached. Once again the size and type of axle to be used should really be known before this is done. I tend to drill the holes a bit oversize, at least 1mm or 2mm larger than the axle. With a fairly loose, wobbly fit I find you get a bit of 'suspension' effect and it can compensate for minor inaccuracies

that will occur if you are working with a group. There is a photo at the end of this sequence which says a bit more about attaching wheels and axle types.

4 This shows the three components of the body of the car, including the driver. The head is a bought item and has a peg at the base, but they are available plain and will do just as well. Flat discs of ply cut in a circle can look OK, particularly if people want to draw features on them.

5 The top glued and clamped to the base.

6 This shows measuring and cutting the axle. A reasonably accurate measurement for the length of the axle is required. (a 'wobbly' axle is a bit beneficial but one that is either too long or too short is not much good). I tend to use callipers but it can be done with a ruler or a bit of adding up.

7 The cut ends of the axle should be smoothed and chamfered slightly. A push-fit is the best solution in many

ways for the axle into the wheel, but there is a danger the wheel can split. If the hole in the wheel is the same size as the axle and the end of the axle is reduced slightly with emery cloth it should be OK. Otherwise the hole can be larger and adhesive such as araldite could be used. 'Plastic' wheels are sold for craftwork and are reasonably priced. They don't look so good but are colourful and roll well. There are other homemade alternatives as well, such as plywood.

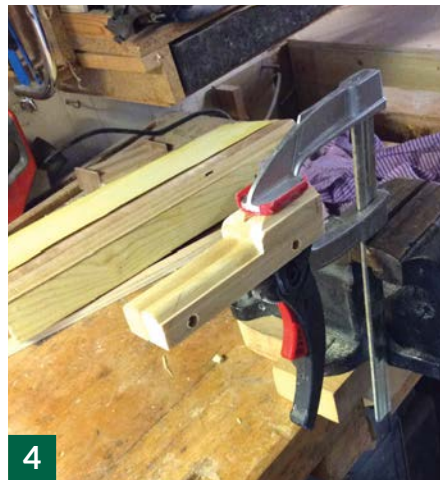
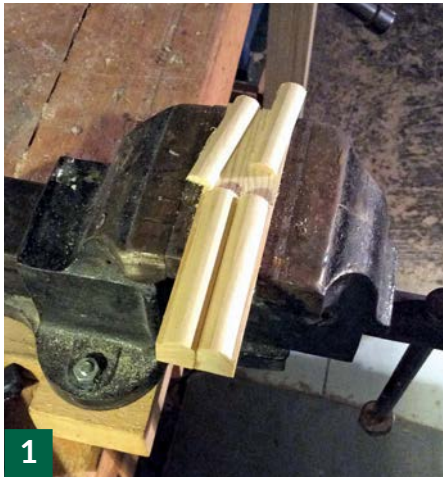
8 Shape the nose and tail of the car either with a saw and rough then smooth abrasive, or you could use a sanding disc/belt. If this option is chosen a simple jig would be useful as the car shape has become more difficult to hold on its side.

9 The completed car, which looks fine as it is but some people would choose to varnish or paint the cars and this is best done before assembly. There are also lots of stickers and decals available and the numbers printed out from the computer look good if cut out and stuck on.

I also mentioned about alternative drivers' heads and this shows a 'flat' driver cut from 6mm ply. It is a larger car but it is just an example of how alternatives can work quite well.



CLOSED-TOP CAR



Handy tip

The car at the top of Inset A has its wheels secured with round-head screws, which is a good alternative. I always find with this method that it is best to fit three wheels, set the car down on these and then add the fourth – a bit like a milking stool. I would also add that I tend to use steel axles but aluminium rod is easily available and dowelling might be easier in some situations.

1 The pieces of staff bead 120mm in length are glued together and two more pieces 50mm in length are also cut and glued together. So the rounded section of the beading if removed is 50mm shorter than the length of the car.

2 Once the two 120mm pieces have dried, drill the axle holes. I put the front ones quite near the front of the car, the rear wheels are about 25mm in from the back.

3 Once the 50mm pieces are glued in place (the driver and passenger compartment), shape the front of the piece like a windscreen. Don't do the back at this stage.

4 Glue and clamp the sanded compartment to the main body of the car.

5 Shape the front and rear of the car. Shape the underside as well as the top and try not to lose the 'double bubble' roof of the passenger/driver compartment.

6 The completed coupe, ready for Le Mans. ■

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PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Restoring a workshop chest of drawers

Helping to keep memories alive through sympathetic restoration of an old, well-used piece of furniture. By **Anthony Bailey**

My father-in-law passed away in January 2018. It has been a difficult time for all his children, grandchildren and great-grandchildren. Living in the same ever-expanding cottage and garden plot for more than 50 years left many memories and possessions. One of these, a heavily paint-splashed, long set of workshop drawers, looked fit for the bonfire, but absolutely everyone he had ever known, especially his family, had entered the hallowed environs of his creatively busy workshop, often to seek practical assistance with 'this-or-

that' project they were working on. My wife wanted to save them as just one reminder of his passing, but it looked most unprepossessing, so much so that I hadn't intended writing them up as a magazine article but they have turned out rather well...

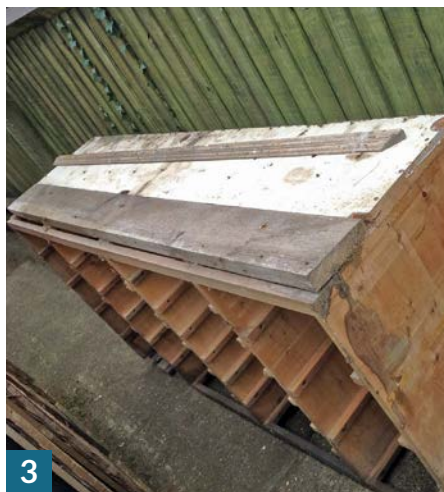
1 The drawers were dusty inside and paint-splashed on the outside, the brown finish was dull and unprepossessing, and there were 21 of them to be washed clean with water and scrubbing brush and left to dry in the sun. ➤



1



2 Interesting detail in the cast-iron drawer pulls and the remains of shop labels still evident. These and other sets of drawers from the workshop had once been installed in the village general store. It was more like a mini-department store, having various counters for food, ironmongery and haberdashery and a central cashier with special zip wires to send money back and forth.



3 This is the grim-looking carcass, rough boards nailed to the top and which had a sheet of hardboard over it as the work surface in the workshop. It looked flimsy and a mess.

4 The other end was even worse – see Step 15 to see how it looks now, still with a split though.

5 After a good wash-down, which avoided inhaling dust, it was a case of applying paint stripper with grade 2 wire wool to every drawer front to get back to bare wood, then neutralising with wax cleaner and more wire wool to scrub off any remaining goo.

6 The carcass received the same treatment with the addition of random orbital sanding on the ends, especially the one with paint all over it. The front rail edges were sanded to get rid of ragged wood fibres. At one end at the back a bottom rail was gone so a new one was glued and screwed in place.

7 I started fitting new drawer stops but this proved unnecessary as the backless carcass sat right against the wall causing the drawers to all stop in the correct position – lazy, yes.

8 All the drawer runners were worn, but not too badly. I figured a good waxing would get them moving nicely. However, one drawer was missing a runner so I cut and glued a new section in place. Note the original precise dovetail construction.





9

9 There were 21 drawers and 22 drawer pulls as one drawer was missing. So I had to make one up but time was pressing. I didn't revisit my joint cutting technique and instead knocked up a ply drawer with the sides rebated into the reclaimed pine front. A slight depth adjustment was needed as the back upper rail stopped the drawer from going all the way in.

10 The rebate used glue and panel pins to hold it all together. The pine was a fair match after using an antique pine hardening wax.

11 The rear of the drawer with ply bottom – very basic construction but it worked. The original drawers were also quite crude in their own way, apart from the dovetails.

12 Many of the drawer compartments were damaged and thus made storage awkward, so they were unceremoniously knocked



10



11

out. Many had hand-written markings to denote the contents, as used in the general store. Some drawer back edges still have their history scribed on them ('Twist' – some type of thread).

13 Two drawer pulls had got damaged in the past. One had a bright screw holding it on which I rubbed with abrasive paper and then patinated, so it blended in better. ➤



12



13

Materials



Strip-down and restoration is often a messy business – glue, stripper, wax, cleaner, wax, wire wool, patinating fluid and suitable hand protection are all required. Care in using paint stripper in particular is needed and plenty of clean water must be available to irrigate splashes to skin, eyes etc.



Coarse sanding-off of the carcass and sanding the oak top was done using a random orbital sander. Much quicker than a standard orbital sander and better at removing its own scratch marks. Grey lubricating paper is perfect for flattening between varnish coats and very fine grade foam-cushioned abrasives sheets follow contours sympathetically.

14 Newly repurposed and labelled to make it easy to find what you want. I bought a set of label holders that were in character with the drawers.

15 The ends weren't heavily repaired or coloured in, but left in an 'honest' condition, simply waxed like everything else.

16 The top was a wide oak board retrieved from my father-in-law's workshop, with a separate oak section rounded over on the router table, then mitred and glued to the board edge with Titebond adhesive.

17 The chest of drawers has fitted into the corridor well and holds lots of things, all now very organised. The top was varnished, rubbing down between coats, then fine 0000 wire



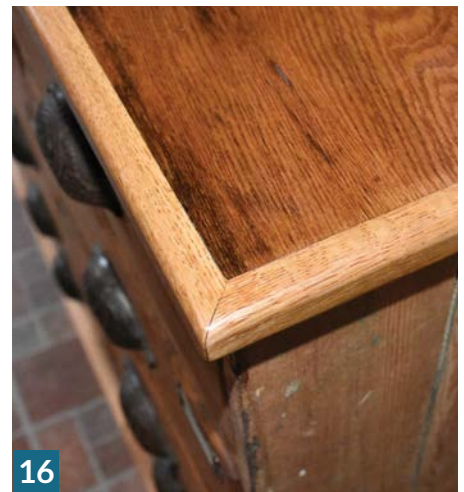
14

wool to give a sheen topped off with a hardening wax rubbed off with muttoncloth.

18 My wife said her Dad would have been impressed, I think she actually said 'humbled', to see how I had managed to make it look so good, but I felt humbled being able to turn it into a genuine heirloom, a reminder of the mark that he left on the world... ■



15



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“We design and build woodturning lathes that become an extension of the turner’s creative spirit.”

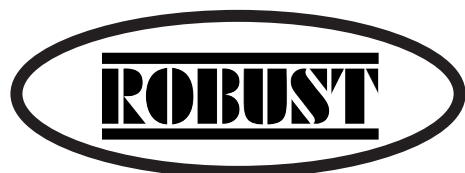
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Quick-make Leather tool roll

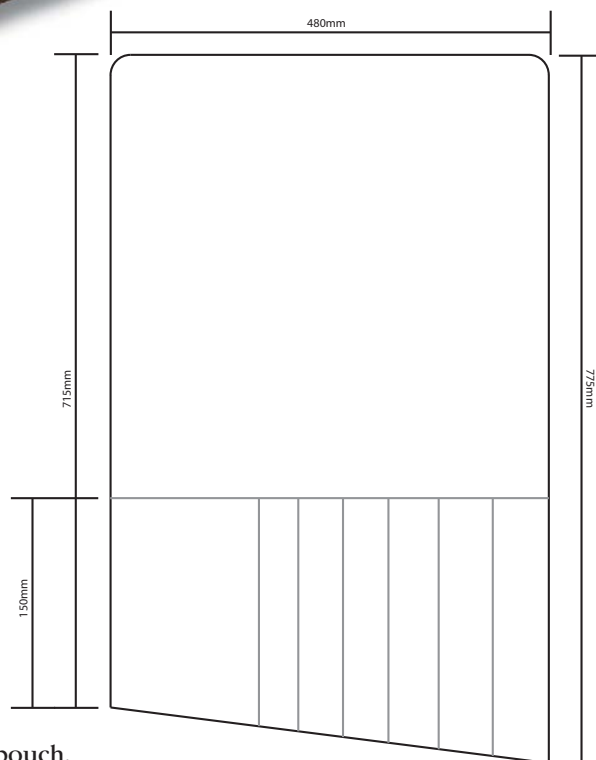
Amber Bailey picks up a needle and thread, all for the cause of tool protection

Any good craftsman will know tools require a lot of care and maintenance – hundreds of hours can be spent constantly polishing blades so they are cut-throat sharp. But there is no point putting so much effort into the efficiency of tools when they are in action if there aren't the measures in place to ensure they are protected when resting on the workbench.

Tool rolls are readily available for purchase, but once in a while it can do you good to stretch your creative muscles and try your hand at a new skill. Sewing may be completely different from woodwork but stitching together a tool roll isn't quite the daunting task that it may seem, suitable even for novice stitchers.

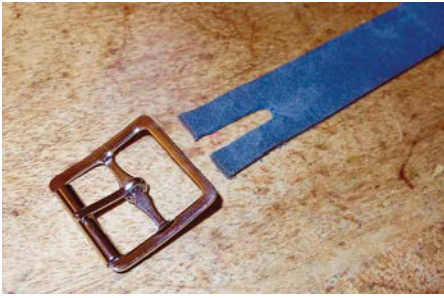
1 Begin by cutting the leather out to the dimensions of the diagram. You may choose to alter this depending on the purpose of the tool roll.

Fold over a section of the fabric to create one large pocket and stitch along the edges to seal it together securely. Fold the fabric out the correct way so that your stitching is now neatly hidden inside.



2 On the front of the large pouch, mark up a series of dividing lines with a ruler and white pencil or chalk. Using these lines as a guide, stitch up the length of the pouch to create a series of narrow pockets.





3 To create the strap, cut a narrow strip of leather the width of the buckle and slightly longer than the length of the tool roll itself. Attach the buckle at one end by cutting out a central gap no more than several centimetres long to fit around the buckle pin. From behind stitch the two pieces of leather to the central buckle bar and neatly trim away any excess.

On the other end of the strap, round off the leather and mark up the positions for the buckle holes between 2-3cm apart. Hole-punch these marks and finish off with eyelets of the same size. The metal ring of an eyelet is an effective way to ensure the leather does not fray and withstands long-term use.

Stitch the centre of the strap to the back of the tool roll to create a means of keeping the tool roll closed when not in use.

Top tips

- The leather can be too thick to pierce even with a leather needle. It can help to pre-pierce holes to feed the thread through.
- When working with any type of thick material or fabric there is always a danger that the back of the needle will penetrate a finger or thumb. Use a thimble or leather glove for protection.
- Personalise your tool roll with name labels to make a great gift or to simply ensure your tools don't mysteriously go missing. ■



EQUIPMENT USED

Tools

- Leather needles
- Waxed or thick thread
- Scissors
- White pencil or chalk
- Ruler
- A buckle
- Eyelets and hole punch



Leather needles have a robust and sharp nib to help pierce the tough fabric

Materials

- Leather hide



A leather hide will provide more than enough material for a tool roll, but a cheaper substitute will work just as well. Make sure the fabric is thick enough that sharp tool blades will not slice it open when pulled in and out.

Suppliers

All materials and equipment should be available from any well-stocked haberdashery.

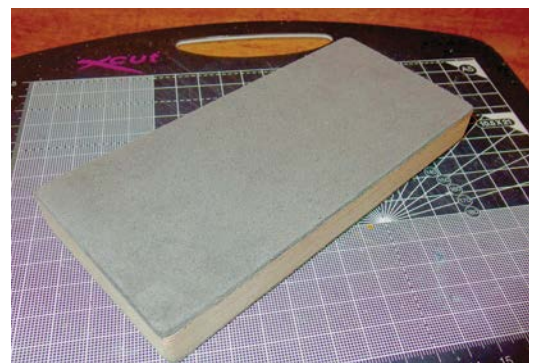
Leather polishing strop

To make use of any scrap leather, a polishing strop is an extremely quick project to accompany your tool roll.

Cut out a rectangle of wood to the dimensions of your choice and round off the corners to avoid catching your hand during polishing.

Apply contact adhesive to an oversized piece of leather and to the face of your wooden block. Leave both until the surfaces feel tacky then press together. Cut away any excess and repeat the process on the other side of the wood so that your strop becomes double-sided.

If your leather has a smooth and a rough side, ensure that you are gluing down the smooth side. A rough surface is needed to help dislodge any burrs created on your tools during the polishing process.



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PER ISSUE

A variety of shelf supports all with 5mm pins

Tricks of the trade...

Shelf supports

Fitting shelves is made a lot easier if you use a jig to get the support holes level

The easiest mistake is to mark out shelf support holes by using a try square and ruler and drilling the holes freehand. Inevitably, even using a bradpoint drill the holes will be fractionally off course. This results in the shelf or shelves rocking when touched or anything is placed on them – possibly something valuable and fragile. The only practical solution is to create a jig of some sort. The router is the perfect solution as it can be controlled very accurately by using a guide bush and cutter with a jig. Shelf supports are a specific diameter at the end that pushes into the wood, usually 5 or 6mm. If used with metal sockets these will be larger,

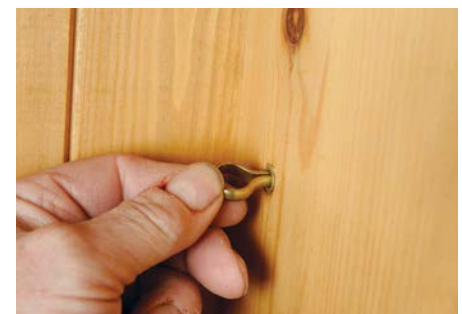
7mm for a 6mm support. So you need to buy a cutter of the correct size rather than using a standard 6.35mm dia. bit which will give a sloppy fit. Next, select a guide bush that will be easy to match to either a router cutter or a drill bit of the same size – 16mm is a good one. By using a fence with a router and fence or a sub table and fence on the pillar drill, you can mark out and drill a series of accurately spaced holes in the carcass. By swapping the finished jig from one side of a carcass inside face, you can achieve two sets of perfectly aligned holes that can then be repeated on the other carcass internal face, giving you matched holes all round and no wobbly shelves. ■



Make an accurate jig with holes to match your guidebush



Then router drill each support hole, like this cutter storage board



Insert a socket where supplied, then the support, in this case a banjo clip



The result will be level, wobble-free shelves ready for anything

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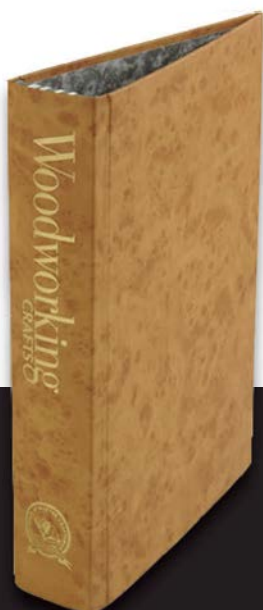
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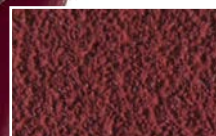
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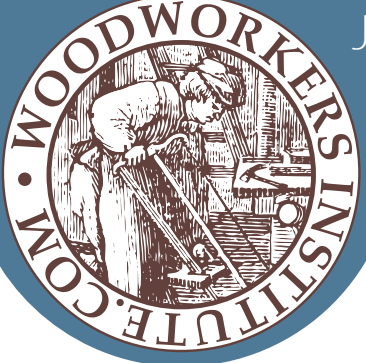
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Focus on...

Treehouses

Kids love 'em, grown-ups wanting an alternative lifestyle build 'em and tribes in various parts of the world live in them – treehouses

There is something special, thrilling even, about a really well thought out hideaway in the trees. Many people build them but occasionally they can fall foul of planning authorities because there aren't specific rules governing their design, construction and placement, so they are therefore open to interpretation.

Treehouses history

Building tree platforms or nests as a shelter from dangers on the ground is a habit of all the great apes, and the idea may have been inherited by the human race. Evidence of prehistoric man-made tree houses has never been found by paleoanthropologists, but, due to the passage of time and the fact that wood degrades, any remains of wooden treehouses would not still exist. Early evidence of cave accommodation, terrestrial man-made rock shelters, and bonfires is possible to find, but is scarce from earlier than 40,000 years ago. So this has led to a hypothesis that archaic humans may have lived in trees until about 40,000 years ago.

Indigenous people

Even today treehouses are built by some indigenous people in order to escape the dangers and adversity on the ground. In some parts of the tropics, houses are either fastened to trees or elevated on stilts to keep the living quarters above the ground to protect occupants and stored food from scavenging animals. In Papua New Guinea, the Korowai tribe in the south east of Irian Jaya, live in treehouses – some nearly 40ms high – as protection against a tribe of neighbouring headhunters, called the Citak.

Above: A real aerial hideaway

Right: More down to earth among the trees



Treehouses today

Due to an increase in popularity there has been a rise in demand for businesses devoted to all aspects of treehouse building and design work on a very sophisticated scale. There are more than 30 businesses in Europe and the US specialising in the construction of treehouses of various degrees of permanence and sophistication, from children's play structures to fully functioning domestic homes. Among the more recent developments have been treehouse hotels which offer stunning views in exotic location with a growing number of booking websites offering accommodation in treehouses.

Treehouse protests

The treehouse has been central to various environmental protest communities around the world using a method known as 'tree sitting'. It is often used in a fight against proposed road building or forestry operations in ancient forests. Treehouses are used as a method of defence from which it is difficult and costly to safely evict protesters and begin work.

Building regulations

Many areas of the world have no specific planning laws for treehouses, so the legal issues can be confusing to both the builder and the local planning departments. Treehouses can be exempt, partially regulated or fully regulated – depending on the location. If you are considering one, you need to check the rules that may apply in your area. ■

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Jamie Smith. Test Report. Good Woodworking. February 2018.

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