Woodworking CRAFTS

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Make a sycamore & oak chest of drawers

FEATURE
The conservation of The Mary Rose

TECHNIQUES
Joint marking
Hot foiling on veneer
Make a cross-cut sled
Banding & stringing techniques

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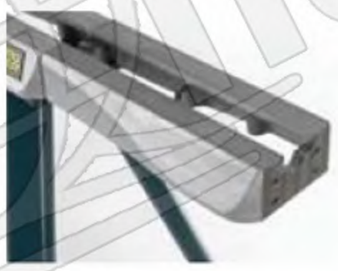
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Woodturning 317

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Online Review

"**The new Herald - Sets a new standard**
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Online Review



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Woodwork on the web

To find more great projects, tests and techniques like these, visit our fantastic website at: www.woodworkersinstitute.com

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Hello everyone and welcome to the March issue of Woodworking Crafts



'As mad as a March hare'

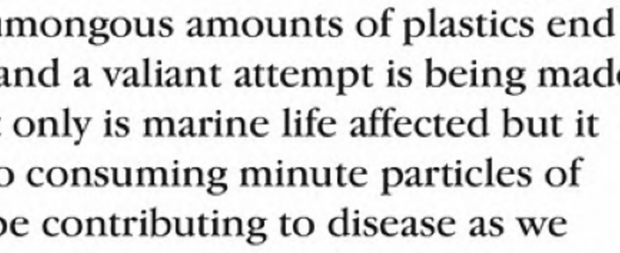
This expression is based on observations of the hare's behaviour during the breeding season, which are recorded as far back as the early 16th century, observing it generally jumping and bounding in an excitable and unpredictable way. You might say that about me as Editor, because as the new year shuffles off its coat of winter weather, the days are getting longer and nature makes yawning, stretching attempts to revive itself, then so do I. There is so much to do and to be done. Indeed, as I'm writing this I can't honestly predict what challenges I or anyone else will face this year. But, what I do know is – that I will have some fun doing it!

Protect or survive

On a more sombre note, I recently unwrapped some new woodworking rasps. The thin, rather brittle shrink-wrap kept disintegrating; it took what seemed like ages to pick it all off the set of tools. Outside of this was also a layer of clingfilm, used to ensure the recipient's safety rather than possible damage to the tools themselves. Plastics have had a thoroughly bad press and I wondered whether this wrapping would end up in an industrial waste-to-energy incinerator or landfill? Humongous amounts of plastics end up in the world's oceans and a valiant attempt is being made to capture some of it. Not only is marine life affected but it seems we humans are also consuming minute particles of plastic. This could easily be contributing to disease as we simply don't know what the effects of ingesting this material might be.

I'm a photographer as well as a woodworker. If I buy yet another expensive DSLR camera it does have a very thin plastic wrap, but the bulk of the packaging is papier-mâché eggbox construction and yet the camera is worth thousands. Indeed the camera itself has a moulded polycarbonate shell wrapped around a cast magnesium inner core. The point is that it is designed to last; it isn't a throwaway item and neither is most of its packaging.

Expensive good quality tools are more likely to come wrapped in protective paper and cardboard. Manufacturers really need to reduce the amount of disposable plastic that comes with their products with some urgency. Let's hope the government's latest initiative goes some way to dealing with our self-created mess.



Anthony Bailey, Editor
Email: anthonyb@thegmcgroup.com

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Modern but also very retro with the splayed leg base



Neat and discreet with flat frame mouldings around each drawer front

Design INSPIRATION

Chests of drawers can look like identikit boxes, but don't all have to look the same. The choice of material, finish, hardware and drawer layout can set your own design apart





Mission style, simple and square with perfect matching hardware



Above: Georgian style with loop handles and bracket feet for a traditional look

Left: An unusual Empire look, light in finish with graining and a 'rubbed back' effect



Creating this arrangement is a bit harder than you might think, but is visually striking



Clean lined traditional appearance with cock-beaded drawers and indent frieze

PHOTOGRAPHS COURTESY OF SHUTTERSTOCK

HOBBY TIME

Oak & sycamore chest of drawers

Kevin Ley creates oak and sycamore furniture projects



PHOTOGRAPHS BY KEVIN LEY UNLESS OTHERWISE STATED

The client's brief was for two similar chests of drawers: one 1.2m wide the other 900mm wide.

We arranged a meeting at my workshop to finalise the designs and choose the type of timber and the finish. They particularly liked a seven-drawer chest in sycamore I had already made with fumed oak drawer fronts, and decided to base the design on that combination of timbers. Various other design details were also decided, including cedar of Lebanon drawer casings for the lovely scent and insect repellent properties. I was asked to design rectangular contrasting handles for the drawers.

The designs were kept light and simple, with the carcasses in sycamore and just the drawer fronts of the chests in fumed oak.

A curved inset plinth was applied to all the pieces, the curve of the plinth reflected in the underside edges of the rectangular handles.

The tops of all the pieces were chamfered on the underside of the overhanging edges, again to lighten the effect.

An acrylic satin finish was chosen to keep the creamy colour of the sycamore and reduce yellowing.

Timber choice and selection

Having had problems finding decent 25mm boards of sycamore without penetrating stick marks, I eventually found some 32mm boards with no staining, from which I could deep saw what I needed.

The chest that the clients had seen in my cottage had quarter-sawn fumed English oak drawer fronts. They had particularly liked the 'flash' of the medullary rays and the figure of the oak. I managed to find top-quality English oak at Will Bullough's yard and selected some good middle boards out of a stack of through and through-cut boards.

Very little oak is truly quarter sawn these days, but the middle boards in a through and through-cut stack are, effectively, 'quarter sawn' as the grain runs vertically through the thickness of the board.

There is, of course, a fee for selecting the best boards from a stack.



BUILT.ME



Marking out drawer casings from a large board of cedar of Lebanon



Deep sawing drawer casings

CUPPING



PHOTOGRAPH BY JOHN BULLAR

Deep sawing kiln-dried boards sometimes causes 'cupping' or curving across the width of the board. It is caused by the outside faces of kiln-dried boards starting to absorb moisture as soon as they come out of the kiln, swelling and putting the outside face in tension. While both outside faces are in tension together, the board does not move. However, when it is deep sawn through the thickness, the drier, un-tensioned centre is exposed and the tension on the outside face released, expanding (swelling) that face, thus cupping the board.

As I knew I was deep sawing both the sycamore and the cedar, I asked for the timber to be put back in the kiln for a few days to dry the outside faces. Fortunately they had room with another batch that was going through and were able to accommodate me. It worked and I had very small amounts of cupping in the sycamore, and none in the cedar.

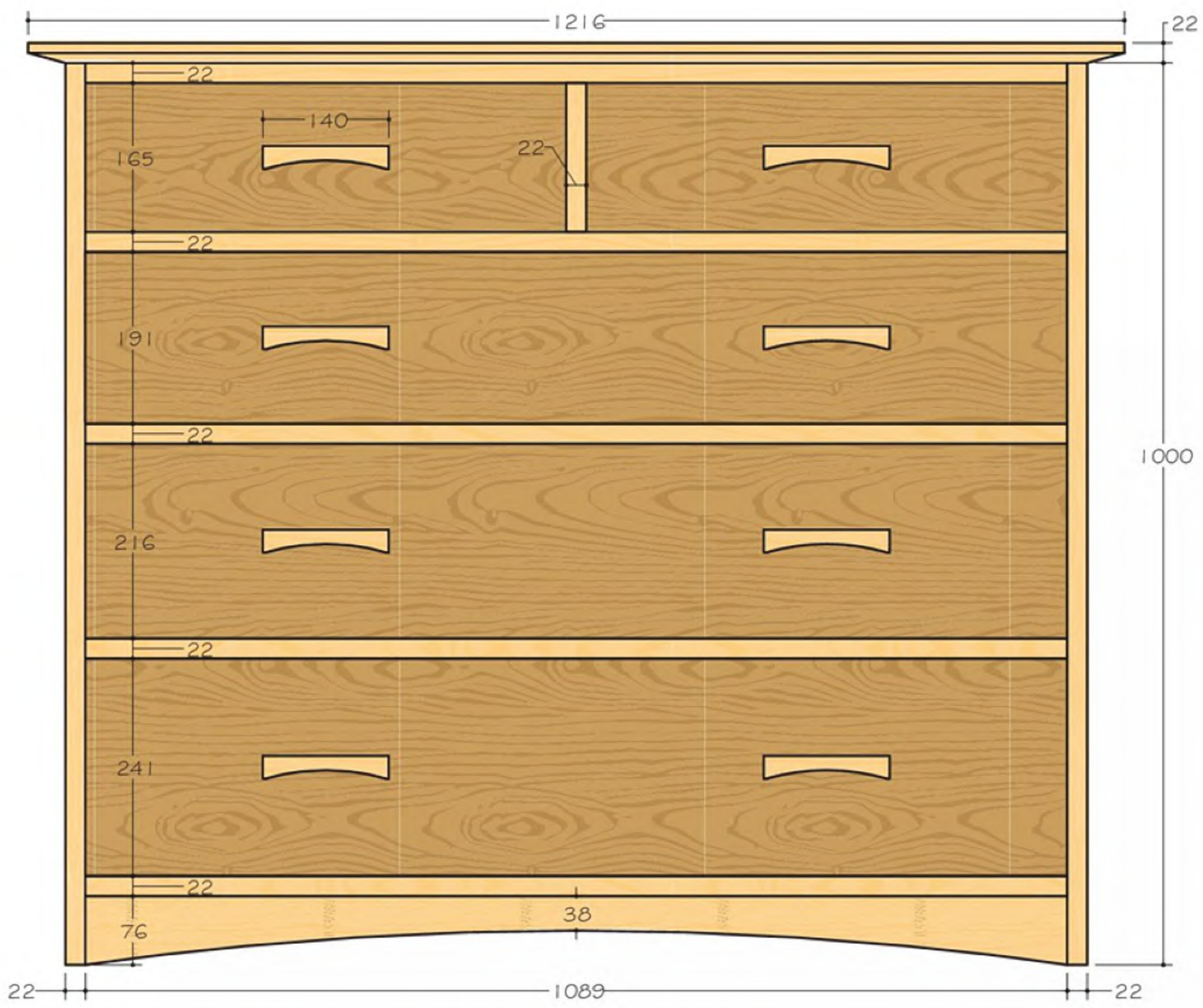
1 The cedar of Lebanon also came from Will's yard – lovely wide boards with few of the characteristic large knots and a generous 25mm-plus thickness. All the components for the whole suite were cut out at the same time, working down from the largest to the smallest pieces. The sycamore was deep sawn to 25mm thickness and the 12mm waste slabs put in the log store for future use.

2 The drawer casings would be a finished thickness of 15mm, so pieces were marked and cut from the large cedar of Lebanon boards and then deep sawn in two to give 12mm thickness pieces that could be thicknessed to size.

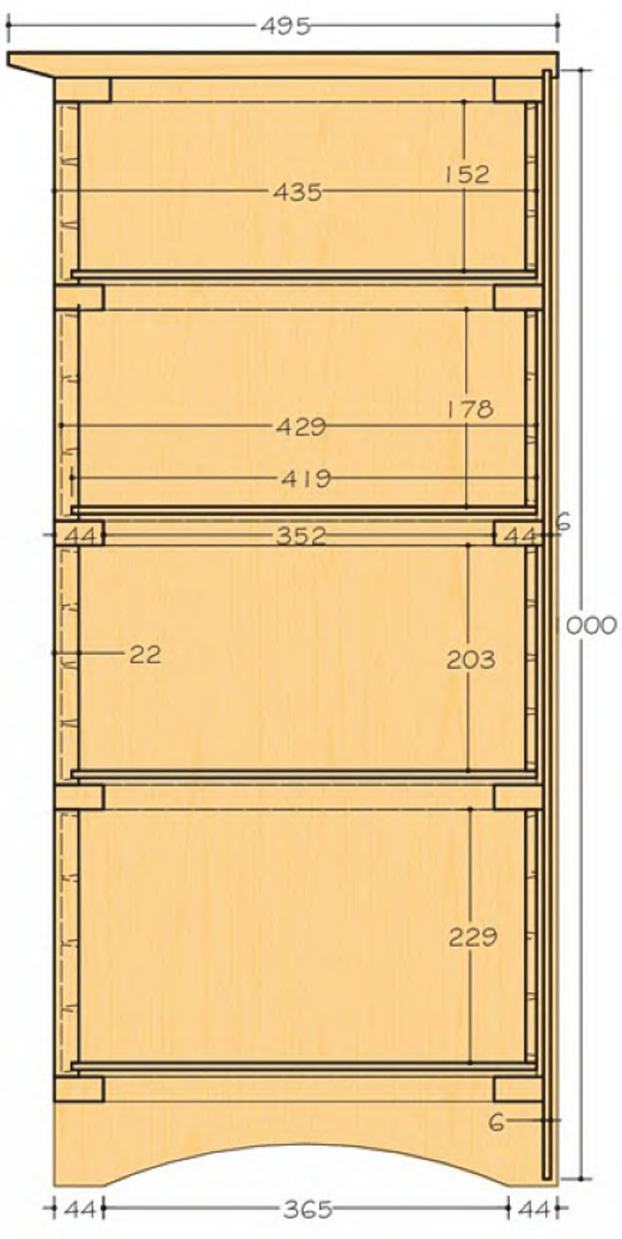
3 After cutting all the components to size, I sticked and stacked them with a dehumidifier to take the moisture content even lower. ➤



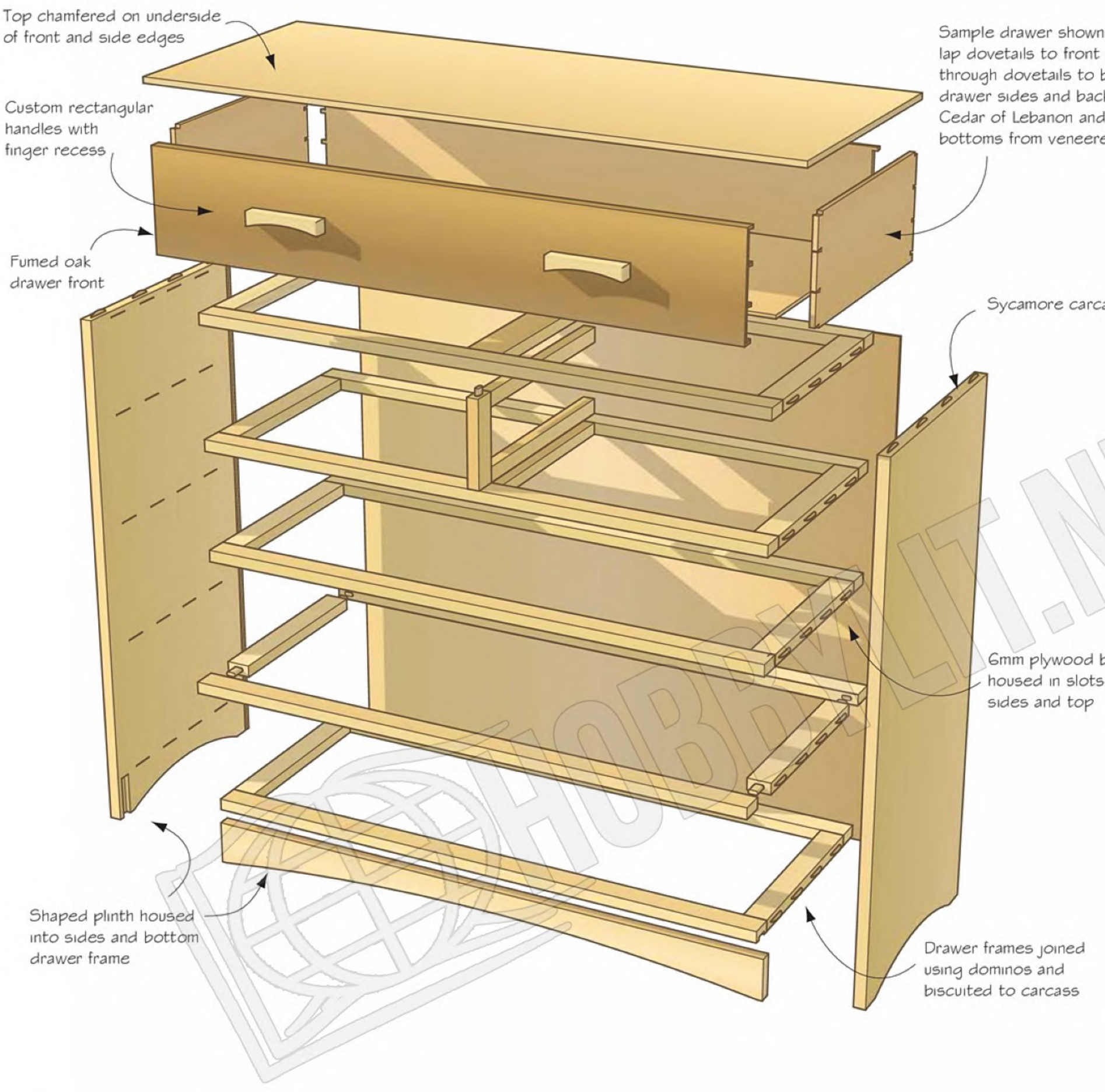
Oversize components sticked and stacked near dehumidifier



FRONT ELEVATION



SECTION



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4

Biscuit jointing the frames



5

Slotting frame components for dominos



6

Frame in clamps

Construction

The sides and top were made up from narrower pieces, butt jointed together, glued and clamped. They were trimmed to size, and the housings cut in the inside rear faces to take the ply back.

Biscuit slots and pockets were cut in the top edges of the sides for the joint to the top, and biscuit slots cut for the drawer frames. A curve was cut one end to form the plinth and a housing cut on the inside front face for the front plinth.

4 Biscuit slots were cut in the top for the joint to the sides, and a housing cut on the rear inside face for the ply back. The underside of the overhang was chamfered with an Erbauer power planer – this is a relatively cheap power tool but I find it very safe and effective for this sort of waste removal. All these components were power sanded to a finish.

Frames

5-6 The frame pieces were cut to size and jointed with the domino jointer, glued, clamped, checked for square, and left to set. The domino joints at the rear of the frames were left dry and a 3mm expansion gap left to allow for seasonal movement in the sides.



7

Cutting pocket screw holes in the frames

7 Biscuit slots and screw pockets were cut for the joint to the sides.



8

Cutting plinth curve

Front plinth and back

8 A piece of sycamore was cut to shape and finished for the front plinth, and some 6mm sycamore-faced ply cut for the back. ➤



9 Sides, frames, and plinth clamped up



10 Top clamped up, and back pinned and glued in

Assembly

9 The frames, sides, and plinth were given a hand sanding on the inside faces, and the frames and sides dry-fitted to check. Glue was applied to the slots and biscuits, and the carcass assembled.

10-11 Clamps were applied and all was checked for square, adjusted where necessary, and the pocket screws driven home. The back housings, biscuit slots, and biscuits in the top and sides were then glued up, and the top tapped into place. Glue was applied to the edge of the back rails, the back was fitted, checked for square and the back pinned. After the glue had dried, the front rails were sanded flush.

Drawers

The fronts were sawn slightly over height and length, and offered up to the apertures. They were then planed to height, checking for fit at each end, the back edge slightly bevelled to fit part-way into the opening.

One end was then cut square on the radial arm saw and adjustments for a similar fit made with a block plane.

The length was then marked on the other end with a scalpel, cut 1.5mm on the waste side, and again trimmed with a block plane to fit.

The drawer front was used as a template to mark the exact length of the back. The height was measured from the base to 6mm below the side height.

The sides were cut to length, leaving 6mm clearance from the back of the cabinet. The height was sawn oversize and planed to a running fit.

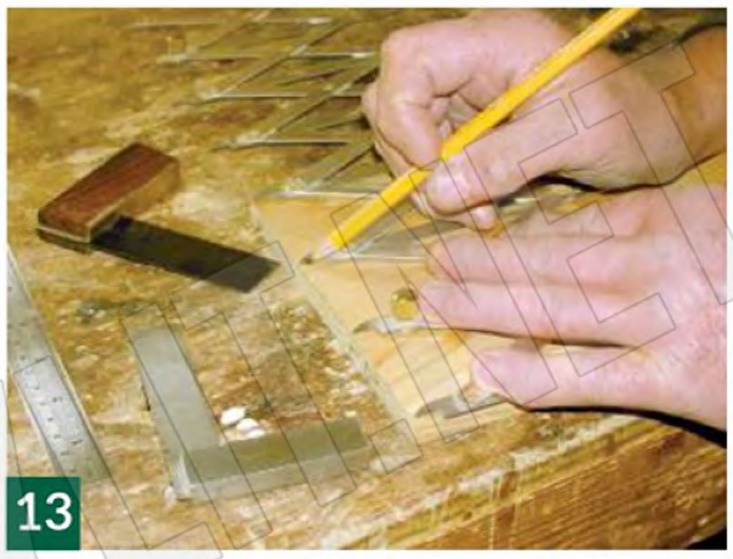
The bases were cut from cedar-faced 6mm MDF let into housings in the front and sides, and glued and pinned to the back. Sheet material is lighter and thinner than a solid base.



11 Sanding the front of the frames and drawer dividers flush



12 Marking pin depth



13 Marking dovetails with a Trend Point-2-Point jig

Marking the drawer joints: Depth

12 One marking gauge was set to the exact thickness of the sides and back, and another to the depth of the lap dovetails on the front. These were used to mark the depth of the tails and pins on both faces of the sides and backs, and the end and inside face of the front.

Spacing

13 Using a Trend Point-2-Point jig to space the tails, I marked them on the sides, ensuring that the base housing was covered by a tail.



14 Cutting tails on several drawer sides



15 Marking backs from fronts



16 Pins routed out and finished



17 Chopping out dovetail sockets

14 Several sides were taped together, the top one marked and the tails cut out together on the bandsaw, cleaned up with a paring chisel, and offered up to their respective backs and fronts.

15 Using the tails as a guide, the pins were marked very carefully with a scalpel.

16-17 The bulk of the waste was removed from the front sockets and between the pins on the backs. I prefer to do this with a router, but obviously use whichever method you prefer. All were trimmed to the scalpel line with a sharp paring chisel, and the joints partially inserted to confirm the fit.

18 Having cut all the drawer components, they were stacked ready for assembly.

Assembly

The inside faces were hand sanded, with just the right amount of glue applied to the base housings and the top edges of the dovetail sockets. The base was pushed into the housing in the front, and the sides fitted to the front and tapped partially home.

The under edge of the back was glued up and the sides partially fitted to it. The joints were tapped home and a sash clamp used to pull them up tight and force out any excess glue. The diagonals were checked, adjustments made for square and wind, the back pinned, and then the drawer left to set. ➤



18 Drawer components stacked ready for assembly



19

Planing high spots off drawers


20

Checking drawer fit with feeler gauges


21

Shaping the handle on the radial arm saw sanding attachment


22

Sanding handles on an inverted sander


23

Rounding over the handle edges

Fitting

19-20 Once set, the outside faces of the joints were planed flush, a temporary pull fitted, and the drawer offered up to the aperture. High spots and areas of binding were removed with a smoothing plane and, when the fit was satisfactory, the outsides were given a final sanding and a touch of candle wax to ensure easy running.

Handles

The rectangular handles were cut to size and a finger recess cut with a straight cutter on the router table.

21-22 The under curve was cut on the bandsaw and finished on the radial arm saw drum sander. The handles were finished on an inverted belt sander.

23 All the edges were rounded over using an ⅛in radius cutter on the router table.

Finish

As most of the sanding had been done prior to assembly, it now only remained to hand sand out any clamping marks and blemishes.

The surfaces were lightly sprayed with water to raise the grain and left to dry, then given a final hand sanding with 320 grit. Three coats of a water-based satin finish acrylic varnish were then applied with a sponge, and lightly sanded between coats to remove nibs.

Conclusion

These chests were quite impressive when finished – the contrast in the woods worked well. They fitted nicely into their home and the clients were pleased. ■



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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



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.
Web: www.sawdustandwoodchips.com



Gareth Irwin

Gareth Irwin is a hand tool only woodworker from mid Wales who uses both green and seasoned timber to make everything from Welsh stick chairs to pole lathe turned bowls to spoons.
Instagram: @Welshwoodturner



Amber Bailey

Amber Bailey is a marquetarian and surface design artist with a background in furniture restoration. She has trained in prestigious decorative art schools on both sides of the English Channel, then working at a furniture company using laser-cut marquetry. She has now moved back to her native Sussex for a break to consider the next step in her creative journey.
Web: www.abmarquetry.com
Email: ab.marquetry@gmail.com



Steve Bisco

Steve Bisco has been carving as a hobby for more than 25 years, specialising in decorative carving and period styles. He is inspired by a love of historic buildings and aims to capture the spirit of a period in pieces for display in the 'home gallery'.



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



Kevin Ley

On leaving the RAF in 1987 Kevin Ley set to turning his hobby into a commercial proposition. The former squadron leader designs and makes bespoke furniture from his cottage and workshop in the wilds of Shropshire, England. He has now hung up his woodworking apron!



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.



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

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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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 4" BELT/ 8" DISC SANDER



- Includes two tables
- 550W 230V motor

£159.98 EXC.VAT £191.98 INC.VAT

CS4-8

Clarke DUST EXTRACTOR/ CHIP COLLECTORS



CDE7B

CWVE1

FROM ONLY £109.98 EXC.VAT £131.98 INC.VAT

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

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CWVE1	1100W	183 M3/h	50Ltrs	£109.98	£131.98
CDE35B	750W	450 M3/h	56Ltrs	£144.99	£173.99
CDE7B	750W	850 M3/h	114Ltrs	£159.98	£191.98

Clarke MORTISING MACHINE



CBM1B

£174.99 EXC.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

CHISELS AVAILABLE FROM £8.39 INC VAT

"..fast and accurate with a good solid feel...Excellent value for money." See www.machinemart.co.uk

Clarke BISCUIT JOINTER

Einhell



TC-BJ900

- 11000rpm Operating Speed
- 860W motor
- 14mm Cutting Depth
- Inc. dust bag, storage case and face spanner for cutter change

2 YEAR GUARANTEE

£54.99 EXC.VAT £65.99 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

£149.98 EXC.VAT £179.98 INC.VAT

Clarke DISC SANDER (305MM)



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

PRICE CUT £124.99 EXC.VAT £149.99 INC.VAT WAS £155.98 inc.VAT

CBS1-5B

Clarke BELT SANDERS

Makita

- Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK



BS1

FROM ONLY £36.99 EXC.VAT £44.39 INC.VAT

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

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



CDS-1V

FROM ONLY £19.98 EXC.VAT £23.98 INC.VAT

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

- Ergonomic design for optimum comfort



CON300

*was £39.59 inc.VAT

FROM ONLY £16.99 EXC.VAT £20.39 INC.VAT

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190X90mm	150W	£16.99	£20.39
CON300*	230X115mm	330W	£29.98	£35.98

Clarke CIRCULAR SAWS

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



CON185

*Includes laser guide

FROM ONLY £41.99 EXC.VAT £50.39 INC.VAT

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	£75.59

VAC KING WET & DRY VACUUM CLEANERS

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



FROM ONLY £49.98 EXC.VAT £59.98 INC.VAT

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY DRY/WET	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	£81.59
CVAC30SSR*	1400W	24/21ltr	£89.98	£107.98

Clarke RANDOM ORBITAL SANDER

- Adjustable front handle improves control
- 7000-14000rpm



CROS3

£32.99 EX.VAT £39.59 INC.VAT

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

Clarke ELECTRIC POWER FILE

CPF13



- Variable belt speed
- Tilting head

*Black & Decker

FROM ONLY £49.98 EXC.VAT £59.98 INC.VAT

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 CORDLESS STAPLE/ NAIL GUN

- All models include nail/staple pack and tough moulded case
- 18V 2Ah Li-ion power pack
- 18 Staple/Nail Gauge



CONSN18LIC

ONLY £109.98 EXC.VAT £131.98 INC.VAT

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

Clarke CONTRACTOR 18V BRUSHLESS COMBI DRILLS

- 2 forward and reverse gears

powered by Li-ion



CON180LI

FROM ONLY £109.98 EXC.VAT £131.98 INC.VAT

*was £203.98 inc. VAT

MODEL	VOLTS	BATTS	EXC. VAT	INC. VAT
CON18LIC	18V	2x 2.0Ah Li-Ion	£109.98	£131.98
CON180LI*	18V	2x 4.0Ah Li-Ion	£159.98	£191.98

Clarke PLANERS & THICKNESSERS

CPT800

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



PRICE CUT NOW FROM £179.98 EXC.VAT £215.98 INC.VAT *WAS £221.99 inc.VAT

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600*	6"	120mm	£179.98	£215.98
CPT800	8"	120mm	£219.98	£263.98
CPT1000	10"	120mm	£299.00	£358.80

Clarke OSCILLATING BOBBIN SANDER

COBS1

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



PRICE CUT £129.98 EXC.VAT £155.98 INC.VAT WAS £167.98 inc.VAT

Clarke BOLTLESS SHELVING/BENCHES

- Simple fast assembly in minutes using only a hammer





FROM ONLY £29.98 EX.VAT £35.98 INC.VAT

SAVE 10% WHEN YOU BUY ANY MIX OF 4 FROM THIS RANGE SAVE AT LEAST £23.99 INC.VAT

150 KG PER SHELF (evenly distributed) Strong 9mm fibreboard shelves

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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

Clarke WHETSTONE SHARPENER (200MM)

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



CWS200B

ONLY £119.98 EXC.VAT £143.98 INC.VAT

Clarke OSCILLATING BELT & BOBBIN SANDER

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



£179.98 EXC.VAT £215.98 INC.VAT

COEBS1

28264LH

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Clarke SLIDING COMPOUND MITRE SAWS

BEST SELLER

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

FROM ONLY £89.98 EXC.VAT £107.98 INC.VAT



CMS10S2

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/ CROSS	EXC.VAT	INC.VAT
CMS210S	210/30	60/120	£89.98	£107.98
CMS10S2	254/30	78/340	£139.98	£167.98

Clarke ELECTRIC HEATERS

BEST SELLER

DEVIL 7003

DEVIL 6003 FROM ONLY £49.98 EXC.VAT £59.98 INC.VAT



MODEL	VOLTAGE	HEAT OUTPUT KW	EXC.VAT	INC.VAT
DEVIL 6003	230V	1.5-3	£49.98	£59.98
DEVIL 7003	230V	3	£59.98	£71.98
DEVIL 6005	400V	2.5-5	£69.98	£83.98
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£109.00	£130.80
DEVIL 6015	400V	5-10-15	£169.00	£202.80
DEVIL 7015	400V	15	£199.98	£239.98

Clarke BENCH BANDSAWS

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

£129.98 EXC.VAT £155.98 INC.VAT

CBS190B





CBS225

- Great for both home & professional use
- Induction 300W motor • Table tilts up to 45° • 9" throat size

PRICE CUT £189.98 EXC.VAT £227.98 INC.VAT WAS £238.80 inc.VAT

REMOVABLE DUST TRAY

Clarke PROFESSIONAL BANDSAWS

MAGNIFIED MITRE GUIDE





QUICK RELEASE FENCE

DRIVE-BELT TENSIONING

SOLID GROUND CAST IRON TABLE

CBS300

FROM ONLY £219.98 EXC.VAT £263.98 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
- Includes stand

MODELS ALSO FEATURE:

MULTI-STEP DUST EXTRACTION OUTLET





FLEXIBLE LED WORKLIGHT

REMOVABLE DUST TRAY

BLADE TENSIONING CONTROL

* was £478.80 inc.VAT # was £597.60 inc.VAT

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS250 NEW	250mm/10"	100mm	75mm	£219.98	£263.98
CBS300*	305mm/12"	165mm	115mm	£379.00	£454.80
CBS350#	340mm/14"	225mm	160mm	£479.00	£574.80

Clarke MITRE SAWS

Einhell



CMS210

PRICE CUT NOW FROM £54.99 EXC.VAT £65.99 INC.VAT WAS £71.98 inc.VAT

\# Laser Guide ‡ Sliding Compound

- Quality Range of Mitre saws and blades in stock

* was £71.98 inc.VAT

MODEL	BLADE DIA/ BORE (mm)	MAX CUT DEPTH/CROSS	EXC. VAT	INC. VAT
CMS210*	210/30	60/120mm	£54.99	£65.99
Einhell TC-MS 2112	210/30	55/120mm	£59.98	£71.98
Einhell TC-SM 2131#	210/30	62/310mm	£129.98	£155.98
Einhell TC-SM 2534‡	250/30	75/340mm	£159.98	£191.98

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating

NEW DUAL VOLTAGE 230v 110 VOLT IN STOCK FROM £226.80

FROM ONLY £79.98 EXC.VAT £95.98 INC.VAT



PROPANE GAS FIRED

MODEL	MAX OUTPUT KW	EXC. VAT	INC. VAT
Little Devil II	10	£79.98	£95.98
Devil 700	15	£99.98	£119.98
Devil 900	24.9	£139.98	£167.98
Devil 1600	36.6	£169.98	£203.98

Clarke DIESEL/PARAFFIN HEATERS

FROM ONLY £189.00 EXC.VAT £226.80 INC.VAT

Ideal for fast efficient heating

- Extra-long run fuel tanks – up to 53 litres
- Variable heat output with thermostat control



XR80

MODEL	MAX OUTPUT	EXC.VAT	INC.VAT
XR60	14.7kW	£189.00	£226.80
XR80	20.5kW	£239.00	£286.80
XR110	29.3kW	£289.00	£346.80
XR160	46.9kW	£349.00	£418.80
XR210	61.5kW	£399.00	£478.80

Clarke STATIC PHASE CONVERTERS

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



PC60

ROTARY PHASE CONVERTERS ALSO IN STOCK

FROM ONLY £229.00 EXC.VAT £274.80 INC.VAT

CONVERT 230V 1PH TO 400V 3PH

MODEL	MAX. MOTOR HP	FUSE	EXC.VAT	INC.VAT
PC20	2HP	10Amps	£229.00	£274.80
PC40	3.5HP	20Amps	£269.00	£322.80
PC60	5.5HP	32Amps	£319.00	£382.80

Clarke CONTRACTOR ROUTERS

BOSCH

- Powerful heavy duty machines ideal for trade and DIY use



CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

FROM ONLY £44.99 EXC.VAT £53.99 INC.VAT



CR1200

NEW

*DIY

MODEL	MOTOR (W)	PLUNGE (mm)	EXC.VAT	INC.VAT
CR1200 NEW	1200	0-55	£44.99	£53.99
CR1C*	1200	0-50	£46.99	£56.39
Bosch POF1400ACE	1400	0-55	£89.98	£107.98
CR2	2100	0-60	£119.98	£143.98

Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes

FROM ONLY £32.99 EXC.VAT £39.59 INC.VAT

6" & 8" AVAILABLE WITH LIGHT

STANDS FROM ONLY £47.98 INC.VAT



POLISHING KITS 4" TO 8" FROM ONLY £27.59 INC VAT

\# With sanding belt
*8" whetstone & 6" drystone

MODEL	DUTY	WHEEL DIA.	EXC.VAT	INC.VAT
CBG6RP	DIY	150mm	£32.99	£39.59
CBG6RZ	PRO	150mm	£42.99	£51.59
CBG6RSC	HD	150mm	£54.99	£65.99
CBG6SB#	PRO	150mm	£54.99	£65.99
CBG6RWC	HD	150mm	£59.98	£71.98
CBG8W* (wet)	HD	150/200mm	£56.99	£68.39

Clarke DRILL PRESSES

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

FROM ONLY £66.99 EXC.VAT £80.39 INC.VAT



CDP152B

B = Bench mounted
F = Floor standing

MODEL	MOTOR (W) SPEEDS	EXC. VAT	INC. VAT
CDP5EB	350 / 5	£66.99	£80.39
CDP102B	350 / 5	£79.98	£95.98
CDP152B	450 / 12	£149.98	£179.98
CDP202B	450 / 16	£189.00	£226.80
CDP10B	370 / 12	£198.99	£238.79
CDP452B	550 / 16	£229.00	£274.80
CDP352F	550 / 16	£229.00	£274.80
CDP502F	1100 / 12	£499.00	£598.80

Clarke CONTRACTOR JIGSAWS

BEST SELLER



CON750 *DIY #Professional

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC VAT
CJS380*	420W	55/6mm	£15.99	£19.19
CON750#	750W	80/10mm	£27.99	£33.59
Bosch PST700E*	500W	70/4mm	£49.98	£59.98

Clarke 12" DOVETAIL JIG

- Simple, easy to set up & use for producing a variety of joints • Cuts work pieces with a thickness of 8-32mm • Includes a 1/2" comb template guide & holes for bench mounting



£57.99 EXC.VAT £69.59 INC.VAT

CDTJ12

Clarke ROUTER TABLE

CRT-1 Router not included

BEST SELLER



- Converts your router into a stationary router table • Suitable for most routers (up to 155mm dia. Base plate)

£69.98 EX.VAT £83.98 INC.VAT

Clarke SCROLL SAWS

FROM ONLY £79.98 EXC.VAT £95.98 INC.VAT



CSS400C

BEST SELLER

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

MODEL	MOTOR	SPEED RPM	EXC. VAT	INC. VAT
CSS400D NEW	120W	400-1600	£79.98	£95.98
CSS16VB	90W	550-1600	£94.99	£113.99
CSS400C	90W	550-1600	£114.99	£137.99

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

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PHOTOGRAPHS BY LOUISE BIGGS

How to Recycle old turnings

You just never know what might turn up, as **Louise Biggs** discovers

As a bit of a departure from my usual work, at a local event I was approached by a woman who admired the turned jewellery I had made. The conversation turned to the subject of some pieces of walnut she had.

The tree had grown in her grandmother's garden and was much loved by all the family. Then the inevitable happened, the tree had to be cut down. Her grandmother had the tree planked with the thought of it being air-dried to make a piece of furniture. Unfortunately, wrongly advised, much of the timber rotted so all that remained was 'three smallish pieces'.

The brief – could I make two pendants and a pair of stud earrings and anything else that I thought would be possible?

It came as something of a surprise when the 'smallish pieces' turned out to be three turned pieces, which later became four:

- Two flat-disc pot stands, between 10mm and 15mm thick.
- Two 'bowls' with screw holes in the bases and a maximum of 20mm thickness in the flat bottom of each bowl.

I make small gift items to use some of the offcuts from the furniture making/restoration and have in stock keyring kits, mirror compacts, hinged box rings and jewellery findings. From one disc I judged I could get a turned button for the lid of the compact, two pendants and the stud earrings – all turned on faceplates. From the bottom of one bowl two keyrings – spindle turned, also a small ring box – turned as a faceplate turning matching the grain as much as possible.



The old turned bowls and discs



A selection of jewellery findings, keyring kits, mirror compact and hinged box ring that will be used



RING BOX

1 Two small discs were cut from the bowl bottom, slightly larger than the hinged box ring. At only 20mm thick I glued the pieces to waste boards fixed to a faceplate using hot-melt glue. This avoided losing timber by forming a chucking point. All being well, I would keep to the two-thirds/one-third proportion commonly used by turners.



2 The compass point marked a centre point and, with the tailstock drive, the disc was positioned on the faceplate. Once secure, the face of the box base was trued up using a beading/parting tool. The edge was then cleaned up using a small bowl gouge.



3 The hinged box ring had a rebate on each ring which would, in turn, be fitted on to a small rebate on the timber lid and base. Using a Vernier gauge set to the required diameter, the bottom section was marked using the left point of the Vernier. The right point is a visual guide to get the registration mark centred – it must not make contact with the timber.





4 The rebate was cut using the beading parting tool and the box ring was checked for a good fit. In both cases the top ring was used as the bottom ring had a small bow feature that obstructed the fitting process. The inner edge of the ring was then marked with a sharp pencil.





5 The inside of the box bottom was hollowed out using a small bowl gouge. To start with, the gauge was positioned with the bevel at right angles to the face in order to cut and mark the opening. This was kept flush to the inner edge of the ring. Working from the outside to the centre a curved hollow was made. A small round-nose scraper was used to finish the inside surface.



6 Too small to form much of a shape to the outside of the box, a closer look at the hinged ring revealed a slight taper on each ring. This was echoed on the bottom of the box cutting the taper using the bowl gouge with the bevel rubbing.

7 Having been abraded through the grits, a coat of finishing oil was applied before the base was parted off the faceplate using a 2mm parting tool, kept flat against the timber block with a minimal clearance gap.



8 Finally a jam chuck was used to clean up the bottom of the box. A rebate cut opposite to that on the box centred the box and, for further security, tape was used. With light cuts from the bowl gouge the bottom was undercut slightly. Repeating stages 4 to 8 the top section was turned. Once parted off and fitted to the jam chuck a small dome was formed on the top using the bowl gouge and some graduating decorative ring cut using a skew chisel. ➤

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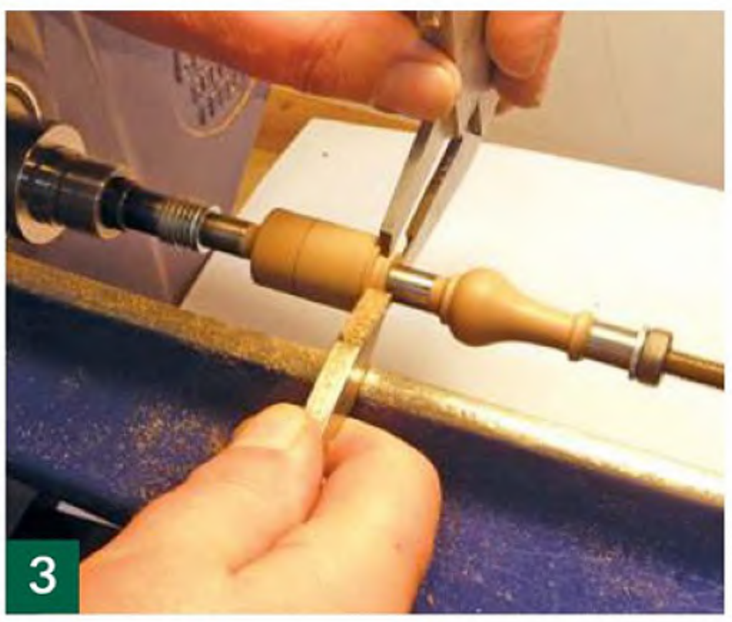
KEYRINGS

1 To set up the keyrings, the brass tubes need to be fitted and glued into the timber sections. Drilled out on the pillar drill, the blanks were left slightly longer and trimmed back after gluing. This prevents any excess glue being forced into the ends of the tubes.





2 Using a pen mandrel with some tight-fitting washers to act as extra spacers, the sections were turned to round using a spindle gouge to obtain the maximum diameter.



3 Each end of the two pieces was reduced in size using a beading/parting tool to match the diameter of the turned metal end caps. A Vernier gauge with the corners rounded off was used to gauge the diameter. A cove and fillet was formed at the bottom and a small bead at the top.



4 Using a small spindle gouge the bead and ogee shapes were formed between the two end shapes. They were abraded through the grits and finished before the end caps were fitted into place.



PENDANTS

1 Using two discs of board material the first is fitted to the faceplate. The second is fitted to the first using two screws. Once the edge has been trued up the top screw is marked with a line centred to the screw hole. An offset line is marked 16mm either side. This jig will form the off-centre hole.

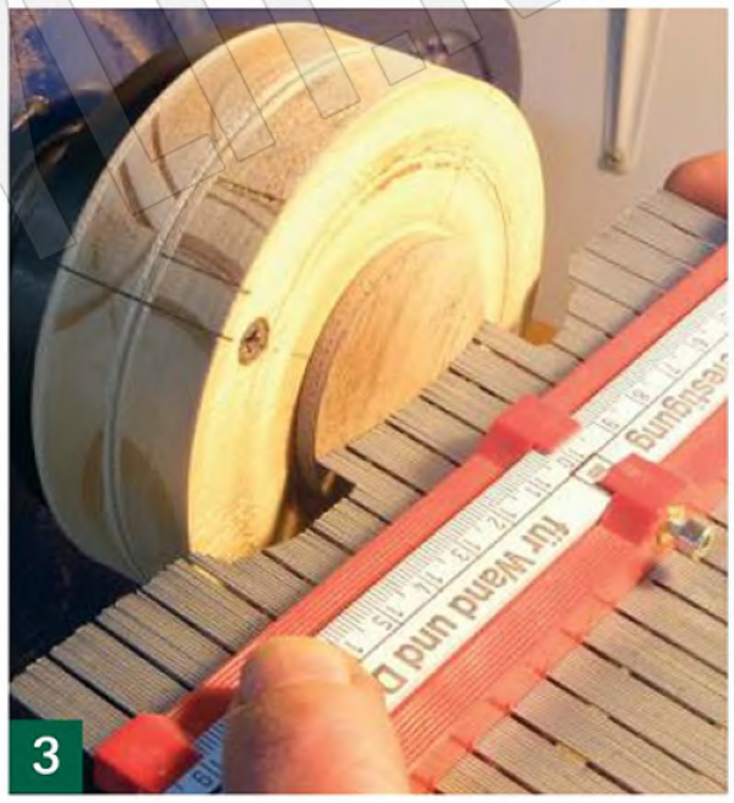




2 The disc of timber was adhered to the front of the jig using strong, double-sided tape. Using a bowl gouge a domed shape was turned on the surface of the disc, working from the centre to the edge. The edge was then turned to size using a skew chisel.

3 A profile gauge was used against the dome as both sides of the pendants will have the same curve. The opposite side of the gauge would be used to form the jam chuck later on.

4 The jig was then moved to the offset position and, using the long point of a skew, a registration mark was put on the surface. It is best to start towards the centre and gradually move outwards, checking the position after each cut. I was aiming to have a 7mm band at the top of the pendant. The centre hole is cut halfway through the thickness and the shape blended in.



5 One side of each pendant was turned. Registration marks were made on the edge as well as the direction of offset. A recess was then turned in the face of the jig to match the shape on the pendant. The recess was checked against the profile gauge. When turning the reverse side of the pendant the registration marks were aligned and the offset had to move in the other direction.


4


5

COMPACT AND STUD EARRINGS


1

1 The timber dome for the mirror compact was stuck to the waste board using the double-sided tape. Using a bowl gouge and working from the centre to the edge, a shallow dome was formed and the diameter turned to size using a skew chisel.


2

2 Once the dome had been abraded, it was released from the waste board by easing a small pallet knife behind the disc and working it round in a circular motion. The stud earrings were formed in the same way, using the profile gauge to ensure that both shapes were the same.







The items were finished with finishing oil and buffed on a buffing system. The disc and post which forms the earrings were glued into position. On one pendant a small jumpring was fitted to hold the pendant to a silk cord. The hinged box rings were glued into place.



The completed items are shown here. One disc and one bowl were used to make the items. The other two pieces will be returned to the customer unless she is interested in the idea of the second bowl being re-turned, incorporating the second disc to form a foot or small tripod legs. We shall see. ■

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BOOK REVIEWS

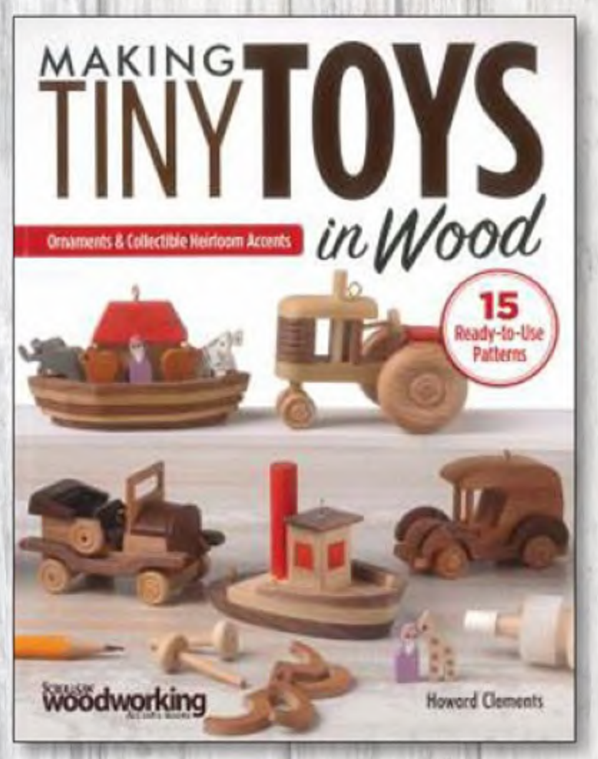
The Editor toys with a couple of interesting books that make plane reading...

Making Tiny Toys in Wood – Ornaments & Collectible Heirloom Accents

Howard Clements

They say 'small is beautiful' – it can be fun too. This book is what it says, making tiny toys. To give you an idea of scale the bulldozer project is about 62mm long, so quite small. The projects are all scrollsaw based with some useful setting up and working tips, but of course there are other shaping and sanding activities involved. Apart from the getting started section which covers tools and materials and methods, the next chapter is making a tiny toy, which eases you into the way of being 'small minded' by showing you how to make the tiny bulldozer. The main body of the book is the fourteen patterns which naturally are lifesize and easy to copy off the page with plenty of colour photos showing the finished pieces plus exploded construction and parts lists. Try your hand at things like Noah's ark, Carousel, Wishing well and Locomotive. Plenty to keep you busy making little toys perfect for grandchildren, just like the author who started making them, one per year for his first grandson. Lots of fun and not wasting much material either!





ISBN: 978-1-56523-915-9
PRICE: £9.99
Fox Chapel Publishing

Tradition Wooden Handplanes – How to Restore, Modify & Use Antique Planes

Scott Wynn

There is something romantic about old time craftsmanship and the tools that were used, but in reality, many of these venerable hunks of wood and metal end up as decorative shelf pieces propping up books. This is a shame because rather like film versus digital images, they worked well for long enough. So why not take a leaf or two out of this book and have a go at restoring and putting back into use a wooden hand plane? It starts with the anatomy of a traditional handplane, then a section on sharpening and steel, followed by how a plane works. Moving on to the next chapter which is all about traditional use, explaining the different types. Further chapters cover workholding, setting up, tuning and troubleshooting. This edition now includes how to make your own wooden-bodied planes. It is a thick tome with lots of colour photos and illustrations and plenty of advice, hints and tips; a very comprehensive work that will keep you absorbed for ages.





ISBN: 978-1-56523-887-9
PRICE: £14.99
Fox Chapel Publishing

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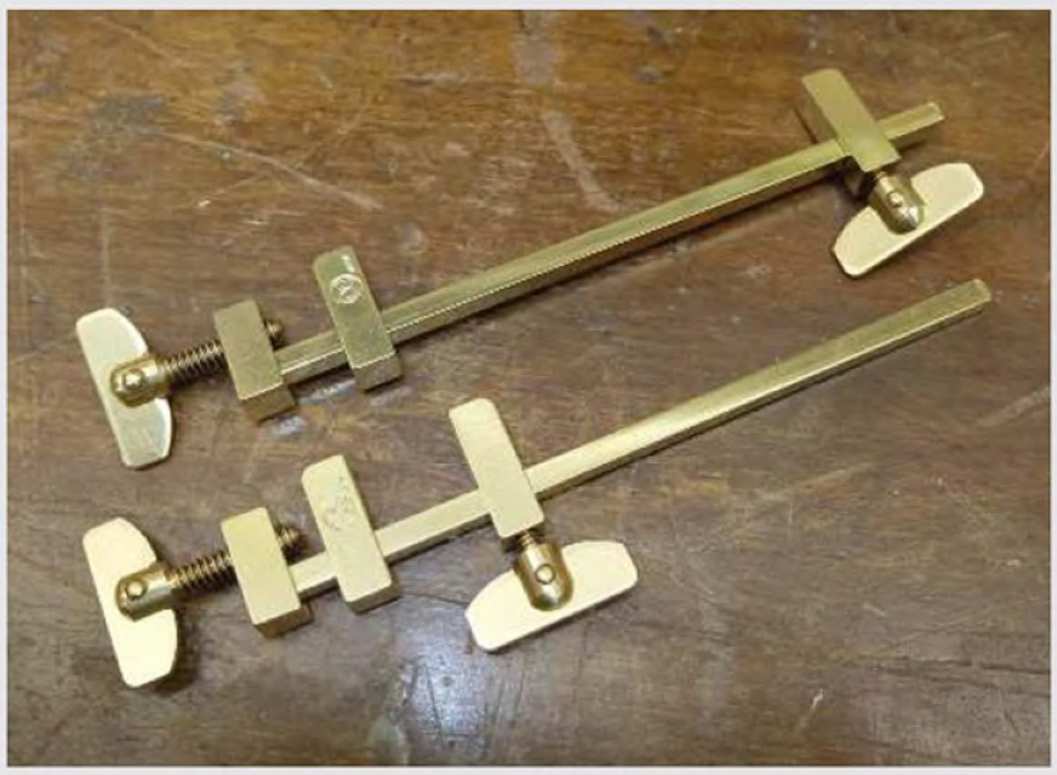
KITTED OUT

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

MINI TEST

No Pressure

Most clamps are used to press components together firmly for a tight fit and ensure glue squeeze-out. Sometimes a lot of clamping force is necessary if a joint is tight or components are a bit wayward. There are also other, smaller jobs where only the lightest of touches is needed when clamping; simply holding components in correct alignment while the glue is curing. That is where these hatakane clamps from Axminster Tools fit the bill perfectly. I bought one pair just to try and followed quickly with another pair – as they were so much better than other clunky, weighty, surface damaging small clamps that I already own. Their deceptively simple basic engineered design belies the quality of manufacturing.





Move the tail slide to accommodate the components being clamped and tighten the butterfly knob, then wind the other knob in, so the other slide presses gently but firmly. The light weight ensures the clamp won't fall off and, of course, the brass won't rust. These clamps are perfect for musical instrument and model-making as well as lighter cabinetmaking tasks.

Highly recommended.

Hatakane brass bar clamps, £10.90 a pair
www.axminster.co.uk

Arbortech Mini Carver – the next generation mini grinder

This next generation machine will take carvers and artists seamlessly through rough shaping, sculpting and sanding stages. The Mini Carver now offers variable speed, vibration reduction and improved sanding, as well as the ability to hook up to dust extraction during the sanding process. The versatility of this tool will take customers from start to finish in a variety of small to medium woodcarving projects.



The addition of a six variable speed setting, ranging from 6000-18000rpm, means users can adjust the speed of their carving and sanding to suit their needs.

The sanding function has been improved with the addition of a flexible rubber backing pad. This pad will sit behind the sanding disc to add robustness and flexibility which will increase the life of the sanding disc, resulting in a lower replacement rate. It will also help the sanding discs mould more easily to the timber. A new and improved motor, plus the addition of a vibration-reducing handle will add further comfort and ergonomics for users.

The Mini Carver comes with Arbortech's Mini Industrial Blade. Compared to standard steel carving blades, this blade will stay sharp for longer, offering optimum performance for even the hardest timbers.

The Mini Carver is supplied with a tool bag, mini industrial blade, sanding discs, rubber sanding pad and dust extraction attachment. More accessories are available online.

Price: £219.95
www.brimarc.com

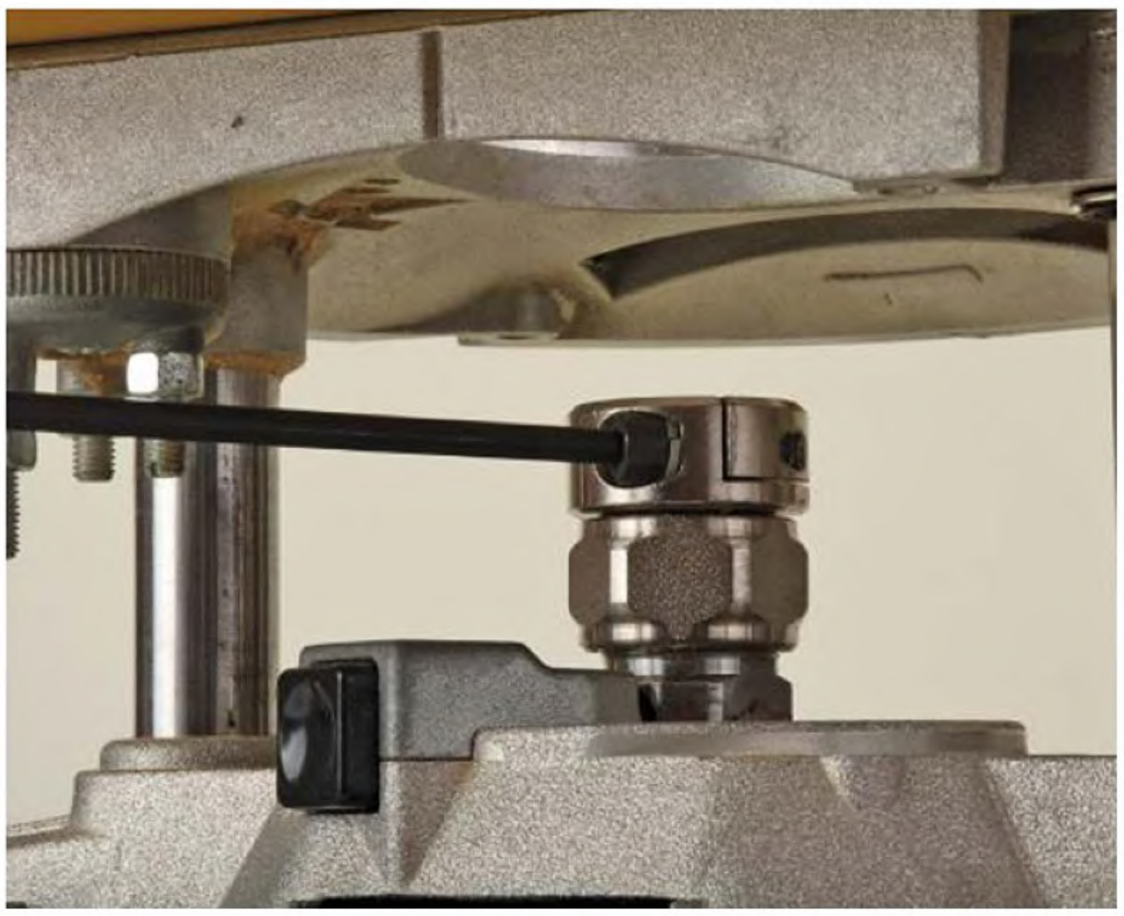
The perfect jacket and trouser combination for winter from Snickers Workwear



These Stretch-comfort Work trousers and Hi-Tech 37.5® work jackets offer optimum weather-protection on site. With great fit and superb value for money, the brand new comfort fabrics woven into Snickers' newest street-smart Work Trousers deliver enhanced freedom of movement as well as improved comfort and close quarter mobility.

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Prices from £80.39
www.snickersworkwear.co.uk



Musclechuck – Quick Change Chuck Type 2

Change router cutters with ease and speed from above the router table and on a plunge router. It features a cam-lock design that clamps and loosens with a partial turn using the included 5/32, ball-end, hex key wrench. This is much quicker than the original two-wrench method and changes router cutters with ease and speed. Type 2 is compatible with large ½in DeWalt, Trend, Festool, Fein and CMT routers – see website for model compatibility.

Price: £70
www.woodworkersworkshop.co.uk

MINI TEST

TensorGrip – L12 – High-build, high-strength wet spray adhesive





I picked up an aerosol can of this adhesive at the W18 Joinery and Furniture Manufacturing Show at the NEC, Birmingham as it seemed to promise a lot in terms of fast, clamp-free bonding of components.



Tensorgrip blurb explains that 'this highly engineered adhesive has proven to dramatically reduce production time. It removes the need for reliance on mechanical fastenings and wet glues in the application of curved structure building. L12 removes the need to use these traditional methods of bonding MDF and Flexi-ply onto curved structures, which can take up to 48 hours to cure.'

I tried it on a piece of tightly rolled 1.5mm birch ply. That doesn't sound too much of a stretch for a high-tech product, but the ply was quite deformed. The bond worked well for some time before the shape started reverting a bit. Normally it would be used on Flexi-ply or kerfed (slotted) MDF. As a way of creating shaped structures it is a fast non-wet glue solution which comes in big tanks for compressed air application or a standard aerosol can. If you have an awkward project give L12 a try; it might make light work of a difficult task.

Typical price £10.82 (500ml)
www.tensorglobal.com/uk

Cross-cut sled



Cutting list

- 2 pieces 1220 x 610 x 13mm ply
- 2 pieces 1220 x 100 x19mm ply
- 2 pieces 750 x 100 x 19mm ply
- Material for runners
- 534 x 520 x 9mm Perspex

Cross-cutting on a tablesaw can be done safely as **Michael T Collins** explains

There are many situations in the daily work of a woodworker where the need arises to saw sheet goods and wide boards. Typically, sheet goods can be brought down to a manageable size by sawing on a table saw – a 1220 x 2440mm can be reduced to lengths of any width quite safely.

You could use a sliding mitre saw, which is great for cutting lengths but limited by the width that can be cut. In the past I've overcome this challenge by rotating the board and matching the saw cuts. Invariably, they never quite match and creates additional work by having to clean up the ugly 'saw step' with a plane. You could hand saw them, again producing a rough edge, but this is also time consuming.

Enter the cross-cut sled

The cross-cut sled is a relatively simple device consisting of a sheet of ply that rides on two bars that slide in the mitre slot of the table saw. A fence at the front keeps the wood at 90° to the blade and the whole sled is pushed through the blade.

Over the years I have seen many cross-cut sleds being made and used and all have what I see as a serious safety flaw. In order to use them, you need to remove the blade guard, which defeats the purpose of having a safe way to cut wide boards.

My design

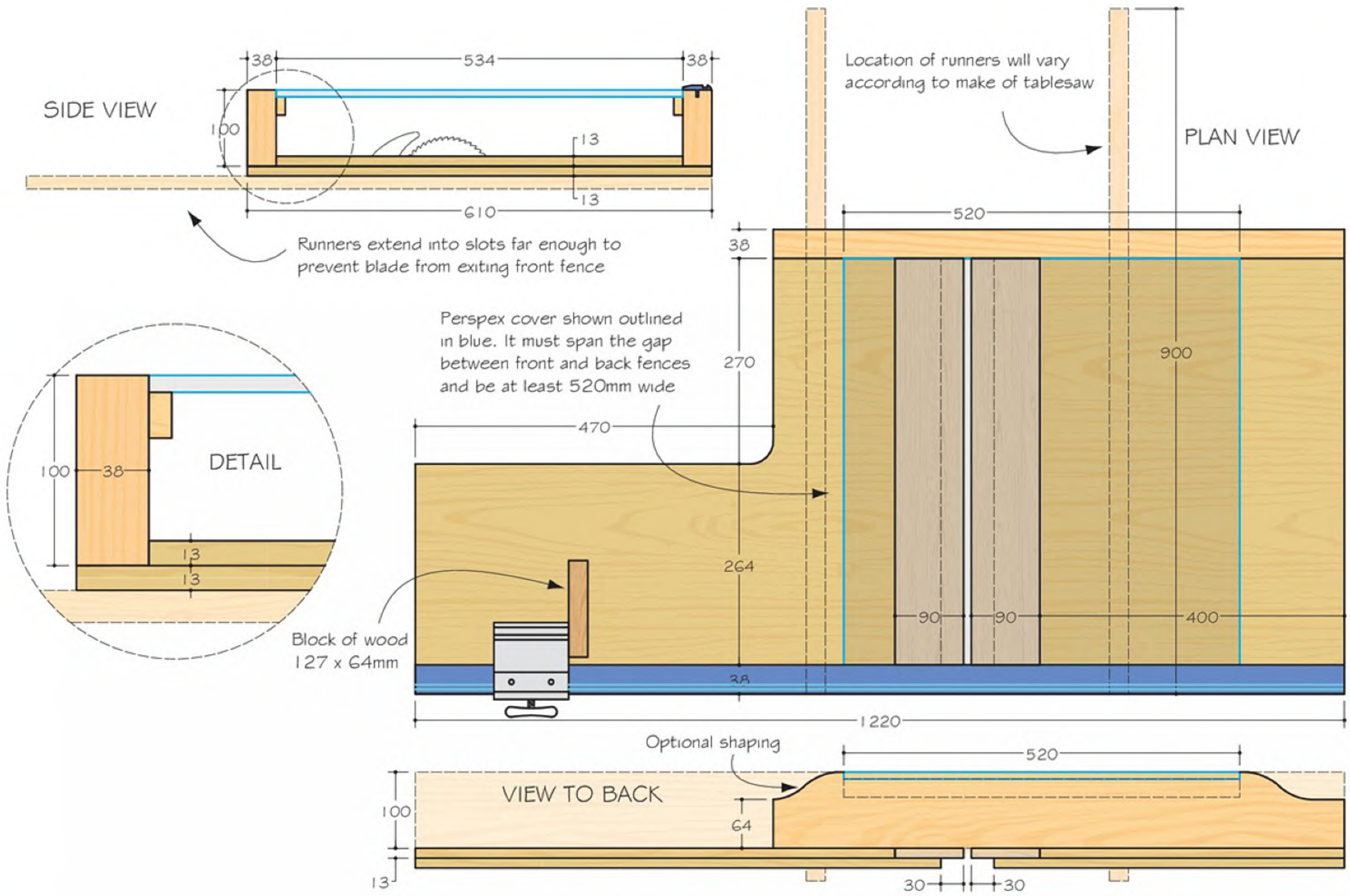
I have used several designs in my woodworking career and all have included some sort of additional safety.

In this article we will make a cross-cut sled that will enable you to easily and safely cut boards up to 500mm wide.

The making

1 The first step is to accurately cut a piece of the 13mm ply into a perfect 1220 x 610mm rectangle. If you do not have a means to do this, check with your local DIY store – they may offer a cutting service. If not, ask a friendly neighbour with a bigger workshop.

2 Next we need to make the front and back fences. To do this, laminate two pieces of 750 x 100 x 19mm to form the back fence and two pieces of 1220 x 100 x 19mm to form the front fence. Clamp the laminates, making sure they remain straight and set aside to dry.



The runners

3 I have some old Corian counter top that works great for runners. Rip a couple of pieces to the exact width of your mitre slots and about 1mm shallower than the slot. Make these runners 900mm long. The additional length will become obvious later. Test fit them in the mitre slots – you want them to be snug, but not so tight that it is hard to slide them. Sand or use a finely set plane to adjust the fit.

4 Evenly space three washers in each mitre slot, then place the runners on top so that the front of each runner is at the front of the table saw top.

5 Add a couple of pieces of double-sided tape to the top of each runner. This will hold the base firmly in place prior to securing it. Before pressing the base onto the runners, adjust the table saw fence to where you want the sled to run on the table saw. In my case, I want the longer capacity of the sled to be on the left of the blade.

6 Then place the 1220 x 610 x 13mm piece of ply on to runners with the right-hand edge hard up against the fence and the front of the base at the front edge of the table. Press down firmly. ➤


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7 Remove the base and drill about four pilot holes down the length of the runner, counter sink and secure in place with screws.

Back to the fences

8 Shape the back fence and add a quarter round profile.

9 Align the back fence with the back edge of the base and secure with counter-sunk screws every 150mm or so, but avoid the area 60mm to the left of the blade. The front fence will carry the track. The track I used had a mounting flange that needed to be housed.

10 To do this I used a circular saw to cut a 3mm slot to a depth of 20mm. The spirit level in the image gives me somewhere to rest the saw and keeps the fence straight as I make the cut.

11 I also added a 45° chamfer on one side of the slot so that the track seated fully.

12 Drill holes through the fence and flange of the track secure in place with screws driven through the wood and the track.

Attaching the front fence

The front fence must be attached so that it is as close as possible, at 90° to the blade – we will fine tune later.

13 First secure the right end of the fence in the desired location, flush to the front of the base. This will be our pivot point.

14 Then with an accurate carpenter's square against the blade (make sure you are resting on the face of the blade and not skewed on the teeth), position the other end so that the angle between the fence and the blade is 90°.

15 With a screw, secure the fence in place on the left-hand end. This will be our adjustment screw.

Zero clearance inserts

Over the course of a project, I might change the blade a couple of times using a standard 3mm rip blade, cross-cut blade or even cut long mitres – doing so on this sled would immediately lose its zero-clearance. So this sled will have replaceable inserts. Position the sled over the blade and carefully raise it so that it just touches the underside of the sled.


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16 Now, turn the sled over and remove a section of the base 30mm either side of the kerf mark just created. The blade will now be in the middle of a 60mm gap in the base. Cut a second piece of 13mm ply to about 3mm less than the distance between the two fences. This will form the second layer of the base.


16

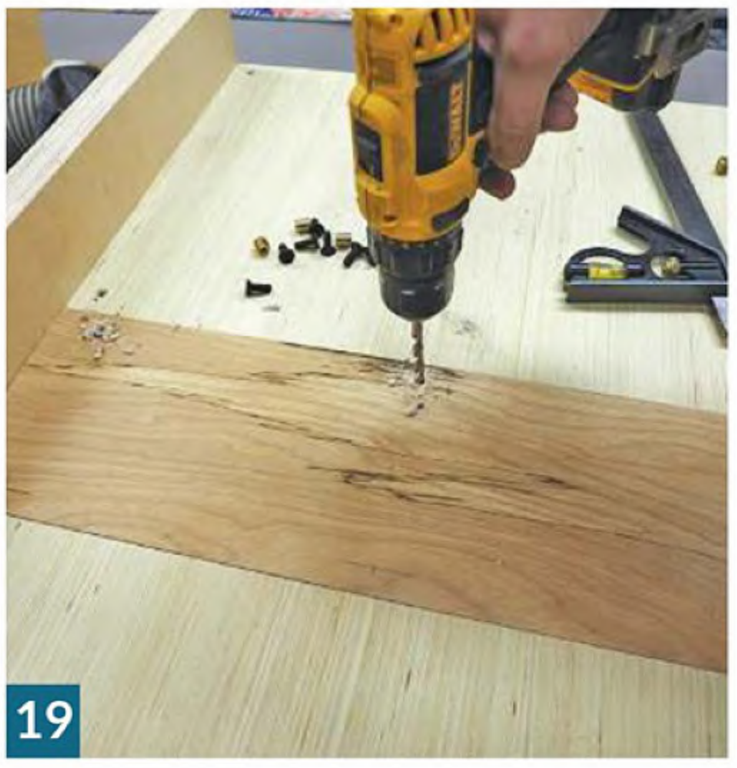
17 Cut this sheet into two pieces so that it creates a ledge about 60mm either side of the blade. This is where the insert will lay. Secure these two boards in place with countersunk screws.


17

18 Insert a piece of the offcut 13mm board, this will be the zero-clearance insert.


18

19 Drill through both the inserted board and the base using an 8mm drill.


19

20 Remove the insert and re-drill the base holes using a 9.5mm drill. Now secure the threaded inserts into the baseboard.

21 Countersink the insert holes and secure to the base using the machine screws.

The guard

The vast majority of cross-cut sleds being used have no blade guard and some do not even keep the riving knife in place. However, on this sled the two fences support a Perspex guard that spans the gap.


20


21

22 I pin nailed, then screwed a ledge to the front and back fence and cut the Perspex to length and screwed it to the back fence. The front fence needs to be adjusted before finally securing the guard.

Fine tuning

Unless you are remarkably lucky, the fence will not be at 90° to the blade, and some fine tuning is required. To do this I will be using William Ng's simple 5-cut method.

23 Take any four-sided board that is at least 300 x 300mm and label the sides 1 through 4 and also label side 1 with a 5. With the board firmly held against the front fence, cut a sliver off side 1, rotate the board clockwise and cut a sliver off side 2 – repeat the cut/rotate until you are back at side 5. ➤


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Then cut a 30mm piece off side 5 – label the top A and bottom B. Any angle error between the blade and fence has now been compounde four times.

24 Accurately measure the width of the piece at A and B.

Formula

The error = (A-B) ÷ 4 (the no. of cuts) ÷ length of 5th cut (this gives the error per inch) x distance between pivot point and the point of adjustment.

So the error = -0.0639in

Therefore, the left-hand end of the fence needs to move out by approximately 0.0639in making the angle greater.

Take a feeler gauge and select the closest gauge to the error you found above, in my case 0.064in (slightly larger than 1/16in)

Place a piece of wood securely on the base and resting against the fence at the location of the left adjustment screw. Now, remove the screw that was holding the left end of the fence in place.


27


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25 Insert the feeler gauge between the block of wood and the fence and reposition the fence against the feeler gauge. Screw the fence in place using a new hole. You have now moved the fence out by the 0.064", thus increasing the angle at the blade.

26 Repeat the process of cutting a board and testing for square. You should now have a cross-cut sled that cuts perfect right angles to the blade. Note: If you get a positive result the fence needs to be moved in – place the feeler gauge between the fence and the block, loosen the adjustment screw and move it forward the thickness of the feeler gauge.

Finally, secure the front fence in place again, avoiding the area within 60mm to the left of the saw cut. This is so that you can cut 45° mitre on this sled.

The stop

27 Secure a self-adhesive measuring tape to the track so that the zero is exactly on the left of the saw kerf. Now, cut a piece of wood to an accurate length, say 300mm.

28 I cut a lot of thin pieces and because of the height of the fence I needed to add a block of wood to the stop to prevent the wood sliding under. Take the board you have just cut and place it against the blade. Position the stop against the other end and adjust the cross hair so that it is directly above the 300mm mark and secure in place.

29 Now cut a piece of wood on the sled, measuring should confirm that the sled is now ready to make accurate, repeatable 90° cuts.

30 To reduce the mass of this sled I cut a section out of the base. You can also see the reason for the extra-long runners, they hit the end of the mitre slot in the outfeed table and thus prevents blade emerging out the front. If you do not have this option, you must add a few blocks of wood to the front of the fence.

There are lots of options but using the sled without a guard is not one of them! ■



Bosch cordless reciprocating sabre saw

Our very own demolition man – the Editor – tries out the perfect tool for the job

There are some powertools I'm not a great fan of; impact drivers and recip saws being two of them, but they do have a place and a purpose. Left to me, I'd take out studding with a chainsaw, but apart from the safety hazard all the nails would blunt it. This is where a recip saw comes in – demolition work. If you need to take down unwanted studwork in a gut and refurb job, flush cut-off pipework or get rid of awkward tree branches then this is the tool of choice.

Previously, recips have been corded tools, which is a real nuisance on site with trailing leads and very poor power supplies on a building site. Now, with ever more powerful battery technology and the reduced friction of a brushless motor, you can work trouble-free anywhere you need to go.

The GSA 18V-32 model is a quite chunky, professional-grade piece of kit. It has the familiar quick 'fit and release' blade fitting via a sprung collar, twin LED worklights for dark spaces and variable speed. The switch trigger has an inset black safety lock to reduce the chance of accidental activation and it has high and low gear settings. A large plated swing-out hanger gives you somewhere to put the tool while changing working position.



Black safety lock in the switch trigger

Blades

A recip is nothing without blades and Bosch has invested a lot of time and effort into all its tooling range. This machine takes the following blades:

- Progressor for wood and metal
- Heavy for wood and metal
- Endurance for heavy metal (three variants)



The range of Bosch blades



Fast cutting through tubular steel

Endurance and Progressor have micro carbide tips on the teeth and come in several different lengths, while Heavy is a hardened steel. The advantage of a longer blade apart, from capacity, is the ability to bend easily when flush-cutting of pipes and bolts set in block or concrete.

Verdict

At top speed there was quite a bit of vibration cutting through thick softwood. Better at a slightly lower setting, it made short work of it. On low gear and medium speed, cutting through steel pipe was like going through butter. Especially with a spare battery handy, it should be possible to chew through a lot studwork without a care about nails and screws as these blades are made to cope with both. A mean bit of kit to carry around site. ■

Tech spec

No load: 0-2,500 strokes per min
Stroke: 32mm
Max cut depth: 230mm wood/20mm non-alloy steel/175mm pipe dia.
Supplied: L-BOXX, endurance and progressor blades, 2 x 5.0Ah battery, quick charger
Weight: 3.9kg
Price: £605.92

NEWS & EVENTS

All the latest events and news from the world of woodworking



PHOTOGRAPH BY ADRIAN ASHWORTH

Coroner's wood

Record support for the Woodland Trust's HS2 campaign is a wake-up call for the environmentally caustic project

The strength of public feeling against the annihilation of ancient woodland for the new high speed rail network HS2 must serve as a wake-up call to those designing the scheme, claims the Woodland Trust.

More than 26,000 people have added their voice to the Trust's in opposing the destruction of at least 19 ancient woodlands for Phase 2b of the environmentally caustic project. It's the largest number of responses the charity has seen for one of its campaigns to protect woods under threat. Abi Bunker, Director of Conservation and External Affairs said: "The tremendous reaction to our campaign shows the overwhelming opposition to the destruction of this rare and irreplaceable habitat.

"We will submit all the responses on our supporters' behalf before HS2 Ltd's public consultation closes this month with the stark message that it's about time they sat up and listened to the groundswell of public opinion.

"They cannot continue to ride roughshod over our precious habitats like this. We stand to lose not just the woodland but the hundreds of species that call it home, and once it's gone it's gone forever as no amount of replanting can compensate for the loss."

The Trust's campaign launched in October in response to HS2 Ltd publishing its draft environmental statement for Phase 2b, revealing the shocking news that at least 19 ancient woods totalling 16.7 hectares (equivalent to 25 football pitches) are facing loss – double the Trust's original estimation.

Phase 2b will run from Birmingham to Leeds (123 miles) and Crewe to Manchester (51 miles) and as well as resulting in some destruction to those 19 sites, the route will cause



PHOTOGRAPH BY P LOCKWOOD

New Farm wood

damage and deterioration to 11 more through noise, vibration, changes to lighting and dust.

The single biggest loss of ancient woodland is at Nor Wood, near Killamarsh, on the Derbyshire/South Yorkshire border (4.1ha). The Trust is continuing to press for the proposed route to be realigned or for tunnelling to be considered in order to save the irreplaceable habitats currently under threat.

Ancient woodland cover stands at just two per cent in the UK. Ancient woods are defined as land that has been continuously wooded since 1600, which makes them irreplaceable. Many are often many centuries older.

The continuity of conditions over hundreds, maybe thousands, of years has led to the development of complex and valuable ecological communities. From deep underground in the soils, through the forest floor, the numerous vegetative layers through to above the tree canopy, the many different species associated with these habitats interact with each other to create one of the most dynamic and wildlife rich ecosystems in the UK. Ancient woods are home to many rare species that require this type of undisturbed, complex habitat. It cannot be recreated, and if lost, we lose them too.

Established in 1972, the Woodland Trust now has over 1,000 sites in its care covering over 22,500 hectares. Access to its woods is free.



PHOTOGRAPH BY ADRIAN ASHWORTH

Hancock's Bank



PHOTOGRAPH BY P LOCKWOOD

Watnall coppice

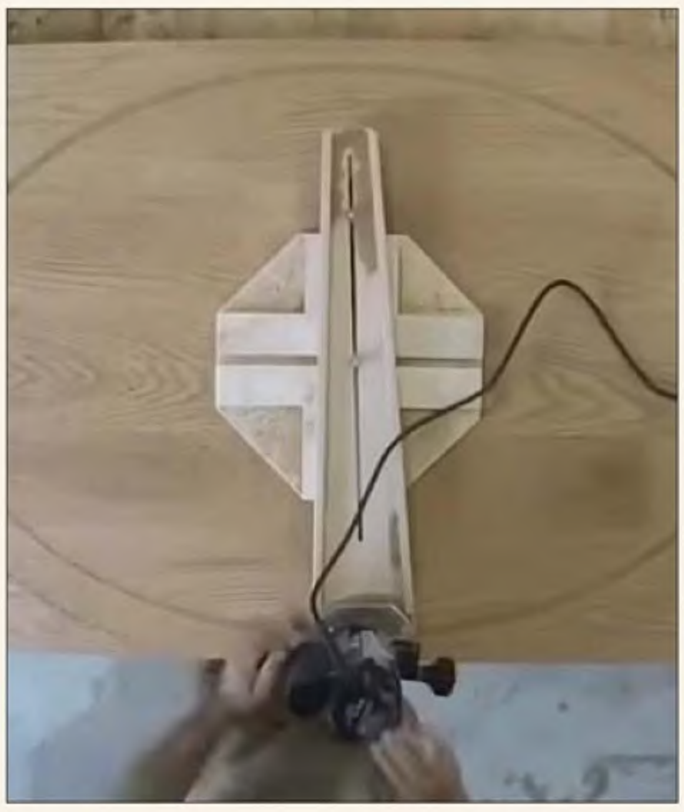
Web links for you

YouTube

Amazing Smart Techniques Woodworking Skills Tools Tips and DIY Beautiful Projects You MUST See

The usual assortment of clever, clever stuff that makes you wish you could impress people the same way...





Twitter

@westdeancollege

Always worth checking out their Twitter feed to see what is currently going on and courses to pick from

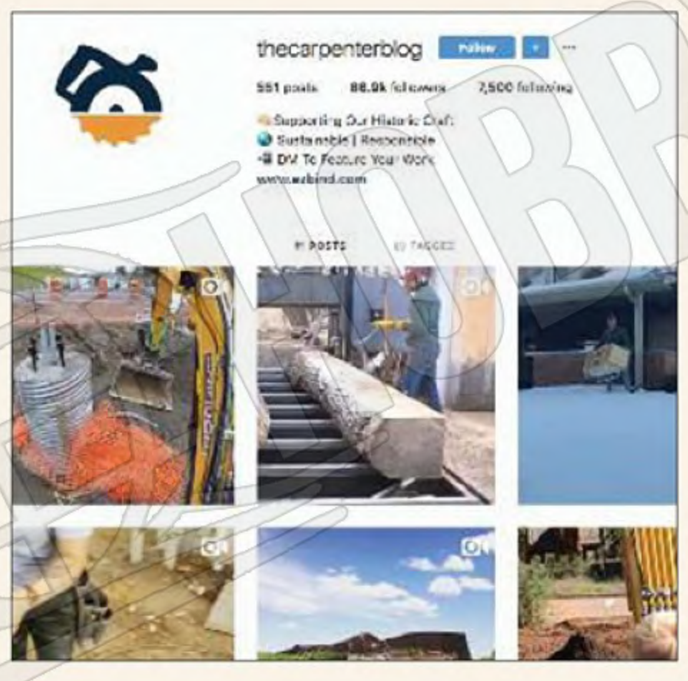


Instagram

@thecarpenterblog

Some interesting tips, tricks and surface detailing to be found here





Events

FFX Tool Show
1-3 March 2019, Kent Event Centre, Detling, Maidstone, ME14 3JF
www.ffx.co.uk/tools/toolshow/

The Midlands Woodworking and Powertool Show
22-23 March 2019, Newark Showground, Notts, NG24 2NY
www.nelton.co.uk/midlands-woodworking-power-tool-show.html

Kitchen cabinet makeover

If your units are looking a bit tired, you may like to try a groovy new door and drawer makeover

Making over a kitchen is a cheaper and infinitely more satisfying way to turn an existing kitchen into a new one without all the added cost and disruption of ripping out everything. Nevertheless it can seem daunting – but follow our guide and you won't go wrong.

Making a jig

It is possible to create a variety of shaped frame tops for kitchen doors – all you need to do is to create a jig. Once the jig is built it can be used over and over again. The A2 Plans give some useful ideas for possible designs. Bear in mind that if you decide to have a tight internal corner where a bearing guided cutter cannot bring it to a sharp meeting, it will have a rounded out shape instead.

This jig is intended to work with a long straight bottom bearing guided cutter on a ½in shank. Take a piece of 18mm MDF and accurately cut it to the final shape of the top rail. This should include any scribe allowance if you are using a profile and scribe cutter set. The shaped portion of the jig needs to be very accurately done so it mirror-matches from left to right or it will look lopsided. A good sharp blade on a reliable bandsaw is best although you can use a jigsaw with the orbit action off, to keep the cut true. Cut as close to the intended line as possible without running over.

Use a curved fine rasp, coarse file or microfile to clean the curves smoothly. Finish using a coarse abrasive and a lengthwise sanding action by hand to give an even surface. Take the jig from the vice and check critically by eye and reshape slightly if needed. The jig is held in place by two long panel pins or nails, the tips should just protrude through. Your jig is now ready to use.

HOBBY NET



Using a pre-sized top rail to mark the template size; mark the curve using a suitable curved object – the oak should overhang the curve by several millimetres



Cut the curve carefully, following the line but not running over it



Often a coarse sanding is enough to create a smooth final shape



Tapping a nail in so the point just breaks through

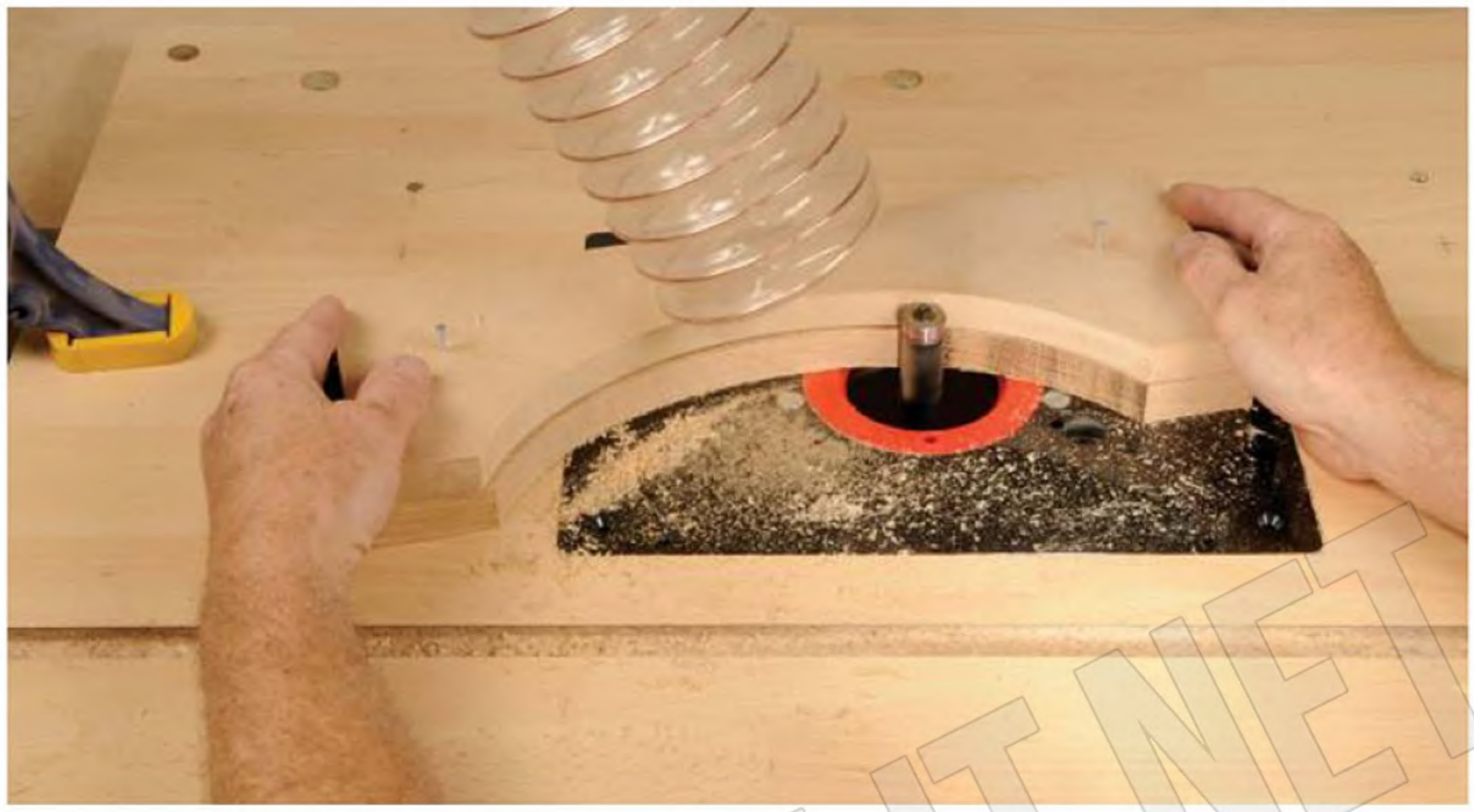


The finished jig with location nails in place

USING THE JIG

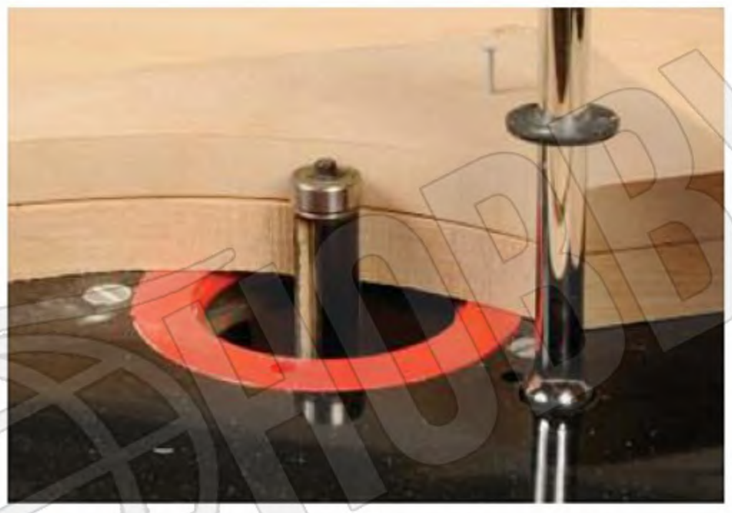


1 The jig is pinned to the pre-shaped oak blank. The curve is wider than the jig as the whole point is to use the jig to trim the curve accurately. The jig and top rail blank are more or less identical, apart from the curve, making it easy to align them.





2 Tap the nails in so the jig beds down properly on the oak blank. The pin holes will be on the reverse of the door after moulding takes place. Matching fine filler will be used to fill the resulting small holes .



3 Fit a 'long and strong' straight cutter, with a bottom-mounted flush bearing in the router table. Adjust carefully until the cutter slightly overlaps onto the jig so the bearing will run totally against the jig surface.



4 The finished top rail now has a clean, even curve, and is ready for profile and scribe machining to create the frame of the door. ➤

MAKING THE DOORS



The only awkward frame components to shape are the door top rails. These are held together with double-sided tape and carefully bandsawn to shape, then trimmed (see pages 32-33)



Do the scribing cuts first but make sure the fence is exactly parallel to the mitre guide slot. Note the subfence to prevent components slipping into the cutter opening

Planning

Kitchen units are standard sizes so the A2 drawings reflect that. They can, however, be resized to suit odd size carcasses.

If you are planning any serious changes to the kitchen layout then you should plot the unit positions on graph paper first.

From this, or by measuring your existing units, you can now work out the number of drawer and door fronts and any decor panels to clad exposed ends of cabinets.

You need to make a list of the overall sizes too – so you can work from this. Exact component size will depend on your chosen construction method.

Profile and scribe

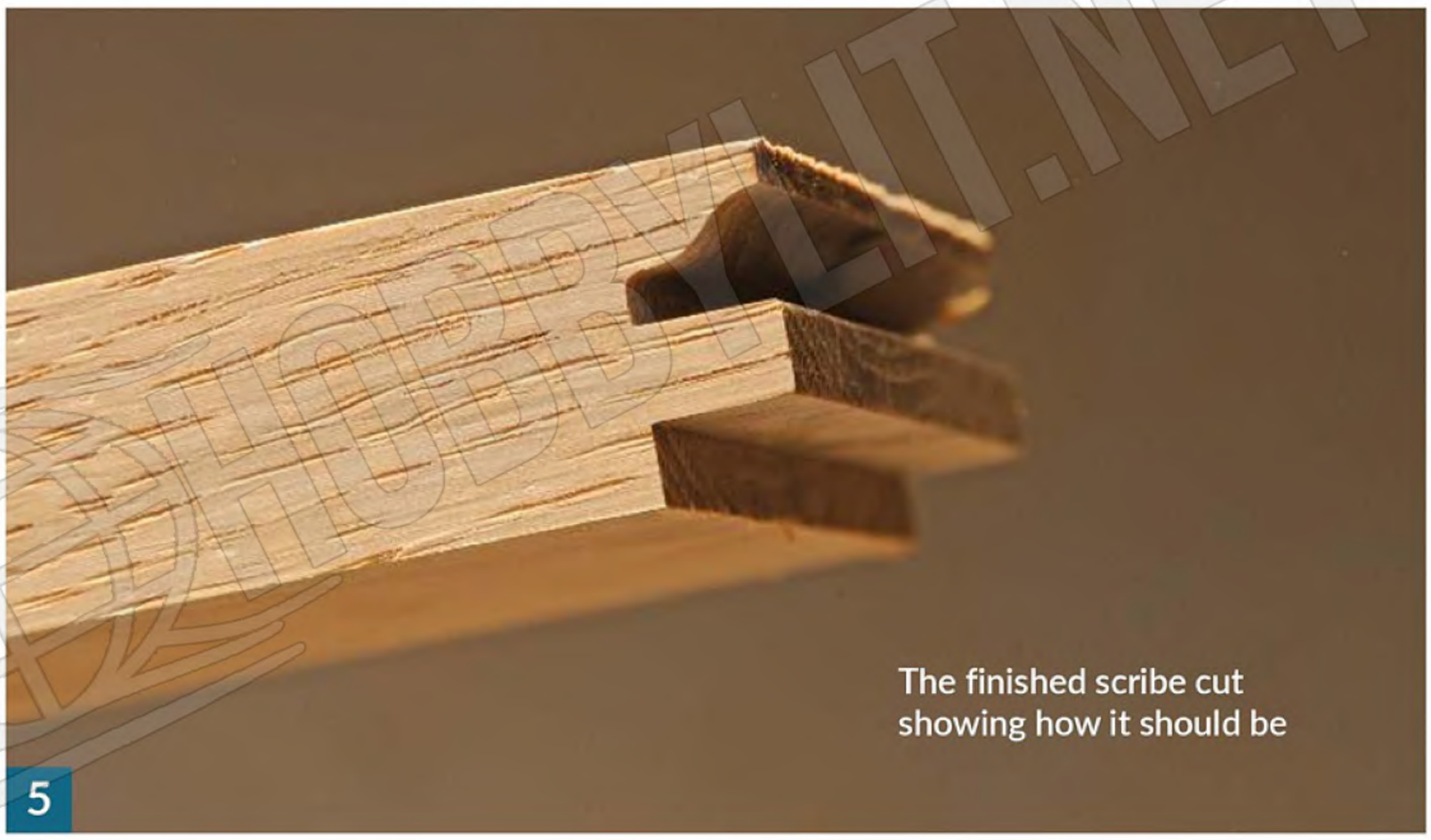
One of the simplest ways is using a profile and scribe cutter set. This uses either a two-part or reversible cutter set, or a single multi-profile cutter. Whichever you use it needs a ½in router mounted in a table. Similarly, if you choose raised panels you need a large two or three wing panel raiser in the router table. Since the horizontal rails plug into the vertical stiles, the typical tongue length on the rails is 19mm overall to be added to the rail dimensions. There are several different moulding styles available and shaped



Check the bearing is flush to the subfence and adjust the cutter until the correct part is opposite the end of the workpiece



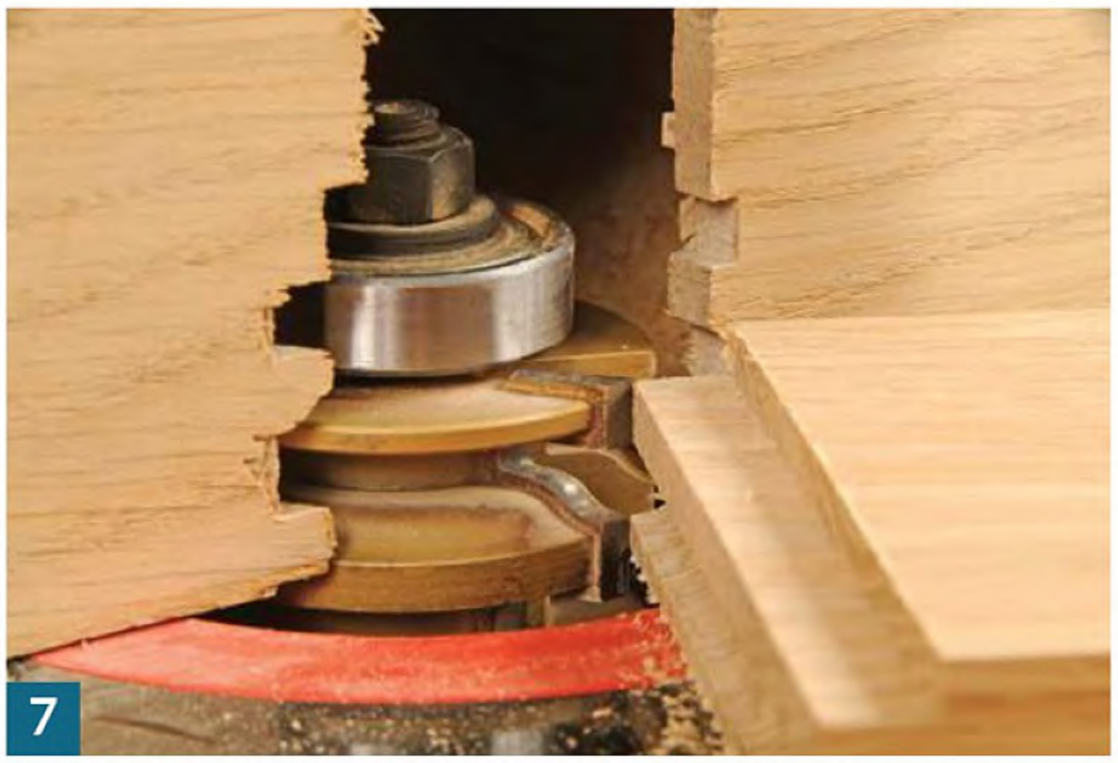
Doing a test scribe cut with a waste section. Note the support behind to reduce breakout



The finished scribe cut showing how it should be



6 Doing the same operation on the already shaped arch top r ail using the mitre subfence to support it properly



7 Start the profile moulding by lining up the mirror image part of the cutter with the already cut scribe part of the joint

shaped top rails are possible because these cutters have bearing guidance **(see page 32-33 onwards for how to make an arch top jig).**

Tongue and groove

This method gives a simple appearance producing a square frame that fits together just like the profile and scribe method. In both these cases, it also creates a groove for a panel, raised or flat, to slip into. The resulting effect with a flat panel is simple and clean lined, and could be described variously as 'country', Shaker, or contemporary, depending on the wood, finish and overall kitchen design. The rail tongue addition is usually 19mm overall to be added to the rail dimensions. You need either a T&G grooving cutter set or straight cutters, both used on the router table.

Dowelled

If you have an accurate dowelling jig you can join the frames with it. However, there is an issue where the stile and rail meet if you want a moulded inner edge. **Method A** – Do a dry assembly with the panel not present and run around with a bearing guided cutter – the bearing must of course not run in the panel slot – and clean the corners square with a sharp chisel to create a mason's mitre. **Method B** – Machine each component separately and do a stopped moulding, usually a chamfer.

Biscuits

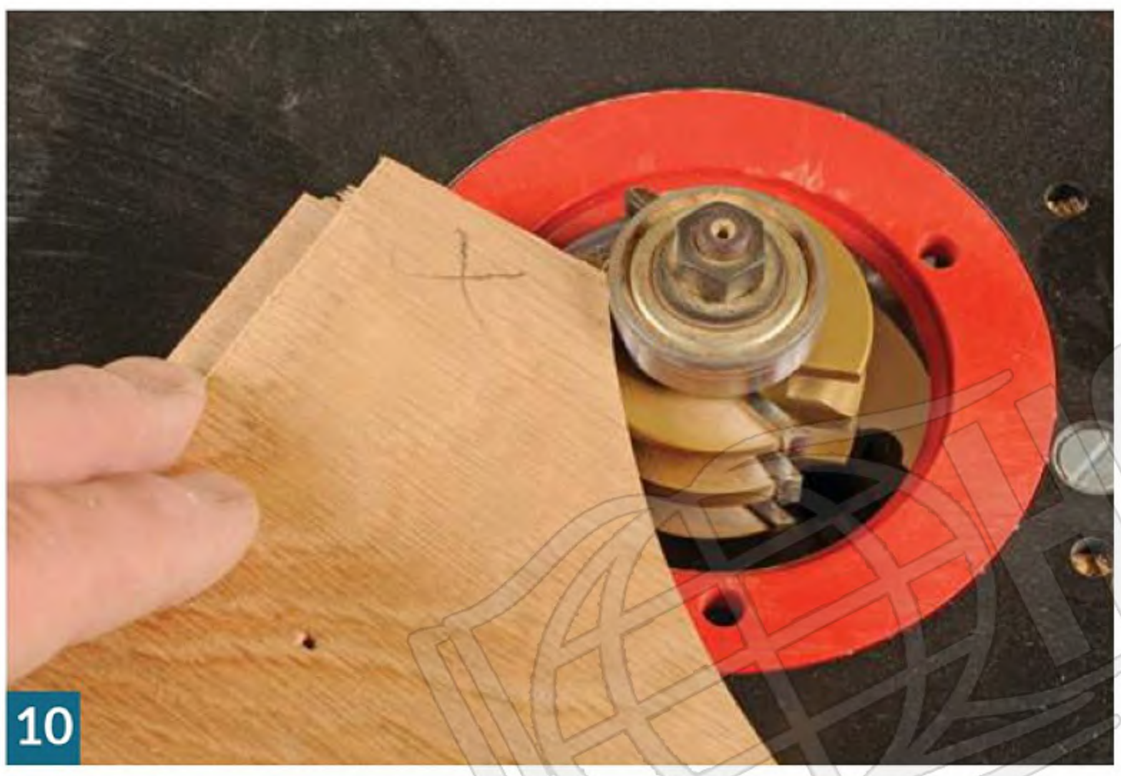
A similar situation to dowelling the joints. You will need size 20 biscuits in stacked pairs to give sufficient strength. A very full size panel will aid stability. To do stacked slots you will need a packer to sit the jointer on for the top slot, or turn the stock over. A static jointer set-up is sensible for consistent results and safe working. Ensure components are wide enough to receive a 20 size slot without it breaking out. ➤



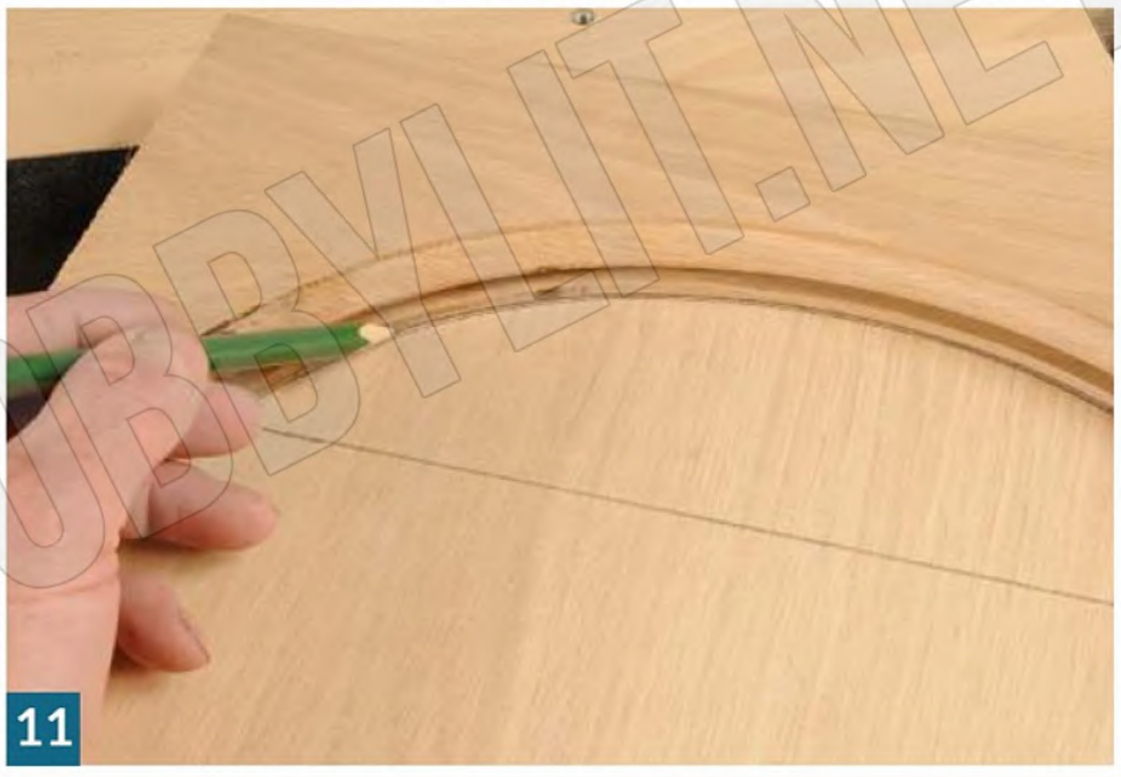
8 To avoid machining mistakes, place components with the 'seen' and to-be-moulded side downwards. Mark the 'up' side on all components next to the edges that will be moulded.



9 Do a test cut and check the faces are flush across the joint



10 Machine the arch shape by bringing the left-hand tip of the arch (reverse face showing) into the cutter and moving it in a smooth motion across the cutter, keeping it pressed against the bearing



11 Marking out the arch shape on a panel blank. Next add an arc 9.5mm larger and increase the shoulder height by the same amount – this will be the tongue that fits in the frame groove

PDFBYIT.NET



12 Carefully cut out the arch and shoulders on the bandsaw, keeping close to the line

Door hinges

You need to be able to accurately insert modern Euro pattern hinges into the reverse of the doors. Set out the positions to match the mounting holes in the carcass. To do the drilling, a 35mm hinge sinking bit is required. It must be mounted in a pillar drill with a sub table fitted for the doors to lie on while you do it. Some hinge sinkers will fit in a large router with a matching collet installed, often 10mm in size.

Drawer fronts

These are smaller versions of the doors except it may not be possible to use the same construction method if you have a fancy shape on the doors. Instead it may be better to have a single solid drawer panel, possibly with breadboard ends to keep it flat, and then plant a separately moulded front piece onto it. This will be made using a template pinned to the blank and machined on the router table. The drawer fronts need to be screwed onto the drawer boxes, leaving an even gap all around.



13 Right: A one-part profile and scribe cutter (left), an ovolo panel raiser with a back cutter to form the tongue (centre) and a tongue and groove cutter (right)

Finishing

Almost any type of finish is possible but the more easy to clean, the better. Varnish, paint or Danish or other oils are all suitable.

Use several coats and rub down between coats for a smooth finish.

Fitting

The drawer fronts are mounted from within the drawer boxes using four screws countersunk into the drawer box. Double tape the fronts on first so you get the position right, then open the drawer and screw in place.

Doors

Screw the hinges into the holes on the doors but fit the mounting plates separately inside the carcass. Mount the hinges to the plates and adjust the fit. Be aware that where two hinges mount either side of a divider, they will need more offset, and hinges are made specifically for that purpose or there are alternative mounting plates. ■



14 Machining the straight panel edges with the blank face down



15 An unusual answer for machining the arch shape using the cutter opening to help 'lead in' and avoid the panel being kicked away by the force of the cutter. Once the coarse cut is done, remove the fence and freehand the last bit, running against the bearing



16 The finished panel ready for sanding prior to assembly



17 The finished door and drawer fronts clamped up. The horns will be sawn off once dry

ARTS & CRAFTS THISTLE

Steve Bisco carves a stylised piece, inspired by the Arts & Crafts movement



PHOTOGRAPHS BY STEVE BISCO

The thistle is one of the most easily recognisable wild plants of the British countryside, with its spiny leaves and bulbous flowerhead, so it is not surprising that it's widely used as a decorative It has a particular relevance to Scotland, where it has been the national heraldic symbol since the 13th century. According to legend, an invading Viking army was creeping up on a Scottish army's encampment one night when one of the barefooted Vikings trod on a prickly thistle, causing him to cry out and alert the Scots to the ambush.

The craftspeople of the late-19th-century Arts & Crafts movement took their inspiration from the flora of the countryside and much of their work was based on native plants, either in natural or stylised form. The Arts & Crafts style was contemporary with the Art Nouveau style and shared many of its design features, although in a simpler form which emphasised the qualities of the traditional materials used and showed more clearly the hand of the maker.

I have drawn up this design in the spirit of the style and the period, with the simple low-profile decoration typical of Arts & Crafts, and the double elbow bends at the 'root end' of the stem so often found in Art Nouveau. I have, perhaps less typically, designed this as a 'pierced' carving rather than a solid panel as it looks much lighter and prettier as a wall decoration. Arts & Crafts woodcarvers worked mainly in oak (*Quercus robur*) so I have kept to that tradition in this project. ➤

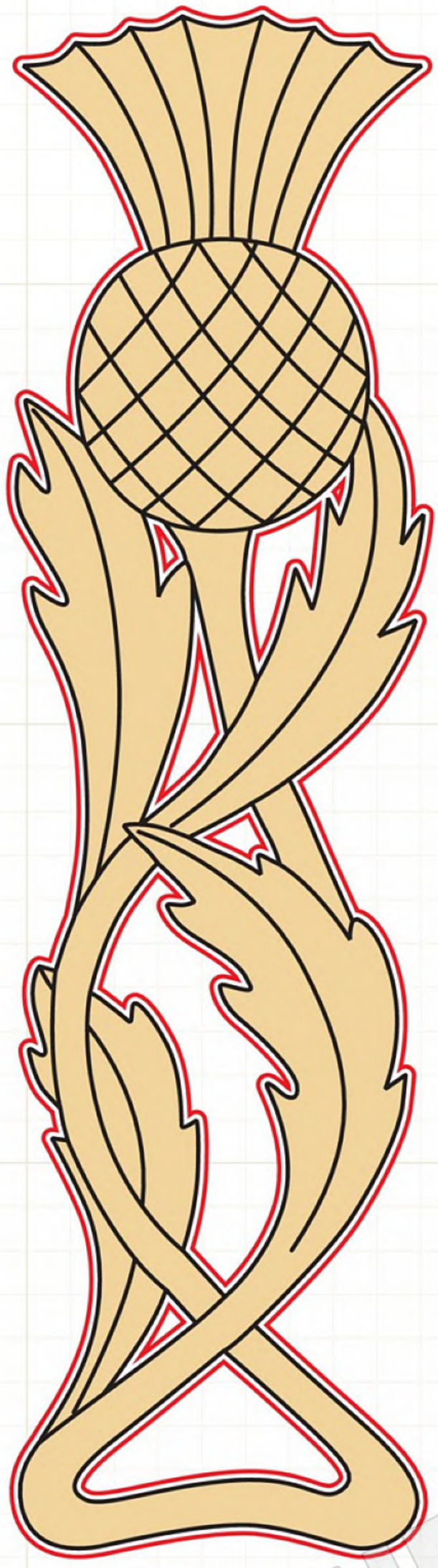
Things you will need...

Tools

- Jigsaw
- No.3, 20mm fishtail gouge
- No.3, 10mm fishtail gouge
- No.3, 10mm gouge
- No.8, 8mm gouge
- No.5, 7mm gouge
- No.9, 16mm curved gouge
- No.8, 8mm curved gouge
- 12mm back-bent gouge
- Straight V-tool
- 2mm veiner
- 25mm flat chisel
- 10mm skew chisel
- 6.5mm flat chisel
- 3mm chisel

Material

- Oak – 380 x 100 x 18mm
- Wax polish – Antiquax natural



Pierced carvings

A pierced carving is one where the background is completely cut away right through the board. Pierced carvings look lighter and livelier than a solid board, the pattern outlines are fixed at the start, and you don't need to 'ground out' the background. Undercutting is easier as you can get at all the elements from behind. Piercing is done by drilling access holes for a jigsaw or scrollsaw blade in order to cut out the voids. You need to be careful of cutting out the wrong bits, so mark your cutting lines in red and your drilling points with a cross. Use a very narrow jigsaw blade, preferably 5mm. This will get you round the tight curves and you will only need a 5mm drill hole.



The Arts & Crafts movement

The Arts & Crafts movement, influential from around 1880 to World War I, was not just a new decorative style. At its heart was an evangelical group of artists, architects and craftspeople who believed that the 'modern' Victorian world of industrialisation and mass production threatened traditional skills and robbed manual labour of its dignity. The 'craftsperson' was being replaced by factory workers who used machines to repeatedly perform just one small task in a production line that separated them from the finished product. Socially-minded thinkers such as William Morris led the Arts & Crafts movement in a crusade to produce beautiful objects using traditional methods and traditional materials, where the hand of the individual artisan could be seen in the finished object. Central to their principles was the use of simple forms with no extravagant decoration, made from traditional and natural materials, with the method of its construction clearly visible. The flora and fauna of the British countryside was the inspiration for their designs, and oak was the favoured timber for most woodwork.

Handy hints

1. To create the full period effect of the Arts & Crafts style you should have a good finish straight from the tools, so make your finishing cuts by 'planing' over each surface with a gouge that corresponds most closely to the shape of that surface.
2. When you are going for a waxed and tooled finish it is important to keep the wood clean. Wear carving gloves, and only use a wax pencil to draw on the wood – graphite will get ground in and will make the wood grubby.

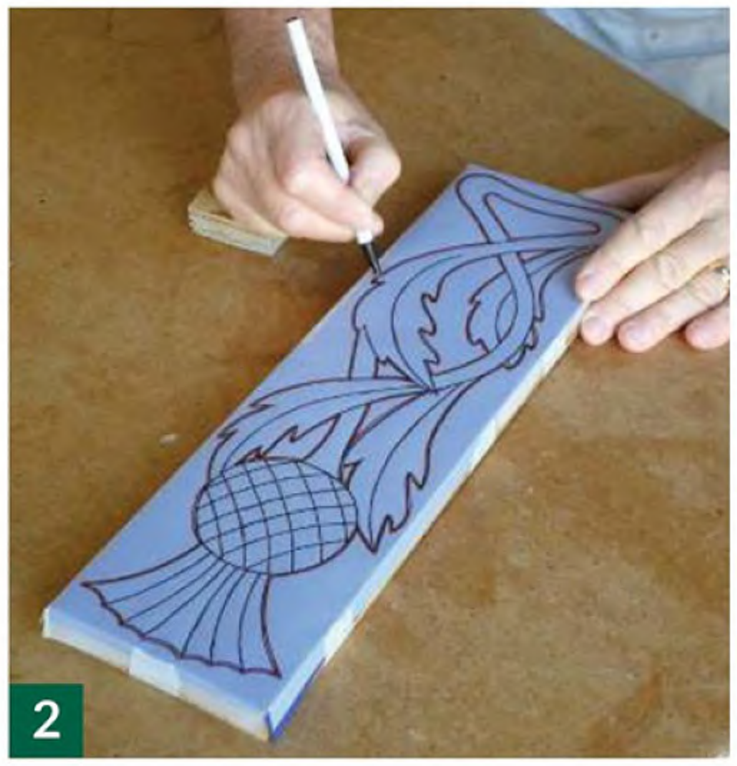
WOODWORKERSINSTITUTE.COM

Preparing the pierced panel

1 Get a piece of oak 380 x 100 x 18mm, or whatever size suits you best. Green oak, air dried for one to three years, is easier to carve than kiln-dried oak and gives a better finish. Select a piece that is fairly straight grained and free of knots. Make a full-size copy of the pattern and get some carbon paper.


1

2 Lay the carbon paper on the wood and fix the drawing firmly in place with tape. Press firmly as you trace the lines.


2

3 Mark your cutting lines in red so you don't get lost with the jigsaw. Clearly mark the internal voids.


3

4 Use a jigsaw to cut out the internal voids. Hold the work in a vice so the underside is clear. Drill entry holes first, and be aware that the jigsaw blade may flex a little in the curves. Use a 5mm blade to get around the tight curves – it will get very hot and will scorch the wood, so keep it moving as much as possible.


4

5 Continue with the jigsaw to cut the outer edges, clamping the board so it overhangs the bench. You can also use a scrollsaw or bandsaw to do this if you have one.



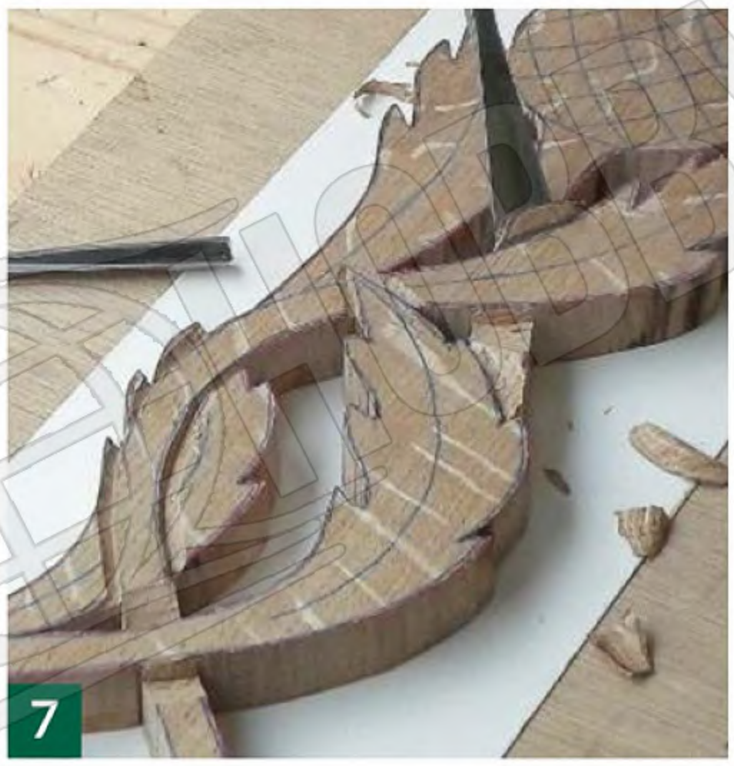
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6 Work holding can be tricky on a pierced carving as there is not much to screw into or clamp on to. It is best to paste it on to a piece of card, then on to a backing board, using glue or sanding sealer. Screw or clamp the backing board to the bench and you are ready to start carving.


6

Setting the levels

7 First, we need to see what's what. Use a V-tool to separate the leaves from the stems and flowerhead, then use a shallow gouge to cut out a wedge on the lower side of each overlap in the stems so we can clearly see which goes under and which goes over.


7

8 Cut down the surface of the leaf on the lower left side to about 10mm thick to give room to lower the stem. ➤


8

9 Reduce the level of the lower half of the stem so that it slopes from the middle leaf down to the bottom left corner, then across to the right and back up under itself to just below the middle leaf tip.


9

10 Continue the flow of the left-hand stem up into the two upper leaves, maintaining the line and level as it passes under the middle leaf tip. Reduce the level of the upper leaves so they are about 8mm thick where they join the flower head. Now lower the central stem to flow down from the flower head, passing under the upper right leaf, disappearing under the lower right leaf and appearing to join the lower stem under the leaf.


10

11 Finish roughing out the levels by rounding over the edges of the flower head, then sloping the fan of petals into it. Note that only the middle right leaf, the centre of the flowerhead and the top of the fan of petals remain at the original board surface.


11

Carving the detail

12 Return now to the middle right leaf. Form its final shape by cutting a deep V-groove along the vein line with a V-tool, then use an inverted shallow gouge to slope the sides away from the vein. Refine the levels to create a smooth flow from the leaf tip down into the stem at the crossover.


12

13 Repeat the process on the other three leaves. Carefully redraw the vein lines with a wax pencil to make sure you don't lose the flow of the pattern. With the bottom left leaf, take particular care to follow through the line and level of the vein and the curve of the leaf surfaces as it flows under the stem. A back-bent gouge is handy here.


13

14 Refine the line of the leaf edges and remove any jigsaw scorch marks with a skew chisel. Use a sharp gouge and a 2mm veiner to finish the 'spikes' and 'eyes' in the leaf edges.


14

15 Now it's time to finish the stem. Use a skew chisel to refine the edges so the stem is the right width and curves smoothly along its length. Use a No.8, 8mm gouge, then a shallower gouge, to form the hollow groove, working a shaving at a time so you don't crumble the edges. Finally,


15

round over the outer edges by running along them with a shallow gouge.

16 Moving on to the flower head, refine the shape into a flattened ball. Take a 25mm flat chisel and mark in the slightly curved diaper pattern of the 'scales'.

17 Use the skew chisel and a shallow fishtail gouge to carve the scales so they overlap from bottom to top.

18 Now we have to carve the fan of curving flutes that represents the long thin petals of the thistle. Use the No.8 gouge to cut the middle of each groove then, working carefully with the grain, work out towards the edge of the groove and use a shallower gouge to create a sharp ridge where it meets the next groove. Each groove must curve gracefully outwards. Carefully cut semi-circles at the top edge of each groove to finish the fan.

Undercutting and finishing

19 Finish the carving to a good tooled finish without using abrasives, then prise it off the backing board by sliding a flat knife between the wood and the card. Scrape off all remaining paper and glue from the back.

20 Place the carving face down on a soft surface and carefully undercut the edges and underparts of the leaves and stems so they will all appear to be a similar thickness from the front. The leaf edges should be about 6mm thick. Make a hanging hole in the back of the flowerhead. Wear carving gloves to protect your hands now that the carving is not secured.

21 Finish by polishing the whole panel with a good, light-brown wax polish to bring out the natural colour of the oak. Use a small, stiff brush to work the wax into all the crevices, then buff it up to a soft sheen with a dry cloth.

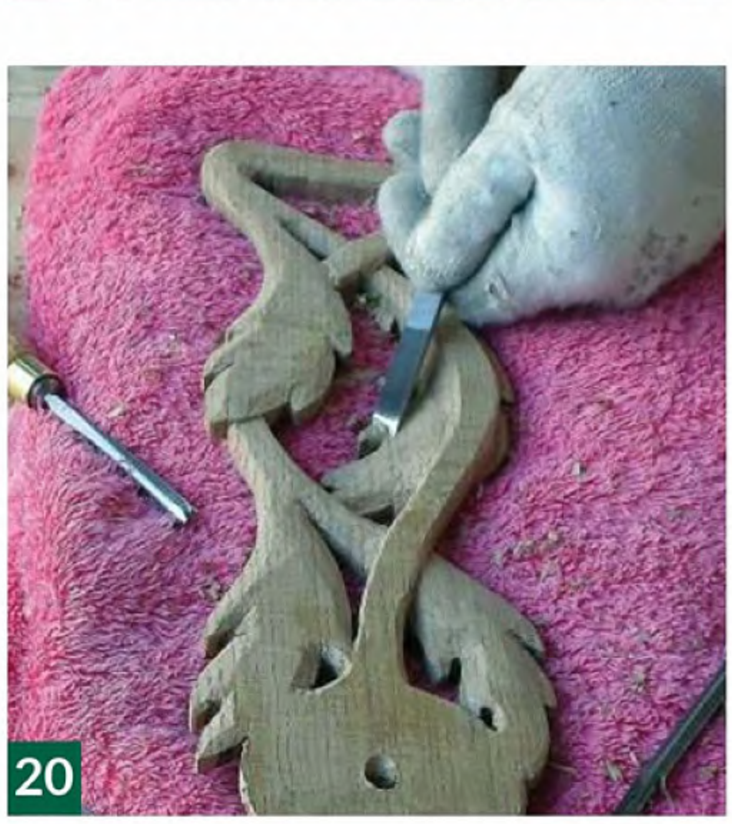
22 The Arts & Crafts thistle is now complete and can be hung on the wall to be admired by passing Scots. ■


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17


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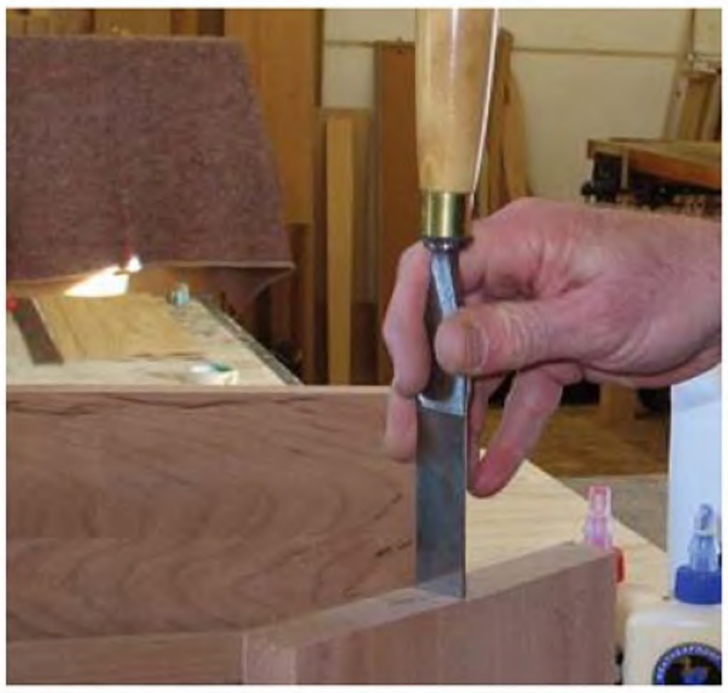
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22





Adding a date to the bottle will remind you when it's time to replace it with fresh glue



Glue can be checked for strength by using a chisel to try to split the wood along the glue line

Sticky fingers

John Lloyd has a selection of top tips for stress-free glue-ups

Glue

When you're thinking about glue, bear in mind that even the most exotic formulation is likely to only represent a small proportion of the overall material costs for any project. It is also the vital thing that's going to hold all of those lovingly hand-crafted pieces of wood together. So don't be seduced by that 50-litre bargain buy. Quite apart from anything else, glues have a shelf life, and some of them are remarkably short; so as a general rule, buy the right glue for the job, even if it's expensive, preferably in smallish quantities. With this in mind, it's a good plan to add a date to the container as it comes into the workshop, read the label and check for a 'use by' date or guidance on life expectancy, it's usually somewhere between three months and two years! If you're unsure whether the glue you have is still going to cut the mustard, you could always do a test glue-up on a couple of pieces of scrap. Just prepare the surfaces, glue and cramp, then try to split the joint along the glue line with a chisel. If it makes a clean break right along the glue line, the glue has failed; what you want to see is a nasty splintered mess where the wood breaks around the glue line – as it says on the bottle, the glue should be 'Stronger than the wood itself'. If in any doubt, bin it and buy some more; the prospect of glue failure is just way too traumatic to even contemplate.

You may have your favourite, general purpose glue that you've used for years, you might enjoy the clinical precision of weighing, combined with the 'custard making' process, required to prepare a 'UF' glue like Cascamite. You might even be seduced by the romance of mixing and heating animal glue. All of these options have their place, but remember, there's actually a reason, beyond the commercial appetites of marketing departments, that there are so many different types of glue. Some glues are better at doing things than others, they have various properties; they might be water based or solvent based. There will be wildly different open times and set times, some will be gap-filling, others will creep. Temperature sensitivity can be vitally important; 'white' and 'yellow' glues generally don't like the cold but set worryingly quickly when it's hot. Some are only for internal use while others will happily resist the rigours of an Arctic, seawater environment.

There's a D1 to D4 'Durability' classification, indicating how waterproof a glue is, but I find that other properties that are signified by this classification are more important to me as a furniture maker. If I want a glue to allow a little 'creep' or 'give' in a joint, I will opt for a D1, but for a stiffer joint, a cross-linking D3 glue would be good. But for any external work, if I really want to avoid sleepless nights, I would use a completely reliable boatbuilding glue such as West System epoxy, not a D4 PVA.

I will often use two or three different types of glue for any given making project. Choice of glue might take into account ambient temperature – PVAs just don't work when it gets cold and set way too fast when it's hot, but otherwise they're very user-friendly for many unchallenging glue-ups. A complex assembly needs a glue with a long open time – maybe a UF or even fish glue. A tightly curved lamination in solid wood needs something completely reliable that sets like concrete; perhaps a boatbuilding glue, like West System epoxy.

As new glues come along I occasionally change my preferences

for specific gluing challenges. For a long time I just used Cascamite when laminating strips of solid wood. This is a glue that has endured a bit of an identity crisis changing from 'Cascamite' to 'Extramite' to 'Polymite' and back to 'Cascamite' again, another fine piece of work by the marketing department. UF glues don't 'creep' and are strong enough to hold boats together, so they must be the perfect choice for laminating chair legs, mustn't they? But UF glues aren't good for your skin; the powdered glue and the water need weighing accurately and there's always the chance of mixing too much or, worse, too little – and if moisture has got into the powder while it's being stored it won't set properly. In short, it's a great glue that's very strong and has a reasonably long open time, but it has a long set time and can be a little bit of a pain. Recently we've been trying Titebond 'Extend' for solid wood laminating with excellent results. I wouldn't use it for laminates under large amounts of tension or general gluing duties around the workshop; it's just a bit 'gloopy', but for general laminating, and if you need a bit more time, this is pre-mixed, water washable, stress-free happiness in a bottle.

Another excellent UF glue is the version that's a pre-mixed resin with a powder hardener. It's an expensive glue with a short shelf life, but it's possible to control the set time with the quantity of hardener used, and it doesn't add any water to the surfaces being glued. This can be a huge benefit



Powdered UF glues must have the powder and water measured accurately to ensure success



The 'custard technique' of adding only half the water for the initial mix avoids embarrassing lumps



A glue brush will perform much better after a hair cut



A nasty ragged break shows that the glue is still 'stronger than the wood itself'

if you want to avoid problems with wood expanding during the gluing process; perhaps when assembling and pressing very thin laminates. It's still water-washable though, making it really user friendly.

Epoxy is an impressively muscular glue, but accurate mixing, long set times, unpleasant fumes and the risk of causing skin problems mean that this is not a glue that I would want to be using on a daily basis. But when you need a mighty glue that can fill gaps and maintain its remarkable strength across the glue line, epoxy can sometimes be the only real choice.

Polyurethane is another glue that is not particularly pleasant to use, famous for the 'black finger' effect – although this can be avoided by wearing gloves or can be removed with acetone. Generally it doesn't mind the cold or the wet, so sometimes it's appropriate, but it always needs cramping because it foams and expands as it cures.

At the end of the day, the easy glue choice is always going to be a PVA, whether it's a 'white glue' or a Titebond aliphatic resin, but don't turn your back on the other glues, and don't be frightened to use several different glues on one project. An informed, considered glue choice will often be the key to controlling stress levels.



A tongue depresser is an excellent spreading tool!



A notched spreader is great for fast, even spreading over a large area



Gloss paint rollers work well once they are full of glue



The Rolls Royce of glue spreaders from Lamello

Spreading

I generally go for a reasonable spread of glue on both surfaces – the last thing I want is glue starvation. I always want to see that comforting line of glue squeeze-out along the joint. Moving with calm, but swift, precision is what you're after and the correct choice of applicator will help with this endeavour. For small areas I quite like those little disposable brushes that come all the way from Taiwan, but the bristles, which are far too long and floppy, need a trim with a pair of scissors to stiffen them up. If you know anyone in the medical profession, see if they can supply some tongue depressors; the plastic ones are best but now they seem to have mainly switched to wood. Gluing biscuits, obviously not the chocolate variety, can be a bit of a time-consuming fiddle. ■

PREVIEW



Mary Rose off Southsea Castle as depicted on the day of her loss by the renowned historical marine artist Geoff Hunt, PPRSMA

PHOTOGRAPHS COURTESY OF THE MARY ROSE TRUST EXCEPT WHERE OTHERWISE STATED

The Mary Rose

Richard Johnstone-Bryden brings us right up to date with the history and conservation of this iconic Tudor warship

Once a firm favourite of King Henry VIII, the sole surviving Tudor warship *Mary Rose* has been preserved in Portsmouth Dockyard, beside Lord Nelson's flagship HMS *Victory*, since her wreck was recovered from the murky waters of the Solent in 1982. Today, she is one of the world's most historic ships, which together with the extensive collection of artefacts salvaged from her wreck, shine a unique light on Tudor life.

Design evolution

For a warship that symbolises King Henry VIII's fleet, it seems only fitting that the origins of her story date back to the beginning of his reign when he embarked on the expansion of the English navy to counter the threat posed by France and Scotland. Records appear to show that Henry VIII authorised the construction of the 150ft *Mary Rose* on 29 January 1510. Her design represented an important turning point in the evolution of warships both in terms of the method of construction and the main armament. Previously, the hulls of England's warships were formed using clinker construction which involves the fitting of overlapping wooden planks to timber frames to create a step-like outer profile. In contrast, the oak planking of *Mary Rose*'s hull was fitted edge to edge which is known as carvel construction and produces a smooth appearance. This change in building technique enabled larger more heavily armed ships to be built while the fitting of more than one mast and the use of several sails increased the manoeuvrability of vessels like *Mary Rose*.

Hearts of oak

The precise details of her construction have been lost to the mists of time, although it is known that 36 acres of woodland was cleared to obtain the 600 large oak trees that were required to build *Mary Rose* in Portsmouth. According to the records, she appears to have been launched by July 1511 and brought round to the Thames where she received cannons from the Royal armoury in the Tower of London as part of the final fitting-out work. On completion in 1512, she became the flagship of the recently appointed Lord High Admiral Sir Edward Howard. Despite the absence of a ship's log, a great deal of information about *Mary Rose*'s operational history is contained within the surviving correspondence between the embarked admirals to the King and senior Government officials.

The surviving starboard side section of *Mary Rose*'s hull

In the course of her action-packed career, *Mary Rose* fought against the French in three wars and supported the army when it defeated the Scottish King James IV at the battle of Flodden.

Final engagement

Her final engagement took place in the Solent on 19 July 1545 as the French fleet tried to mount an invasion with approximately 40,000 troops. The odds seemed hopelessly stacked against the 10,000 English soldiers gathered in Southsea under the personal command of Henry VIII. However, before the French could step ashore, their warships had to fight their way past the English fleet in the Solent under the command of Viscount Lisle in Henry Grace à Dieu.

Disaster before the King

Initially, the English ships were becalmed, which provided the agile French rowing galleys with the chance to attack. However, the strengthening winds in the afternoon enabled the English warships to hoist their sails and directly engage their adversaries. While manoeuvring into a favourable position to take on the French galleys, the heavily laden *Mary Rose* suddenly heeled over too sharply in a gust of wind and plunged the lowest row of open gun ports below the surface. Inevitably, the sea flooded in and caused her to capsize. The majority of her men stood little chance of escape and were trapped below decks by anti-boarding nets while many of the soldiers above decks were wearing heavy chain mail jerkins that dragged them below the surface. Sitting on horseback on Southsea Common, the King could hear the cries of the drowning men and watched in disbelief as his beloved warship foundered with the loss of nearly 400 men.

Failed salvage

Despite the blow, the English fleet prevailed and within days The Duke of Suffolk had been appointed to oversee the salvage of *Mary Rose* from the shallow waters of the Solent using Venetian seaman. An ambitious plan to pass ropes underneath the hull and attach them to empty hulks at low water so that the wreck could be lifted on a rising tide ultimately proved unsuccessful. For nearly three centuries *Mary Rose* was left to rest in peace until the divers John and Charles Deane were hired by local fishermen in 1836 to disentangle their nets from an underwater obstruction.

The world looks on

Thankfully, their exploits did not disturb the majority of the wreck which survived in a silt-filled valley. The rapid build-up of silt over the inner surface of the hull's starboard side formed a protective layer that preserved the bulk of the ship's contents before the port side eventually collapsed and disintegrated. The ship's final rediscovery was instigated by the historian and amateur diver Alexander Mckee who enlisted the help of the British Sub-Aqua Club's Southsea branch in 1965. ➤



Mary Rose was raised from the murky waters of the Solent in front of a worldwide TV audience of 60 million people on 11 October 1982

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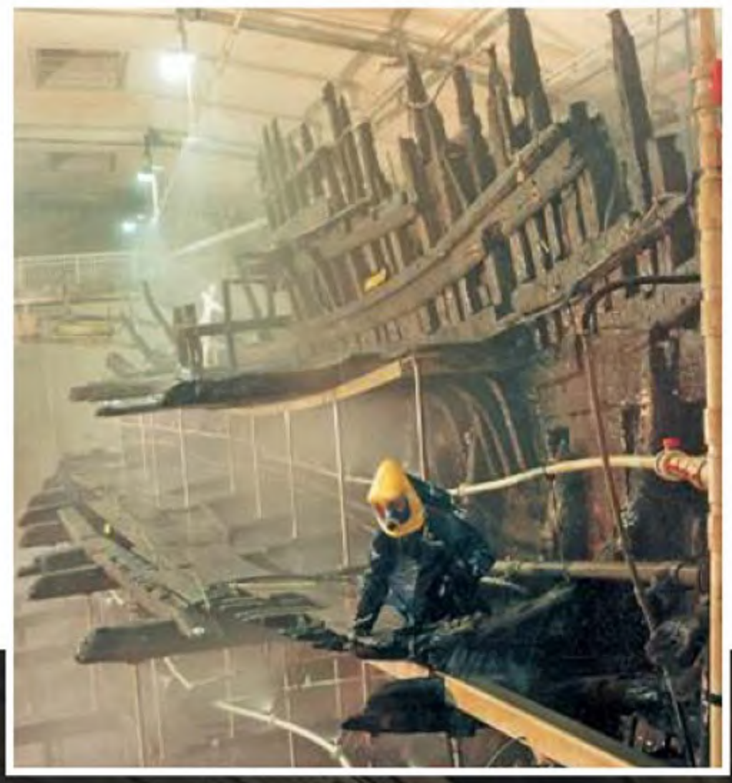
The museum has the world's biggest collection of Tudor artefacts



The timber exterior of the new purpose built Mary Rose Museum. The low profile shell-shaped metal roof reduces the internal volume of space which has to be environmentally controlled to precise standards to ensure the conservation of the hull

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Their efforts led to the discovery of a 60ft section of the Tudor warship's framing by Percy Ackland on 5 May 1971. The subsequent recording and recovery work received the Royal seal of approval when The Prince of Wales dived on the wreck for the first time on 30 July 1974, which provided a dramatic boost to the fund-raising campaign that culminated in her salvage by the Mary Rose Trust on 11 October 1982.



Left: For 19 years, the surviving portion of the hull was sprayed with water-based wax polyethylene glycol

Final resting place

The Ministry of Defence offered the use of the 18th-century No.3 dry dock to accommodate the wreck along with the No.5 Boathouse for the display of the recovered artefacts. The enclosure of the dry dock by a temporary Spandrel building provided a controlled environment for the active conservation of the hull which commenced with the constant spraying of cold water at a temperature of less than 5°C to prevent the wood drying out and to inhibit bacterial activity. The process entered a new phase in 1994 when the Trust started spraying the hull with the water-based wax polyethylene glycol (PEG) which penetrates to the core of the wood prior to sealing the timber's surface. The switching off of the high pressure spray jets at the end of April 2013 triggered the beginning of an air drying programme to set the transparent wax coating and remove 100 tons of water.

The museum

A month later, the Trust officially opened the ship's purpose built museum which enabled *Mary Rose* to be displayed together with her artefacts under the same roof for the first time. Wilkinson Eyre Architects devised the plan to display the original starboard side opposite a recreation of the missing portside in which original artefacts would be exhibited in their appropriate context. The end result recreates the feel of being on board a dimly lit Tudor warship with three walkways situated between the two halves that follow the position of the original decks. Further artefacts are displayed in the end galleries to provide visitors with an incredible insight into Tudor life covering everything from personal belongings such as gambling dice, leather shoes, musical instruments, Rosary beads and wooden bowls through to a gimballed steering compass and the earliest



A virtual hull was constructed to represent the missing port side. Visitors to the museum walk in between the conserved starboard section of the hull and the virtual hull on three levels, seeing all the main shipboard material in context as though they are on board *Mary Rose*



Many of the 19,000 recovered wreck artefacts that are on display in the museum

known basket hilt sword. Choosing highlights of this collection is virtually impossible, yet its value can not be underestimated, not least, because several of its artefacts have helped historians to fill in significant gaps in our understanding of daily life in the Tudor period and medieval history as a whole. For example, the recovery of 130 complete longbows provided the first evidence of what the medieval long bow looked like along with an accurate indication of the weapon's range and lethality.

Panoramic views

On completion of the air drying programme, the Trust closed the museum for six months in 2016 while the bulky drying ducts were removed. Since then, visitors have been able to enjoy stunning panoramic views of the ship from all nine galleries through floor-to-ceiling glazing on the lower and main decks. On the upper deck visitors enter the Weston Ship Hall via an airlock and are only separated from the ship by a glass balcony. The uninterrupted views of the wreck also enabled the Trust to produce a series of CGI displays recreating typical daily life in different parts of the ship, that are projected directly on to the appropriate part of the ship, as part of the museum's dramatic lighting sequence. The result provides visitors with a superb glimpse of life in this iconic ship which is well worth a visit.

For more information about *Mary Rose*'s history, opening times and ticket prices, go to **www.historicdockyard.co.uk** or call **023 9283 9766.**

Mary Rose Timeline



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

1510 29 January – *Mary Rose* is ordered.

1510 Construction begins in Portsmouth on virtually the same location where she now rests.

1511 *Mary Rose* is launched.

1512-14 *Mary Rose* – flagship of King Henry VIII's fleet – fights her first battle leading an attack on a French fleet. Her captain called her 'the noblest ship of sail'.

1520 *Mary Rose* formed part of Henry's escort when he crossed the English Channel to meet the French King, Francis I just outside of Calais in the Field of the Cloth of Gold.

1522 30 June, *Mary Rose* led the English fleet towards France and three days later they captured the French port of Morlaix.

1526/27 Preparations are made in 1526 for *Mary Rose*'s refit when the King purchased 9 acres of land to dig out a new dock and to build storehouses. Her refit is underway in the summer of 1527.

1536 *Mary Rose* undergoes a further refit.

1545 19 July, the Battle of the Solent. *Mary Rose* sinks during the afternoon while leading the attack on the French invasion fleet.

1545-49 Venetian salvors attempt to raise the wreck. Although unsuccessful, they do recover sails, parts of the masts, the rigging and some of her guns.

1836 John and Charles Deane rediscover the wreck site and raise items including a number of guns.

1965 Alexander McKee begins the hunt for *Mary Rose*.

1967 Sonar investigations locate a large anomaly beneath the seabed and the Mary Rose (1967) Committee was formed.

1970 An iron gun similar to those recovered by John Deane found.

1971 Divers see the first exposed timbers and the site is identified as the '*Mary Rose*'.

1974 *Mary Rose* was designated under the Protection of Wrecks Act.

1979 The Mary Rose Trust was formed with the remit, 'to find, excavate, raise and preserve for all time such remains of the ship *Mary Rose* as may be of historical or archaeological interest'.

1979-82 Maritime Archaeologist Margaret Rule leads the project to excavate the ship's contents.

1982 11 October, 60 million people watch the raising of the wreck on live TV.

1985 The hull is turned upright and a series of titanium props are installed to support the internal structure. This enables the archaeologists to begin to replace some of over 3,000 timbers which have been recovered underwater. The longest was a plank 7 metres long, while the largest single element was the rudder which weighed 750 kilograms.

1994-2013 On 30 September 1994 active conservation work commences on the hull, which is sprayed with polyethylene glycol (PEG), a water-soluble wax.

2003-05 Divers return to the wreck site for three dive seasons.

2010 11 October, construction of the new museum begins.

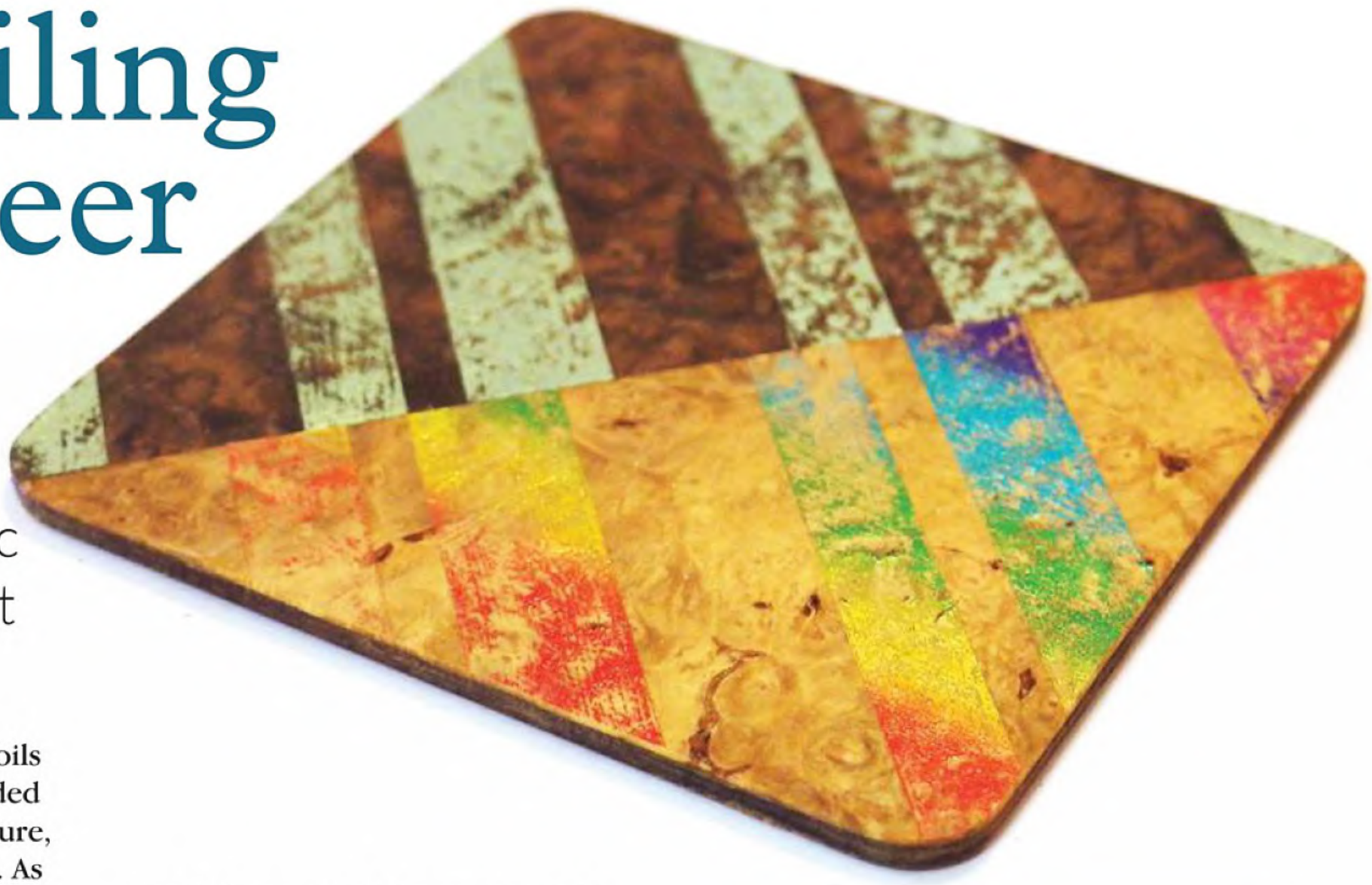
2013 The new museum opens on 31 May.

2016 Completion of the air-drying programme.

Hot foiling on veneer

Amber Bailey

demonstrates a simple technique for adding a metallic touch to any project



Hot foiling is a printing technique where dried foils are transferred and bonded to a surface using a hot temperature, producing a metallic appearance. As a contemporary art medium, laser printing is often used to create a design on paper or card. The foil will react with the ink when put through a laminator, adhering only to the areas that have been printed on.

While it is a technique limited to flat surfaces that can fit through a laminator, laser printing is also restricted in the type of materials that can run through a printer. Foiling glues are available, and although these will not provide the same intricate level of detail, I decided to try my hand at foiling on veneer, with surprisingly effective results.

Prepping your design

Once the foil is applied, the veneer cannot be sanded. It is advisable to carefully pre-sand the veneer so it is nice and smooth, unless you are looking for an effect that accentuates the detail of the veneer texture.

There are several options for creating your design – either block off areas of the veneer with low-tack tape or use a stencil. Stencils can be bought or created with card or plastic. Make sure to temporarily tape the stencil in place to avoid it slipping out of position. Adhesive pens are also available for freehand writing or drawing directly on to the veneer. With the design now set out on the veneer, cover any areas to be foiled with glue. It is important to create an even spread as too thick a layer or streaks in the brush strokes may appear in the foil. Leave the glue to completely dry, following the



A selection of the foil adhesives available

PHOTOGRAPHS COURTESY OF AMBER BAILEY



Foils are available in a wide range of colours and patterns



Modelling masking tape is readily available in a range of thicknesses rather than having to waste lots of time cutting down individual strips

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Applying glue in an even coat



Leave the glue until it is completely clear

instructions given on the label. Some recommend only a couple of hours, others suggest leaving 24 hours. As long as the glue has gone completely transparent, your veneer is ready to be foiled.

Remove all tape and stencils before foiling.

Hot foiling

Switch your laminator on but do not attempt to use it until it is up to temperature.

Cut out a piece of foil that is to the size of your glue area and place over the top, shiny and coloured side up.



Always keep to the hot setting when passing the veneer through the laminator

The veneer can go straight into the laminator but there is a danger of pieces snapping or getting chewed up as it moves through the rollers. You may wish to place the veneer in a pouch made of card or greaseproof paper.

Once the veneer has gone through the laminator, peel away the excess foil and you should find the foil has adhered to your design.

If the adhesion does not seem to have worked effectively the first time, pass the veneer through the laminator a second or third time.

Gluing and finishing

The veneer can now be glued to your base and treated in the same way as veneer normally is. Be careful not to scratch the foil off or get glue on it. Contact adhesive or PVA is ideal as you do not want anything too runny or messy. The foil can be polished over with an applicator that isn't too abrasive, such as a soft, cotton cloth. My personal finishing choice is Le Tonkinois varnish for its waterproof property. ■

Alternative methods

- Foiling isn't limited to just veneer. Leather can be foiled by placing foil on top without any adhesive, and drawing over the top with a pyrography pen. Peel the excess foil away and you should be left with your design.

- Etching your veneer before applying glue and foil can give a really interesting effect.



A laser-etched ring after being foiled

EQUIPMENT USED

Tools

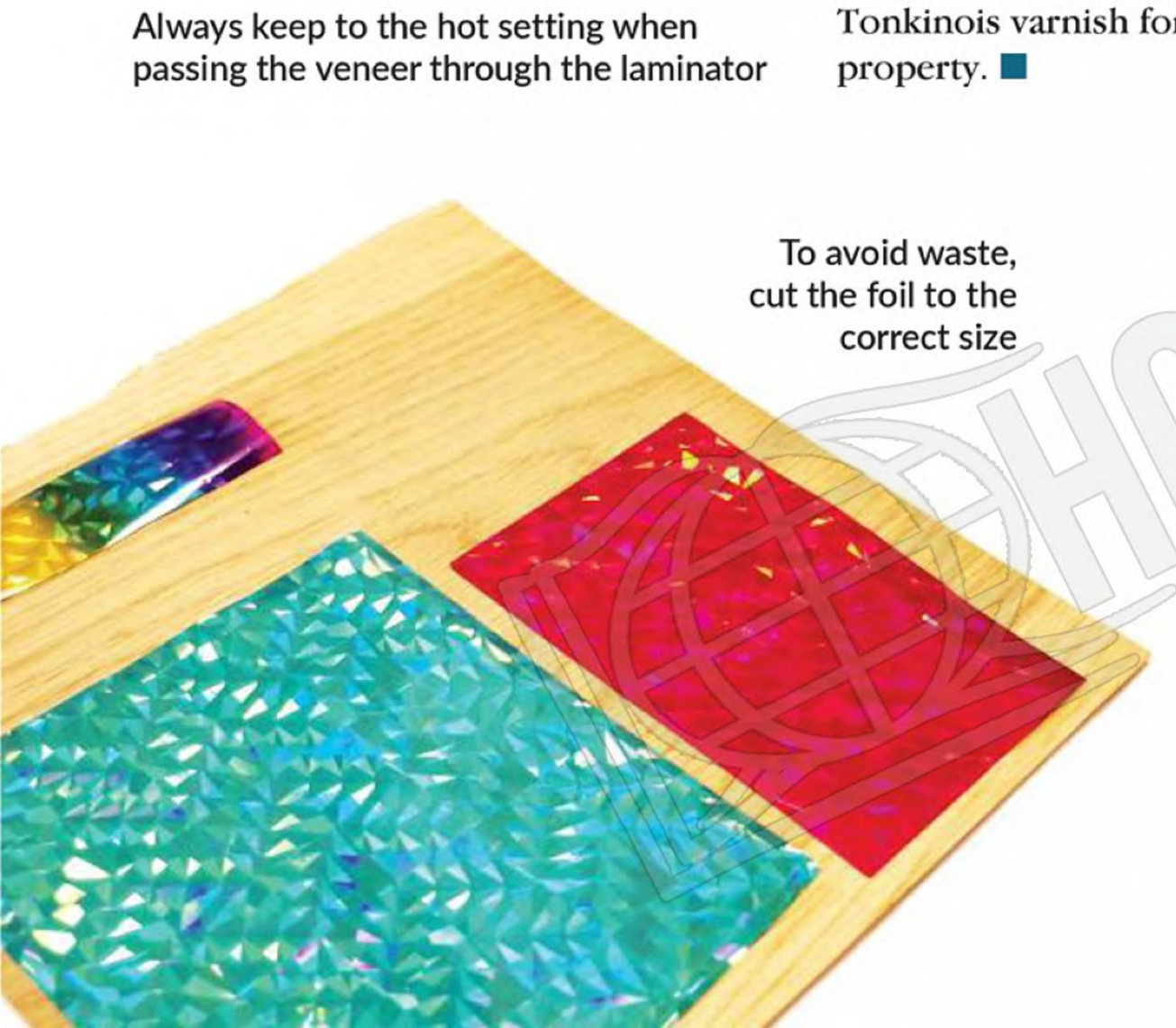
- Laminator

Materials

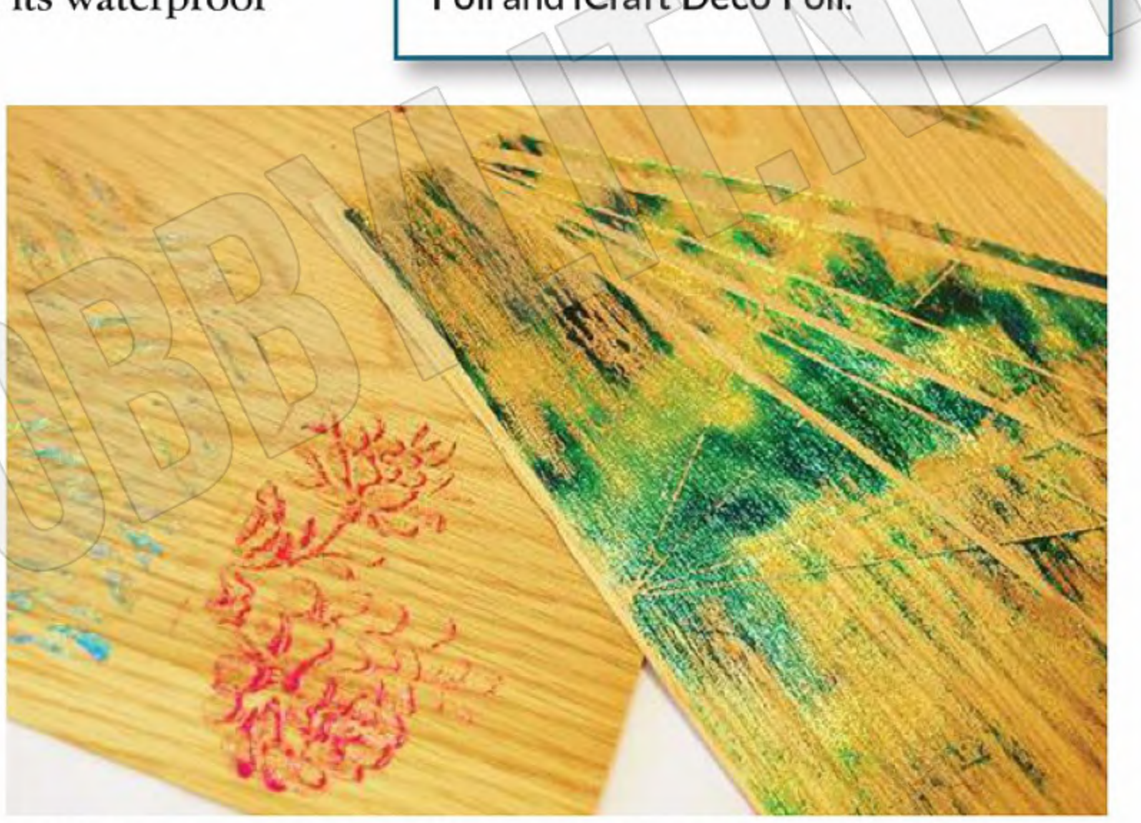
- Hot foils of your choice
- Veneer
- Foil adhesive
- Low-tack tape or stencils

Suppliers

All materials and equipment are available from a well-stocked craft shop or: www.amazon.co.uk
The recommended foiling brands for best results are Heidi Swapp Minc Foil and iCraft Deco Foil.



To avoid waste, cut the foil to the correct size



With the veneer foiled, it is ready to be glued on to any carcass, creating endless possibilities

PHOTOGRAPHS BY GARETH IRWIN

Fan bird

Gareth Irwin's latest project made from a log magically takes flight

As a hand tool woodworker, I sometimes demonstrate my skills at shows or get asked to do demonstrations for different groups. Although chairs and other furniture are what I want to show to people, the making process is slow and the overall picture only comes into view at the end of the build. It's therefore hard to get people to stay for any length of time to watch or take more than a passing interest in the methods I use.

People (including young children) will, however, watch for the 20 minutes that it takes me to make a fan bird. This allows me to explain the characteristics of the timber and the way I work it, in the same way to make chair parts. The audience never fails to be amazed at seeing a log magically become a bird in such a short time, without effort, noise or glue.

Fan birds originate from north eastern Europe where there was, and still is, a strong tradition of woodcraft. I learned to make fan birds by watching someone make one at a forestry show about 10 years ago. I went away determined to make them and over a couple of years of on-and-off trial and error, worked out the materials, tools and techniques necessary. Having learned this way, my birds look quite different to the one I saw being made and I hope that when you learn to make them, you develop your own style too.

The timber needed for fan birds needs to be bolt straight, perfectly clean, fast-growing green ash. Other woods can be used, including cherry, poplar and even some softwoods if they share the same characteristics.

A log of only 100mm length, 125mm minimum diameter is needed. The growth rings should be even and a minimum of 4mm apart with a fairly central pith to avoid the compressed fibres associated with leaning trees.



Tools required

Only a few simple tools are needed, which is also a plus point when it comes to travelling to demos:

- A small vice
- A chopping block
- A splitting blade or axe and club for log cleaving
- A spokeshave or plane to smooth the surfaces
- A tenon saw for the relieving cuts
- A wide chisel for paring away waste
- A whittling knife for shaping the body
- A small internal bevel gouge (optional)
- A riving knife that can be held at both ends to separate the 'feathers' (any knife that has a stropped, rounded-over, steep bevel to split the wood instead of cutting)


1


2


3

1 Using the splitting blade (or axe) and club, split the log in half, through the pith. Split one half into quarters and so on to produce a wedge of about 50mm width at the bark.

Now place the blade parallel to and 13mm away from the bark. By splitting near the edge, the split will 'run out' towards the bark. Discard this piece then turn your wedge over. By taking another parallel split, 13mm away from the new edge, a tapered billet will be produced that will become the bird.

2 Using the vice and spokeshave or plane, smooth all four long surfaces. The billet can now be shaped in profile.

With the tenon saw, cut two slots in the side as pictured. The angled cut should go just short of halfway through and the square cut to about 3mm depth. Mirror these cuts exactly on the other side.

The two opposite angled cuts should nearly meet, leaving only 1-2mm remaining in the middle (take care to get this bit right). Using the wide chisel and paying attention to grain direction, pare away the wood down into the angled cuts on both sides as shown, stopping at the base of the saw cuts.

3 At the square saw cut, make a 3-4mm U-shaped groove across the billet using the small gouge (if you don't have a small gouge, use the corner of the wide chisel to make a V-shaped groove), repeat on the opposite side taking care to be exactly opposite.

Again, using the wide chisel, create a rounded point at the widest part of the billet as shown.

Creating the feathers of the bird is the most tricky part of the process and all your work up to this point can be lost if it goes wrong or the timber is unsuitable.

The way the billet was oriented in the log means the medullary rays of the timber are running through from one side to the other, and it is along these weaknesses that our splits will be made.

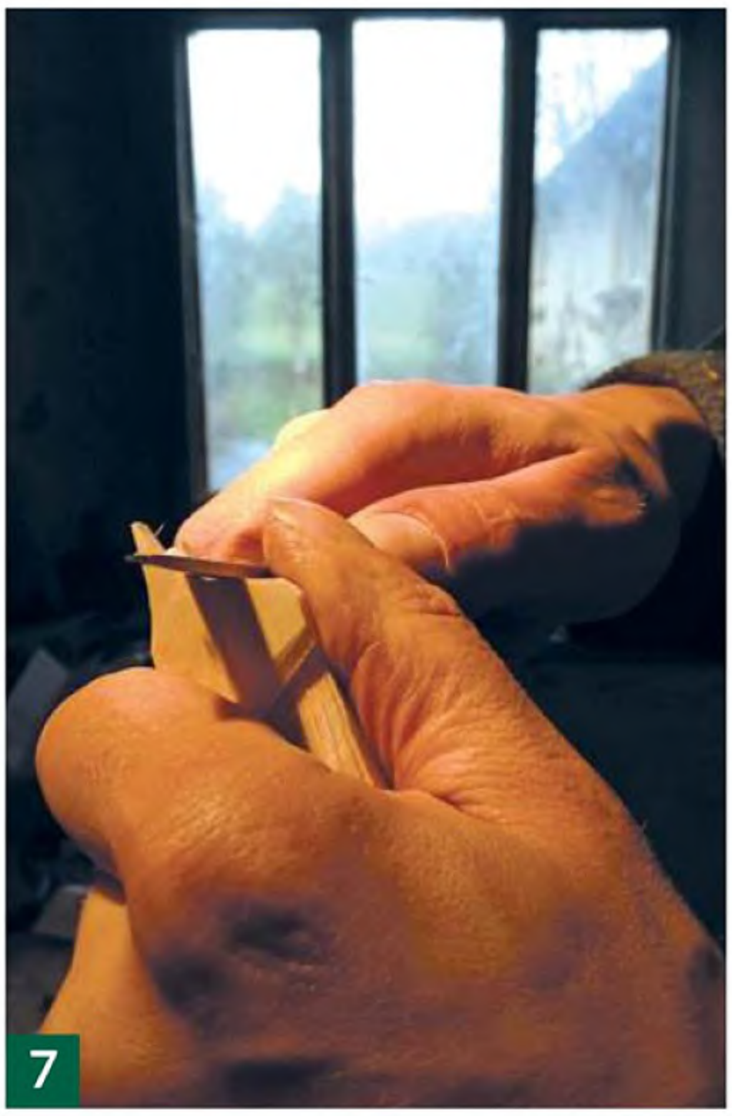
4 Place the 'body' of the bird in the vice and, holding the riving knife at each end, push down and ever so slightly twist in to take the first split, aiming for about 1-1.5mm thickness. The first one or two may fail until the split becomes parallel with the grain – discard these.

5 Continue riving at 1-1.5mm thickness until 25-30 feathers are created, making sure to go all the way down to the shoulder at the bird's body. The piece being split will start to get a bit wobbly as the last few feathers are riven and any wood left can be split right through to discard, as shown. ➤


4


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6


7


8

6 Clamping the layered feathers in the vice, remove the shoulder at the back of the body with the chisel, paying attention to grain direction.

7 The carving of the bird's body can now be done with a whittling knife, working away from the left hand and forming a beak.

8 Now the bird can magically be brought to life as each feather is hinged out on the few fibres that hold it to the body. This is where the 'stringy' characteristics of the timber really matter.

9 Take the first top feather and hinge it 90° to the right, take the second feather and hinge it 90° to the left, the third feather goes right again and interlocks underneath feather number one. Alternate left and right, interlocking under the previous feather on each side, until the wings meet in the middle. Try to pack them together well to make everything nice and tight.

10 Hopefully there will be some feathers left over to make a tail. This time, leave the first tail feather in the centre and alternate each feather right and left, still interlocking underneath, until all the feathers are used up.

This whole process will take lots of practise but will be worth the time and patience, and undoubtedly improves hand tool control and grain understanding. ■


9


10

HOBBY WET

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Ideal for compact work spaces where storage is limited and for trade professionals who need accurate workshop facilities on the move. Each fast-switch module performs as well as any stand-alone system, and the TWX7 Workcentre includes the Clamping Table module as standard.

TWX7 RT001

TWX7 ROUTER TABLE MODULE

Optimised for used with all Triton Precision Plunge Routers, the TWX7RT001 Router Table is coated in a micro-dot, low-friction surface, and can shape, plane, rebate, trench, mould and groove. When a Triton router is fitted, bit and collet change is possible above the table. Accuracy is achieved for each task with micro-adjustable fences.

TWX7 PS001

TWX7 910W PROJECT SAW 127MM MODULE

Doubling as a standalone bench tool or TWX7 Workcentre module, the 910W TWX7PS001 Project Saw functions as a 127mm dia blade circular saw either sliding or fixed. The dual-bar sliding system allows for smooth, controlled cutting. In fixed mode, the saw becomes an accurate table saw for mitre and cross cutting when used with the protractor fence.

TWX7 CS001

TWX7 CONTRACTOR SAW MODULE

The TWX7CS001 Contractor Saw transforms the Workcentre into a full-featured table saw. The 1800W saw powers a 254mm TCT blade through rip cuts up to 86mm high and bevel cuts 0-45°. Four-point locking of the rip fence enables professional accuracy on site, and accessories allow for larger workpieces.



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Ten trees in fact, myth and legend

PHOTOGRAPHS BY GARY MARSHALL EXCEPT WHERE OTHERWISE STATED

Our very own woodland sprite, Gary Marshall, decides to go 'mything'

Which 'tall tree tales' originate in truth and which are pure fiction? I've selected few favourites. My words won't shake anyone's personal belief – but I'm happy however trees feature; it's better than ignoring them.

1 Glastonbury thorn (*Crataegus monogyna* var. *biflora*)

The Christmas flowering hawthorn that grows in and around Glastonbury and the Wearyall Hill thorn near Glastonbury Tor was once notorious. Unfortunately this was vandalised in 2010 – I'm not sure what remains. The myth surrounding this tree (and no doubt its offspring) is that it originates from the sprouted staff of Joseph of Arimathea and the heralding of early Christianity to England. Blooms from the tree are to this day dispatched to the British monarch each Christmas.

2 Hanging trees

In the UK most of these weren't trees – for example, the Tyburn Tree was a gibbet constructed for public executions in London, now replaced with the more 'liberal' Speakers' Corner (although listening to some rants one can only wonder). Examples of real hanging trees are the dule (or dool) trees in Scotland. One such abused example is the dule tree at Leith Hall, now a National Trust Scotland property. This fine sycamore (*Acer psuedoplatanus*) is worth a visit.

3 Flag tree

Go to Aston on Clun in Shropshire on the last Sunday in May and you'll see the Arbor Tree, a venerable native black poplar (*Populus nigra*), dressed in flags that stay for a year. The day is known as Arbor Day and is celebrated with other festivities too. Tree dressing is thought to date back to Celtic times but also often coincides with the date of the once widely celebrated Oak Apple Day – 29 May. Castleton in Derbyshire still marks this day.

4 The tree that will not burn

Now surely this is a bit of hokum? Go and visit the Seven Wonders of Fore



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

The Dule tree at Leith



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Flag tree at Aston on Clun



Hawthorn in bloom

in Co. Westmeath. There's water that flows uphill; a mill without a race; a tree that will not burn; water that will not boil; the anchorite in a stone; a lintel raised by prayers; a monastery in a bog (it should have sunk, you see).

Such tales are surely reminiscent of *Father Ted*. Get out of it what you will – I did.

5 Tree of life – *arbor vitae*

This is the fanciful name given by early settlers to the eastern red cedar (*Juniperus virginiana*) of North America. Original local inhabitants venerated the tree partly because of its lasting timber properties. Don't confuse it with the anatomical arbor vitae that is the cerebellar white matter of our brains.

6 Ash (*Fraxinus excelsior*)

A tree that was sometimes split in two in springy sapling prime; a sick child was passed through the gap and the tree tied together again. If it healed, so would the child. Sometimes a captive wren would be sealed back into the tree. Apparently you can't get this service on the NHS.

7 Elder (*Sambucus nigra*)

Beware: these were thought, by the Danes, to contain the dangerous spirit of Hyldemoer (elder-mother) and so should not be lightly cut or burned. Hollow branches, though, could be used as bellow tubes.

8 Elm (*Ulmus* spp.)

'Ulum hateth man and waiteth' as it unexpectedly drops branches. Not so many large elms about these days, but wear a hard hat just in case.

9 Royal oak (*Quercus* spp.)

King Charles II gave an account to Samuel Pepys around 1681 – some 30 years after his escape from pursuers – of hiding in a 'great oak in a pretty plain place'. There is still a fine oak in the grounds of Boscobel House in Staffordshire but it's an offspring from Charles's tree. This much-acknowledged caper is loved by us so much that there's many a local Royal Oak public house.





PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS/ADAM JONES

10 The little nut tree

The origins of this nursery rhyme are disputed, but it may allude to our dodgy monarch Henry VIII, his marriage to Catherine of Aragon and that particular fruitless branch of the royal tree. We don't know what species of nut the tree might have borne. ■

I had a little nut tree,
Nothing would it bear,
But a silver nutmeg
And a golden pear.

The King of Spain's daughter
Came to visit me,
And all for the sake
Of my little nut tree.

Her dress was made of crimson,
Jet black was her hair,
She asked me for my nutmeg
And my golden pear.

I said, "So fair a princess
Never did I see,
I'll give you all the fruit
From my little nut tree."

KING CHARLES PHOTO COURTESY OF WIKIPEDIA COMMONS



Maybe this was once a wren ash



Every elder contains a witch, according to some



Elm (*Ulmius* spp.)

Banding & stringing



PHOTOGRAPHS BY GMC/ANTHONY BAILEY

The Editor on how to apply stringing or banding with a router

Veneered or solid wood cabinetwork can be improved and beautified by applying stringings and bandings. It is a traditional cabinetmaking technique but is remarkably easy to do. We show you how to do a simple piece of inlaid banding and make your project more pleasing to the eye.

Stringing refers to inlaid lines of thin wood, often holly for white, while black-dyed sycamore is used for black lines, although in the past it was often ebony for more expensive work. There are also brass inlay lines for fancier work. Bandings are where several lines are glued together, sometimes with a continuous cross-grain strip of contrast wood in the middle. These are wider than stringing, but both types of inlay come in different widths and combinations. You can buy all these lines and bandings from specialist suppliers.

Inlaying a banding

1 First you need to decide where to place your banding – generally this will be reasonably close to the edge of a box or cabinet, although you can have a banding further towards the middle if it looks right. Do not commit yourself too early, but lay the banding on the surface using two pieces crossing at one corner so you get a proper impression as to how it will look when finished. If the banding looks too narrow or too wide, you may need to obtain a different size before starting the job. In Gary Ramsden's case, he places the banding on the junction of the walnut sides and the sycamore veneered top, so that is what we will do here.

2 Choose a straight router cutter that matches the width of the banding. It is better if you can avoid making two passes to widen a groove as there is more chance of error creeping in. Buy the banding first and, if necessary, obtain a cutter that matches the banding rather than the other way around. Mark out lightly in pencil where the banding will go. This is important because when you machine the grooves, they must not overrun at the meeting corners as the surrounding surface will be damaged.

3 Routers only work accurately because of proper guidance. The open gap in the fence can cause trouble if it catches at the corner of the box or tabletop, so you need to remove the plastic facings and fit a longer, continuous wooden fence for smoother running.



1 Decide were you would like to place your banding or stringing



2 Vernier callipers are an accurate method of measuring your router cutter



3 Make your own fence with no gap in the middle for your router



Setting the plunge depth for the router using the banding as a starting point

4 Set the groove depth by plunging the static router so the cutter presses against the surface, and insert the banding in the gap between the turret depth stop and the depth rod. Lower the depth rod on to the banding and lock it off – this gives you a flush level fit. Then unplunge, remove the banding and lower the depth rod slightly and lock off – this should leave the banding proud and ready for sanding. Do some test cuts.

5 You will be running around the edge, so the only guidance available is the straight fence. You need to pull the router towards you and push the fence against the workpiece. Machine all the grooves, stopping short of the corners.

6 To square the corners, take a very sharp, firmer bevel chisel and press the flat of the back against the outside of the slot, in line with the meeting pencil line from the adjacent slot, and press down to cut through the wood in the corner. Repeat on the other side, then remove the waste.

7 Bandings come in long sections, so cut it with a chisel into over-size lengths. Place the first piece into the groove and carefully sight down the flat back of the chisel at the corner



When cutting, pull the router towards you and push it against the workpiece

junction so the blade edge runs from internal corner to external corner, and press down to mark the banding. Note the reflection in the mirror back of the chisel – if you get a perpendicular reflection off the banding the cut will be at 45°. Place the banding on a board and make a crisp cut with the chisel. Place the banding in the groove and check the cut is correct.

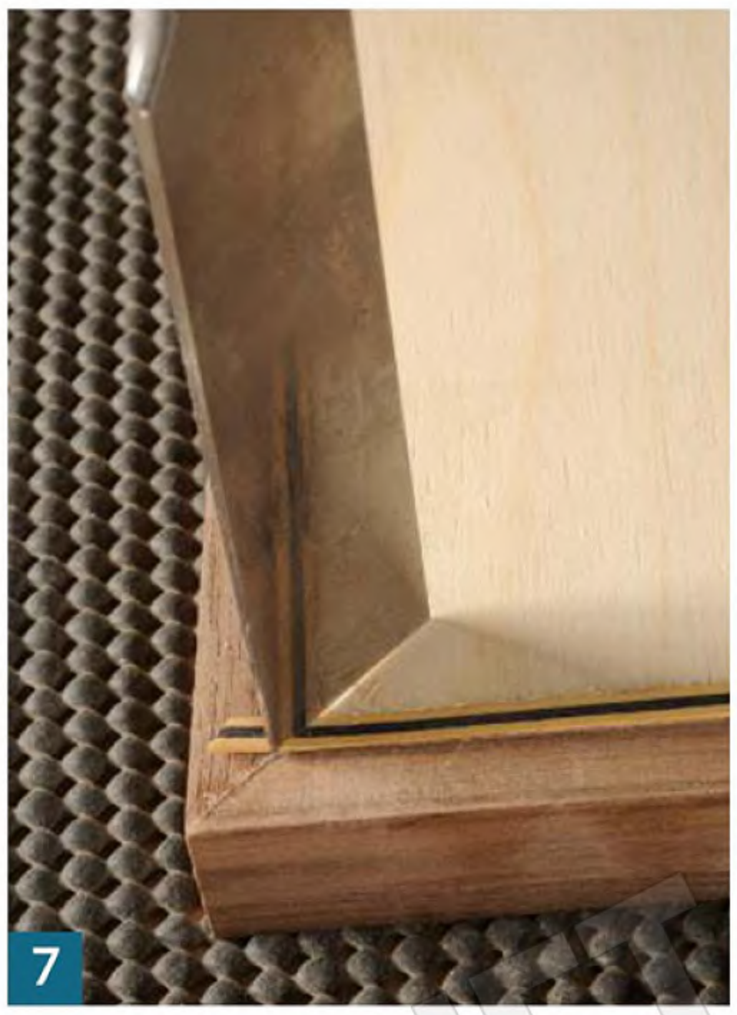
8 Now remove this banding and put the adjacent piece in its groove and again repeat the procedure. Replace the first piece of banding and the two should meet neatly.

9 When all bandings are cut, remove one at a time, run a little glue in the groove, replace the banding and use masking tape across it to hold it down. Do this all round, then run masking tape lengthwise along the bandings.

10 Professionals will use a pad sanding machine to level the surface (not a small pad sander), or even a belt sander, but this can be a disaster. A safer method is to stick a strip of medium abrasive to a long batten like an extended sanding block, and work it back and forth until the banding is level with the surrounding wood, then sand more conventionally, ready for a finish. ■



Using a very sharp bevel edge chisel to square up the corners



Marking the 45° cut on the banding – note the reflection in the chisel

Spray clear sealer on the top so the black sanding dust from the banding won't discolour the sycamore.



A dry-fit of the banding adjacent to your first cut



Masking tape holds the banding in place once you have glued it up



Abrasive applied to a strip of timber is used to sand down the banding

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PLUS: *Natural-edge box • Ask the Experts • News & Events Woodland Ways • Tricks of the Trade • Trees for Life*

ON YOUR MARKS! – marking from a true face

PHOTOGRAPHS © RALPH LAUGHTON 2018

Good cabinetwork depends on accurate preparation and marking out

Once the timber has been properly prepared, the face side and edge should be flat and true as well as being perfectly square to each other. The purpose of the face marks is to identify these two surfaces which have been used as a reference when gauging the other sides. In an ideal world the other faces would be just as square as the first two; however, any small difference (tolerance) is likely to be compounded if these other faces are used as reference surfaces in subsequent operations. For this reason all marking should be referenced from the previously marked face side or face edge. In practice this means registering the stock of the square or gauge on these faces and marking from there.



1 All sides of the prepared timber should be marked from the face side and edge. Mark the face side from the face edge...



2 ...the face edge from the face side...



3...the far edge from the face side...



4...and the bottom from the face edge

Sliding bevel

The sliding bevel can be used to transfer an angle from an existing joint or finished piece to the workpiece, without measurement. It can also be set to a predetermined ratio or angle. When used to transfer angles from existing pieces, the bevel is unlocked, positioned against the surfaces to be copied, and simply locked back into position; the angle can now be marked on the new workpiece.

Transferring angles in this manner can be useful if a part needs to be fitted to a static feature such as a door surround or a piece of built-in furniture. Marking a piece of board with a desired slope, set out as a ratio, will provide a master template to which the sliding bevel can be set when needed. This is particularly useful when marking the tails of a dovetail joint, which are usually expressed as a ratio, such as 1:6 or 1:8. ➤



Using the sliding bevel to capture an angle from an existing piece of furniture



The captured angle can now be transferred to the job in hand



Setting the sliding bevel to a ratio determined by a setting board

When an unusual angle needs to be marked, the sliding bevel can be set using a protractor. Alternatively, if you are familiar with trigonometry, you can use it to construct the required angle on a piece of sheet material which is then used as a setting board.



When the required angle is known, the sliding bevel can be set using a protractor; the one on this combination set is particularly handy

Waste management

After spending time and effort preparing a piece of wood for joint making and then carefully marking and confirming the cut lines with a knife, it is good practice to mark all the waste areas by hatching with a pencil. It is very easy to cut on the wrong side of the line if the piece has been turned around a few times. The amount of time and frustration you will save over the years by marking waste areas will be enormous.



Confirm the pencil line with a marking knife

The cut line

Confirming the line with a knife severs the wood fibres at the surface, leaving a clean cut across the grain. Any saw cuts should be made on the waste side of the line and slightly shy of it, leaving material to be shaved away with a chisel or plane at the fitting stage. It is best to stop short when sawing to a line, as on the tongue and shoulder of a tenon; again, final trimming is accomplished with an edged tool.



Getting into the habit of marking all waste areas will save you the anguish of cutting to the wrong side of the line

Assembly marks

As the joints are cut and fitted to each other, some kind of marking system must be employed to ensure that the joints are assembled with their matching components. It does not matter what symbols are used, so long as it is clear which way round they are to be read; if using numbers, always underline 6 and 9 to denote their intended orientation. The components can be marked A–A, 1–1 or whatever you like, so long as the parts come together in the correct order and each matches the partner to which it has been fitted.



Always cut on the waste side of the line and on the outside of the cut



Square the cut to the line with a chisel or plane

Witness marks

Witness marks are applied to the job after the fitting and matching of an assembly or sub-assembly. On adjoining components, a simple strike across the joint with a pencil prior to dismantling will show their intended orientation and position relative to each other when they are reassembled.

If more than two components of similar dimensions are to be joined, then the marking system needs to be upgraded so as to indicate the position of each component in sequence. An example of this would be a table top made up from several consecutive boards: here the witness marks can be multiplied to accommodate the extra joints by doubling and trebling the strikes across the joints of subsequent boards.

With several boards to join, this method can become a bit tedious and lead to mistakes. A better method is to draw a triangle across the boards. The bottom of the triangle is drawn on the first board and the sides are extended across the intermediate boards so that the tip of the triangle indicates the final board.

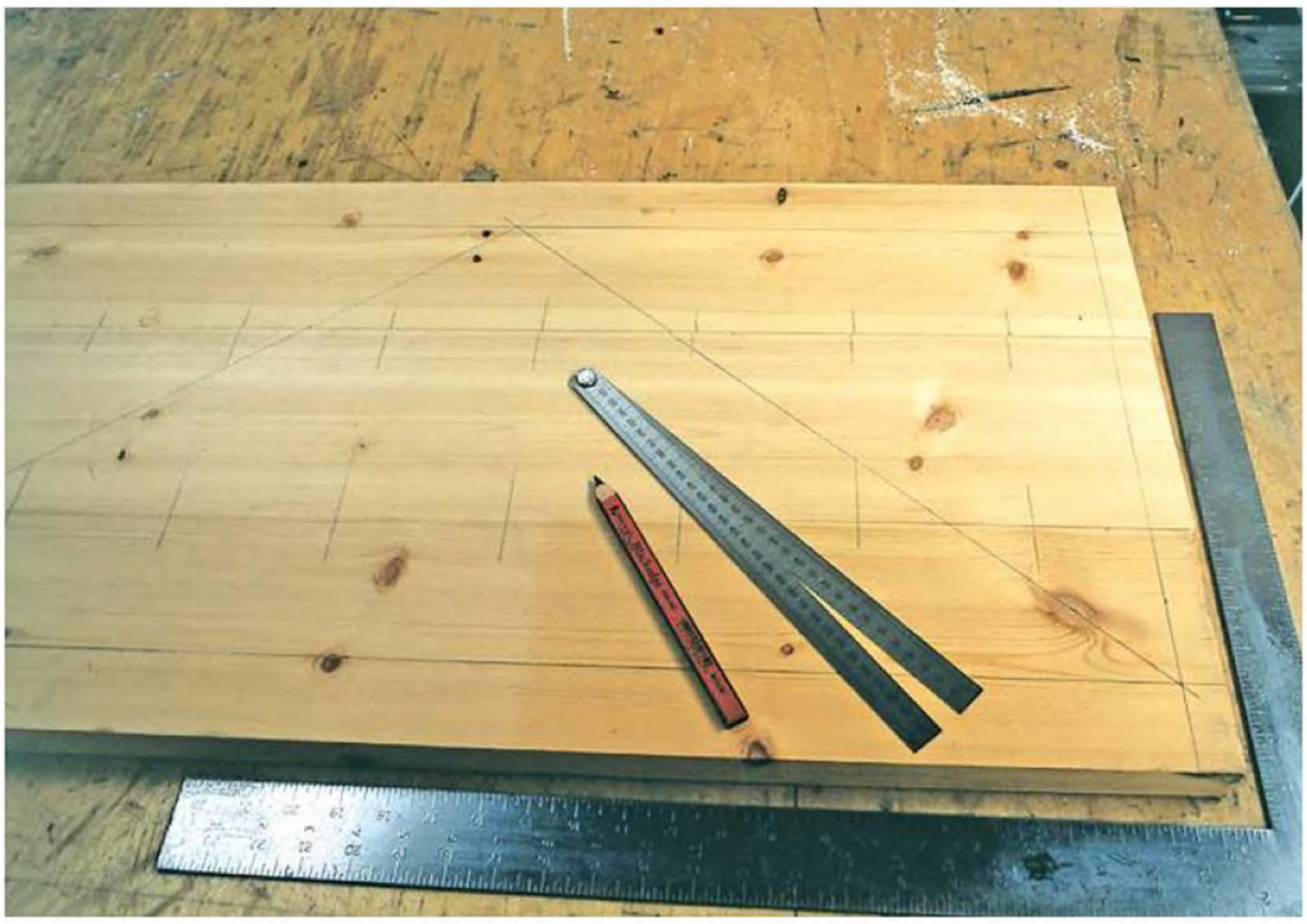
Other forms of witness marking can be used to indicate frame or trim positions. For example, an octagonal picture frame could have its components marked 1–8 in a clockwise direction. There are no hard and fast rules here – common sense is the key to success. ■



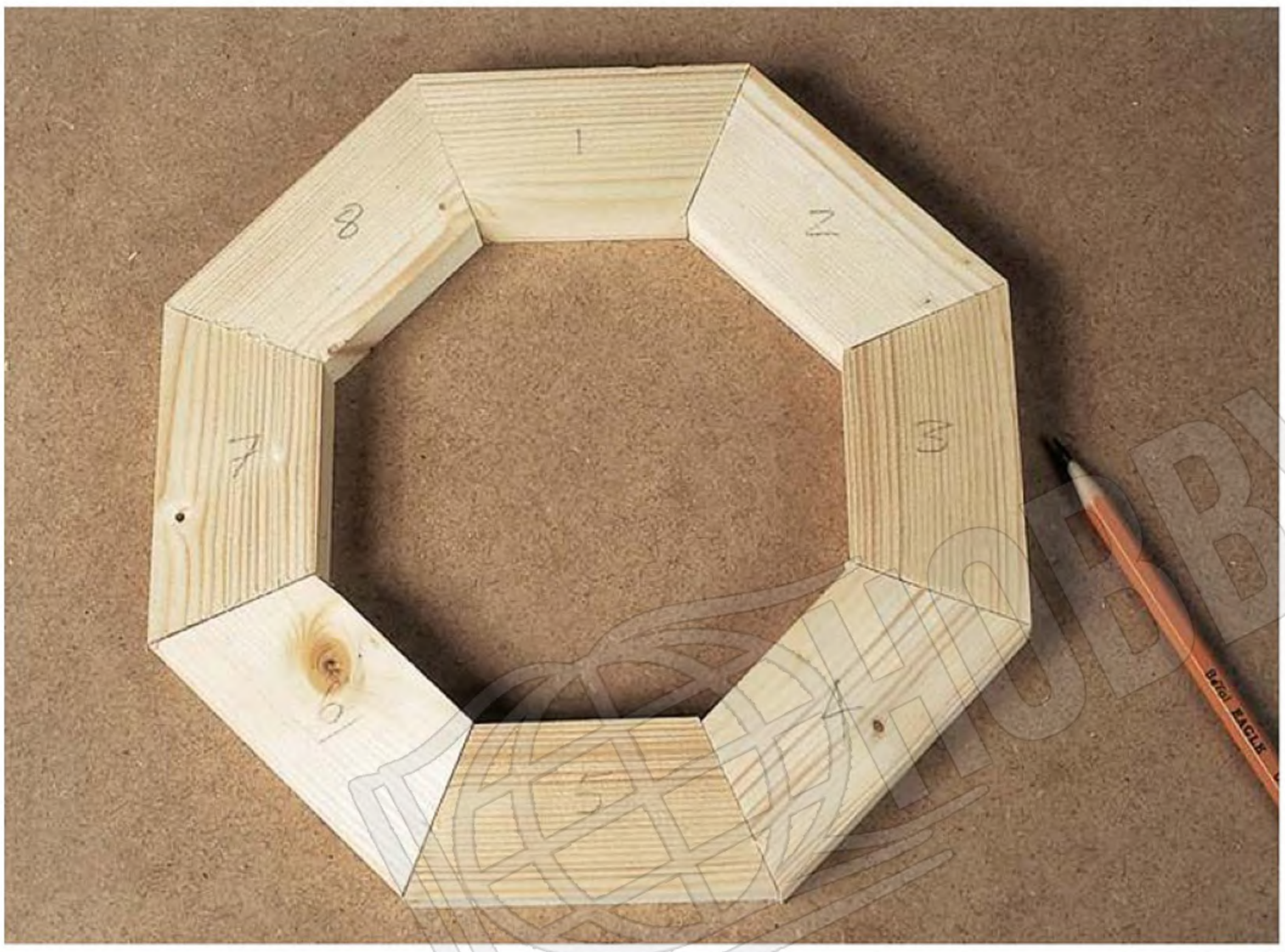
Joints must be marked to identify their matched parts



Witness marks struck across the joints of adjacent boards will ensure that the correct assembly order is maintained



For multiple assemblies a triangle drawn over all the pieces is less confusing than a multiplicity of strikes



The parts of this octagonal frame are numbered clockwise to establish a position for each piece

This is an extract from

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By Ralph Laughton



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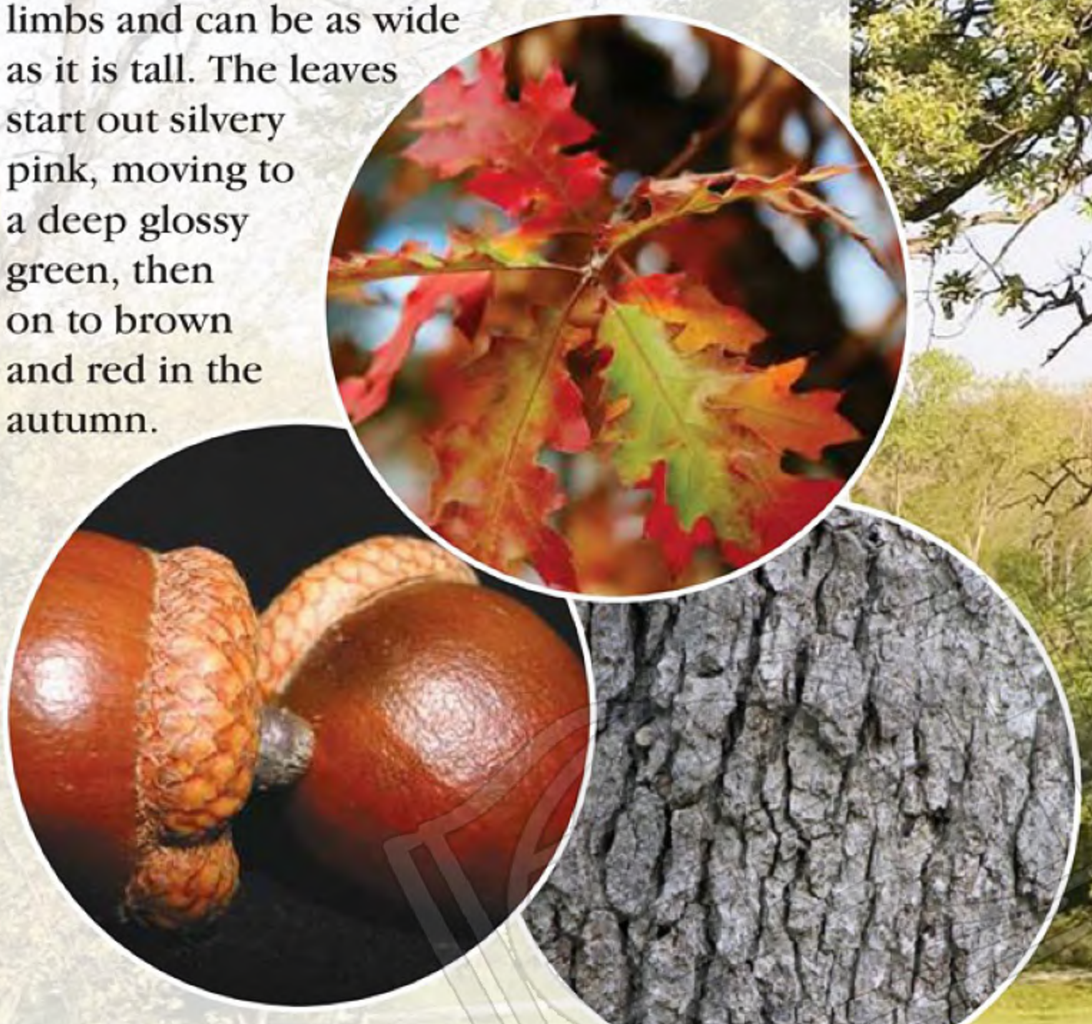
Trees for Life
American white oak

In an earlier issue we looked at 'the oak' – our very own English oak. So let's now show our respects to an equally important oak tree

American white oak (*Quercus alba*) is a member of the Fagaceae family, just like the English oak (*Quercus robur*), or any other oak tree for that matter. Other names for this tree are Arizona oak, stave oak and roble – and despite its name, it is unusual to find a tree with white bark as its usual colour is ashen grey.

Growth habit

It is predominately found in North America and Eastern Canada and is tolerant of varied growing conditions. It is found on ridges, in valleys, in dry or moist areas and in moderately acid and alkaline soils. White oak does not cope well with urban conditions, due to an intolerance of soil compaction and changes in soil levels. Mainly found on the lowlands, the white oak can reach altitudes of 5,249ft in the Appalachian Mountains. The typical height reached is 25-30 metres. It has a very wide spread with few dropping limbs and can be as wide as it is tall. The leaves start out silvery pink, moving to a deep glossy green, then on to brown and red in the autumn.



Leaves, acorns and bark of the American white oak

Fascinating Fact

White oak is the official state tree of Illinois, as voted for by schoolchildren. Of the two trees that represent state trees, one can be found on the grounds of the governor's mansion whilst the other is located in a schoolyard in Rochelle. Connecticut and Maryland also have the white oak as their state tree. The Charter Oak of Hartford, Connecticut, is one of the most famous white oaks in America. The tree now makes up the reverse side of the Connecticut state quarter coin.



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Timber characteristics

The heartwood varies in colour from light tan or pale yellow brown, to dark or pale brown and can have a pink tint. Grain is usually straight and open. The timber is medium to coarse in texture. Figuring includes swirls, crotch pattern, burrs and a tiger-ray flake pattern. The sapwood is white to light brown.



Working properties

American white oak is hard and heavy, with medium crushing and bending strength. It has great steam-bending qualities and is virtually waterproof, with high resistance to wear. It planes, turns, bores, sands, mortises, stains and polishes well. The tannin content can have an adverse reaction to ferrous metals, resulting in iron staining. It is also difficult to season. Problems include end and surface checks, honeycombing, collapse, ring failure and iron staining. The heartwood is resistant to preservation treatments.

Uses

American white oak is typically used in furniture and cabinetmaking, joinery, office furniture, boatbuilding, trim, panelling, flooring, cooperage for wine and whisky and shingles. The timber is often sliced for veneers and rotary-cut for plywood. Gustav Stickley used American white oak in his mission-style oak furniture. White oaks have tyloses which gives the wood a closed cellular structure, therefore stopping water from passing, so it makes good timber for whisky barrels and outdoor furniture. Much of the timber in furniture and other processed goods sold in the UK are in fact American white oak due to its availability in quantity and reliable grain behaviour.



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Mission-style night table made by Anthony Bailey

Food

The acorns from white oaks are eaten by turkeys, wood ducks, pheasants, nuthatches, woodpeckers, rabbits, squirrels and deer, amongst others. The acorns were also eaten by Native Americans.

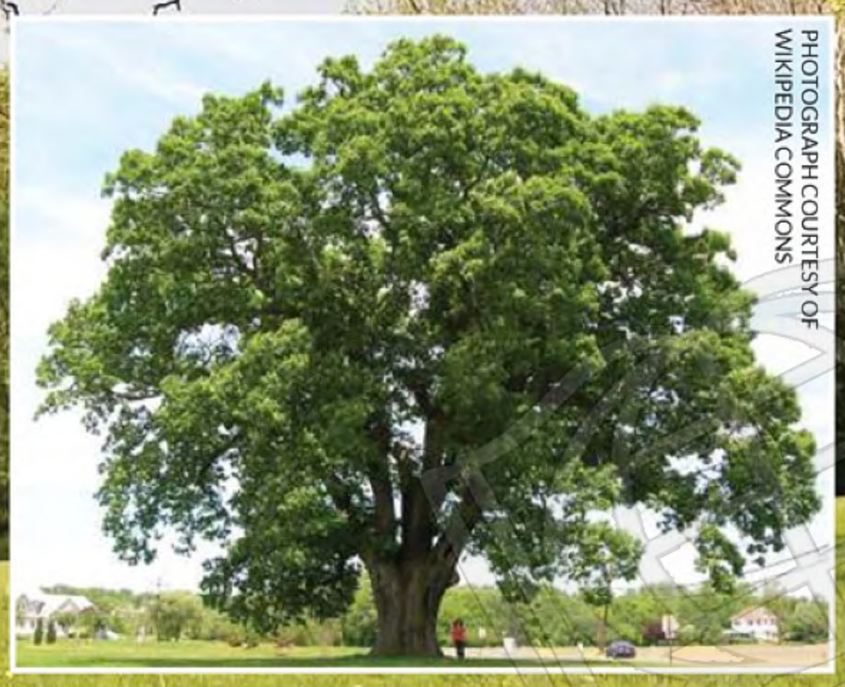
Pests and diseases

The heartwood is resistant to decay but it can come under attack by ambrosia beetles which live in nutritional symbiosis with ambrosia fungi.

To find out more about this important specie visit:
The American Hardwood Council
www.americanhardwood.org ■

Did You Know

The Wye Oak of Wye Mills, Maryland, was the largest and oldest American white oak in the USA until it was destroyed by a thunderstorm in 2002. It was believed to have been 460 years old, and measured 29 metres in height with a crown 36 metres wide. The Linden Oak seems to have replaced the Wye Oak to become the largest white oak in North America, measuring 29 metres in height with a crown spread of over 40 metres.



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Keeler Oak tree, Mansfield township, Burlington County, New Jersey



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Oak whisky barrels



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Hairy woodpecker on a white oak tree

The art of conserving glass



All windows in buildings need glass, but have you ever thought of using stained glass? By Janette Wolf

Malcolm and Louis Wytcherley of Stained Glass Studio in Worcestershire explain how the specialised techniques they use for conserving stained glass have remained unchanged for centuries. This small team of glaziers is so steeped in the archaeological fabric of this country, it has made the Wytcherleys the go-to craftsmen for renovation projects of great antiquity.

Take Llwyn Celyn for instance. This farmhouse, nestling on a hillside at the mouth of the Llanthony Valley in the Black Mountains was built in the late 15th century, at a time when Wales was still bruised from an ill-fated revolt against the English led by Owain Glyndwr.

The house retains many of its original medieval features, including finely carved passage screens, a timber-framed roof, wattle and daub panels and carved doorheads. But it had fallen into disrepair until the Landmark Trust secured its future with a grant of £2.525 million from the Heritage Lottery Fund to bring it back to life. The Wytcherleys were approached to replace the windows, one of the finishing touches to a five-year project.

'We do not use any modern methods in the process at all,' says Louis Wytcherley, who followed his father into the family business after a stint as a quantity surveyor. 'The company ethos is conservation of the past, rather than replacement – and the methods we use are exactly the same as they would have been hundreds of years ago. We pride ourselves on keeping these ancient historical techniques alive.' The Wytcherleys' only concession to modernity is using electricity to heat a soldering iron as opposed to fire.

Louis' father Malcolm 'fell' into glazing by accident. He started the company in 1984 after many years as a figuremaker at Worcester Porcelain. His keen eye for minute detail and a flair for colour led to experiments with glass and he started making suncatchers and terrariums as a hobby. It was popular demand for these glass artefacts that led him to turn his attention to glass full-time.

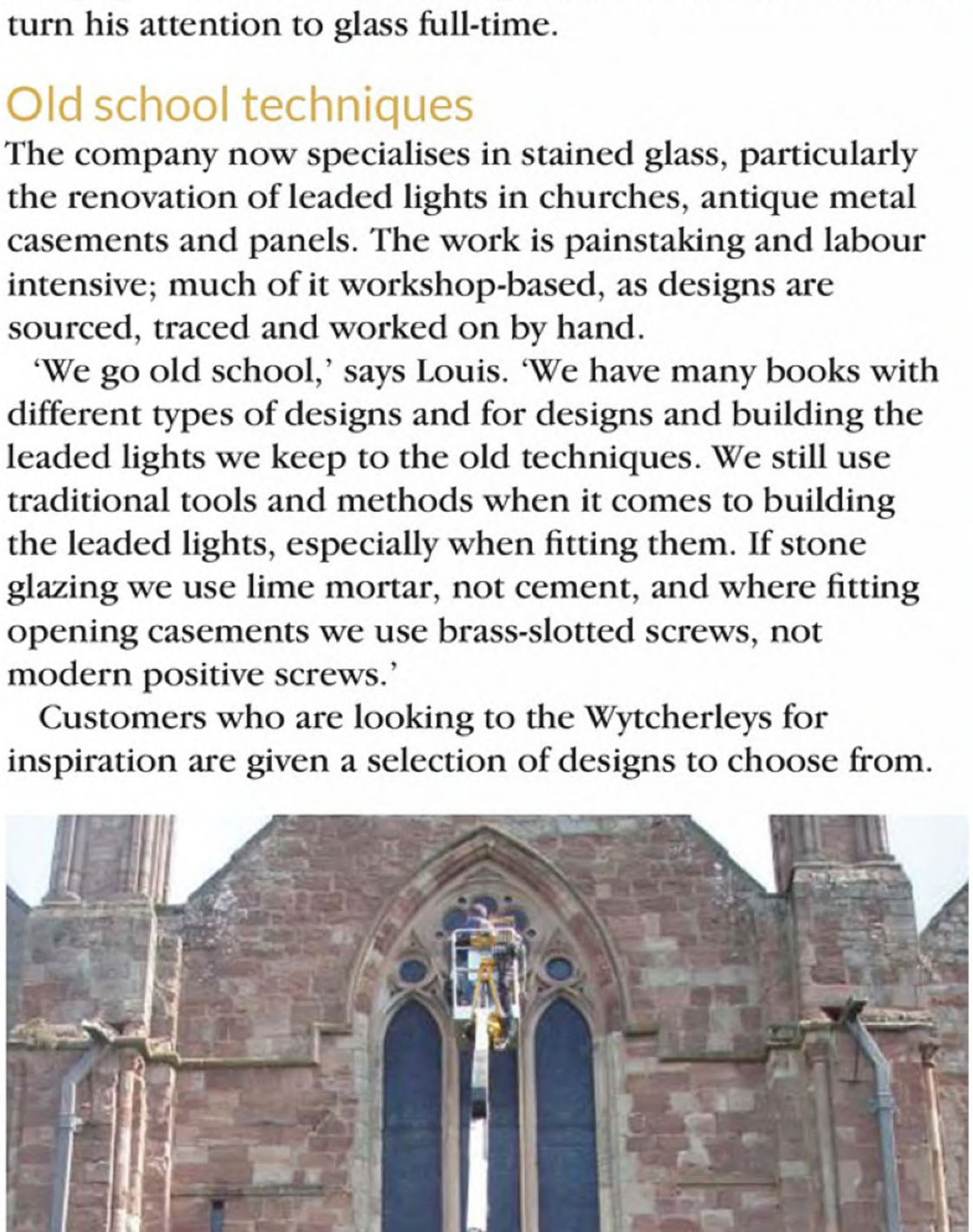
Old school techniques

The company now specialises in stained glass, particularly the renovation of leaded lights in churches, antique metal casements and panels. The work is painstaking and labour intensive; much of it workshop-based, as designs are sourced, traced and worked on by hand.

'We go old school,' says Louis. 'We have many books with different types of designs and for designs and building the leaded lights we keep to the old techniques. We still use traditional tools and methods when it comes to building the leaded lights, especially when fitting them. If stone glazing we use lime mortar, not cement, and where fitting opening casements we use brass-slotted screws, not modern positive screws.'

Customers who are looking to the Wytcherleys for inspiration are given a selection of designs to choose from.







'We then always draw out a full-size design. We have found that if you draw scaled designs they can look very different once blown up to full size. As for getting the patterns spot on, we use tracing paper and a compass to get it symmetrical.' Because of the specialist nature of their projects, the company is not looking to expand or recruit. If a job requires extra hands they call on local contractors whom they trust.

Louis explains: 'If we have a larger project where we need help we are extremely lucky in that we share a yard with a clear glazing company where we can poach a worker if needed. Obviously, we would have to work closely with them and point them in the right direction.'

The particular skills required in historic glazing means that training an apprentice is not an option. 'It would be hard and very long-winded, due to the skills involved. There are several different factors in making leaded lights; we could focus training on one element but then they would still have to be skilled in all the others – whether that is designing, ➤





cutting, repairing or fitting. It is not worth our while financially even if it was possible.'

Although it seems that this attention to detail would be laborious, both Louis and Malcolm find this aspect of their work immensely satisfying. 'Working with old materials and using age-old techniques is something that we both actually enjoy,' he says. 'One of the biggest handicaps is that everything just takes longer – there is no cutting corners like you can with newer materials, such as silicone. Many of the tools are now harder to get hold of, as are the older traditional materials. But because we have been doing it this way for so long it has now become second nature to us.'

To convey some idea of the complexities of historic glazing, Louis describes a contract on a rare curved cast-iron glasshouse near Ludlow. The glasshouse in the walled garden of Millichope Park was last in operation in the early 1960s but became derelict more than 50 years ago. Dating from around 1836 it is one of very few surviving curved glasshouses and would have been cutting-edge industrial design at the time. Its restoration was part of an ambitious scheme by the owners. 'We had to glaze more than 15,000 postcard size panes of antique glass without the use of clips,' Louis recalls.

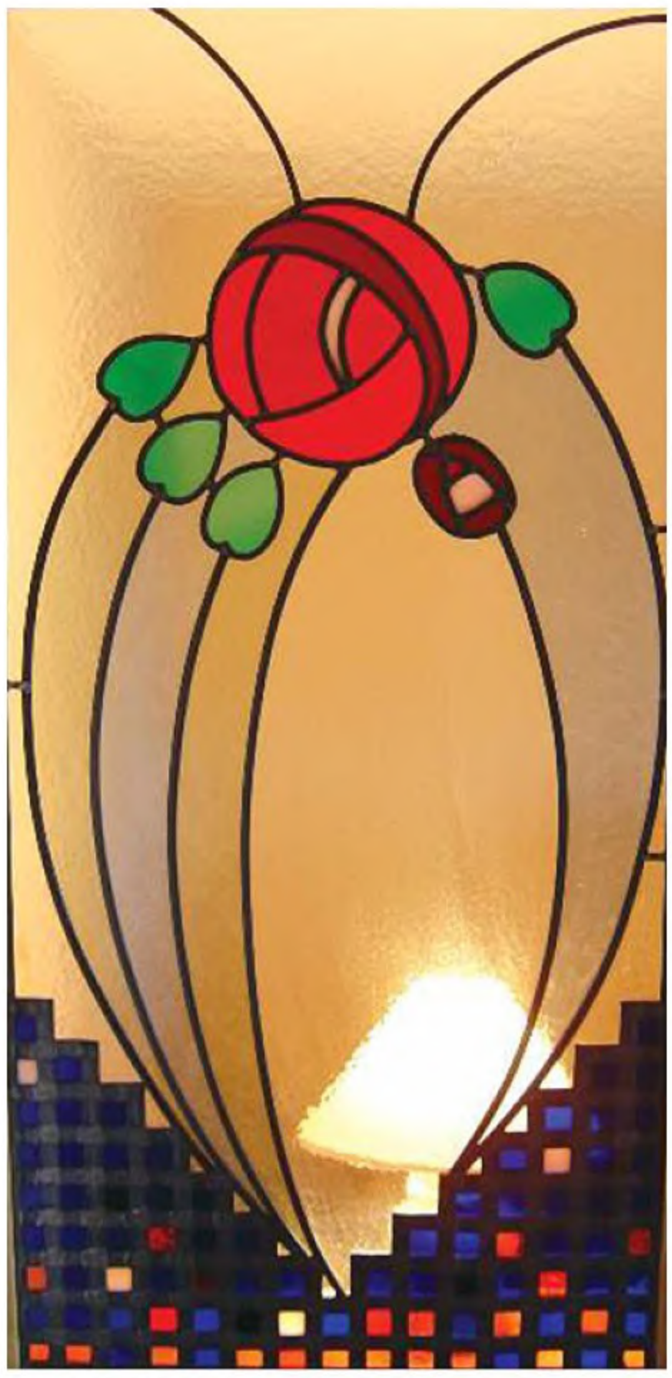
Artistic freedom

Not all of the Wytcherleys' projects are historic however. A look at their website reveals a strikingly contemporary edge to some of their domestic designs.

'Malcolm particularly enjoys the artistic freedom of creating designs at the studio for domestic property, where the customer is involved in the rough design and once a full-size design is drawn, they are involved in the colour choice of glass. But we do have to sometimes nudge them in the right direction! Each and every design is a one-off











and created specifically to the client's needs.' It is not just the non-specialist that takes a nudge now and again. The Wytcherleys often have to guide architects who do not have their extensive knowledge of glass design. In one Grade I listed house an architect wanted to replace the glass in the stone mullioned windows with diamond leaded lights. But, said Louis, 'the new owners had found an original metal casement with a square design hidden away in the loft. Once we saw the property we believed it was in fact one of the original windows and so advised that all the leaded lights should be the same square pattern. The architect who wanted diamond lights insisted that they were right!

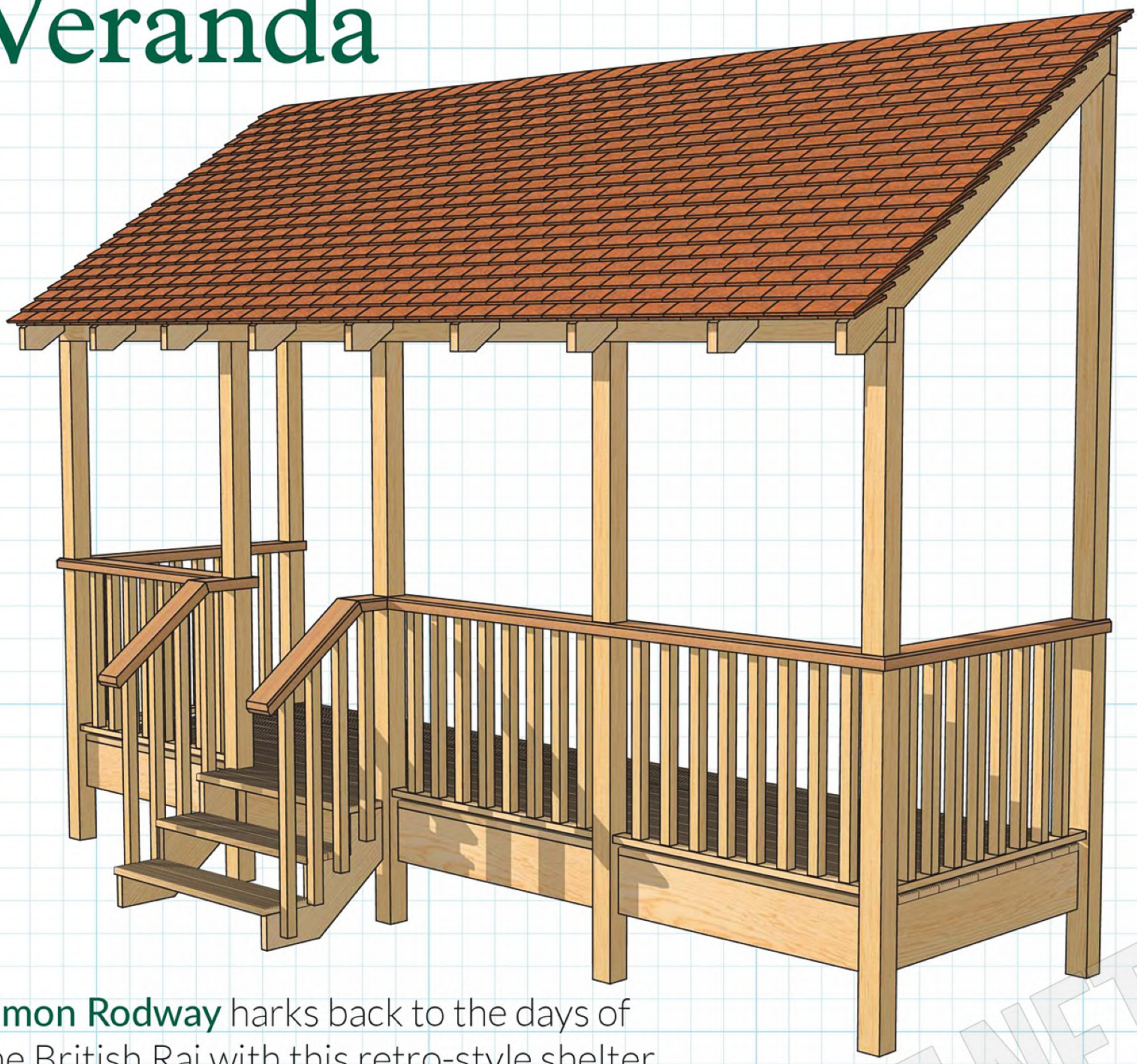
'So we drew up two full-size designs – one square and one diamond. Back at the site after chipping away at one window, we uncovered clear evidence of where ferramenta bars had been and they lined up exactly to those on our square design. So the architect was finally persuaded and gave us the go- ahead. We re-glazed the whole property including replicating 17 antique metal casements to match the original one found in the loft.'

The Wytcherleys' passion for conservation led them to become members of The Guild of Master Craftsmen – sister company to GMC Publications. 'We joined The Guild more than 30 years ago to promote our work through the best possible means,' Louis says. 'With The Guild stamp, our customers have the satisfaction of extremely high standards and we have had many customers come to us this way.'

Restoring the past in order to preserve it for future generations is what drives the Wytcherleys. 'We take great pride in each and every project, in what is unfortunately a dying trade,' Louis says. 'The fact that every job we take on is different helps keep our passion for our work alive. The job satisfaction we get when we finish each one is why we love what we do.' ■

PLANS 4 YOU

Veranda



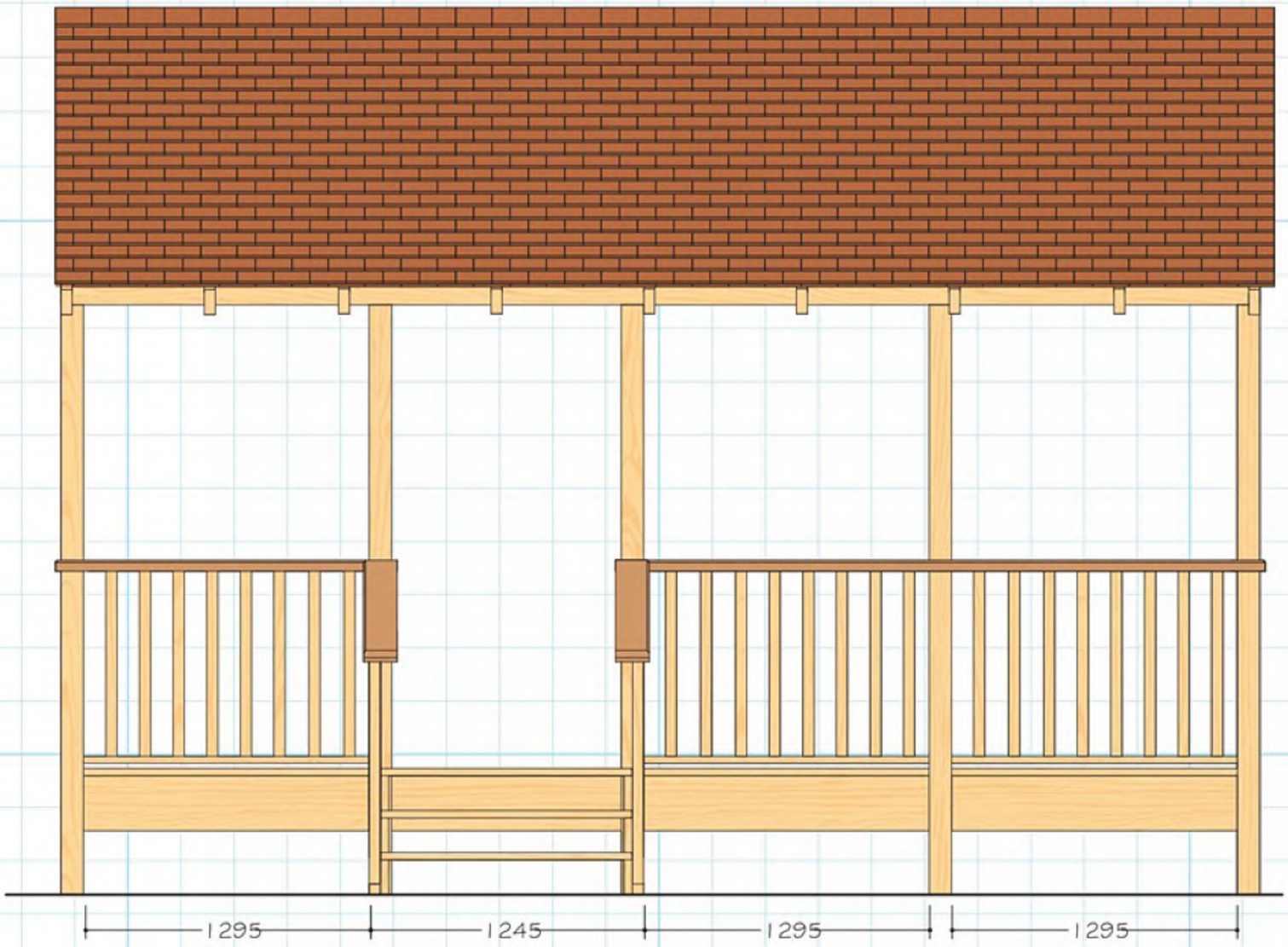
Simon Rodway harks back to the days of the British Raj with this retro-style shelter

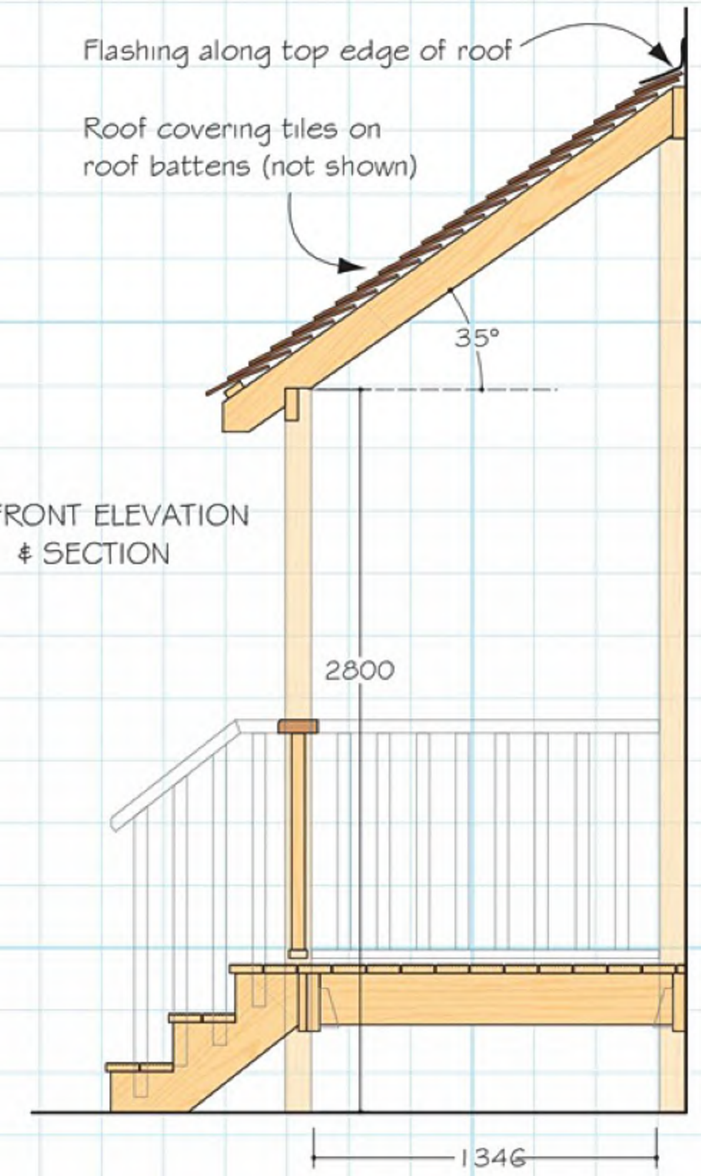
Defined as an open-air gallery or porch, the veranda is most commonly added to houses in hotter climates to provide additional shelter or shading, and with increasingly warm weather everywhere, it is likely to become a welcome addition, even in more northerly locations. With a bit of judicious weathering, it can also give you an outside space to sit in even if it's raining.

Stylistically, the veranda I've shown here is very simple, as I wanted to illustrate the principles involved in its construction, rather than provide decorative details. Moreover, the section sizes used will obviously vary according to the depth measured from the house, and the number of steps and height above ground of the deck will alter in each case as well.

The platform or deck is constructed by bolting a treated timber wall plate to the back wall along the length of the veranda, finished at each end by vertical posts. These can be slimmer in section than the front posts, if required, as they are not really doing any structural work. A row of posts is then set out at the required distance from the wall, joined along their back faces by a trimming joist at deck level, which is also let into each post slightly. The height of the posts and rafter pitch will vary according to the type of roof covering you use; in this case a combination of battens and clay tiles with a flashing along the top edge. Each post is also notched at the top to allow a horizontal framing section to run through across the front of the posts. This will pick up and support the feet of the rafters which are birds-mouthed accordingly.

Joists can then be fixed using hangers front and back, and decking screwed down onto them and trimmed around the posts. Simple steps are formed by notching out a string for each side and adding a couple of deck sections for each tread. I have used a fairly substantial balustrade with no





FRONT ELEVATION & SECTION

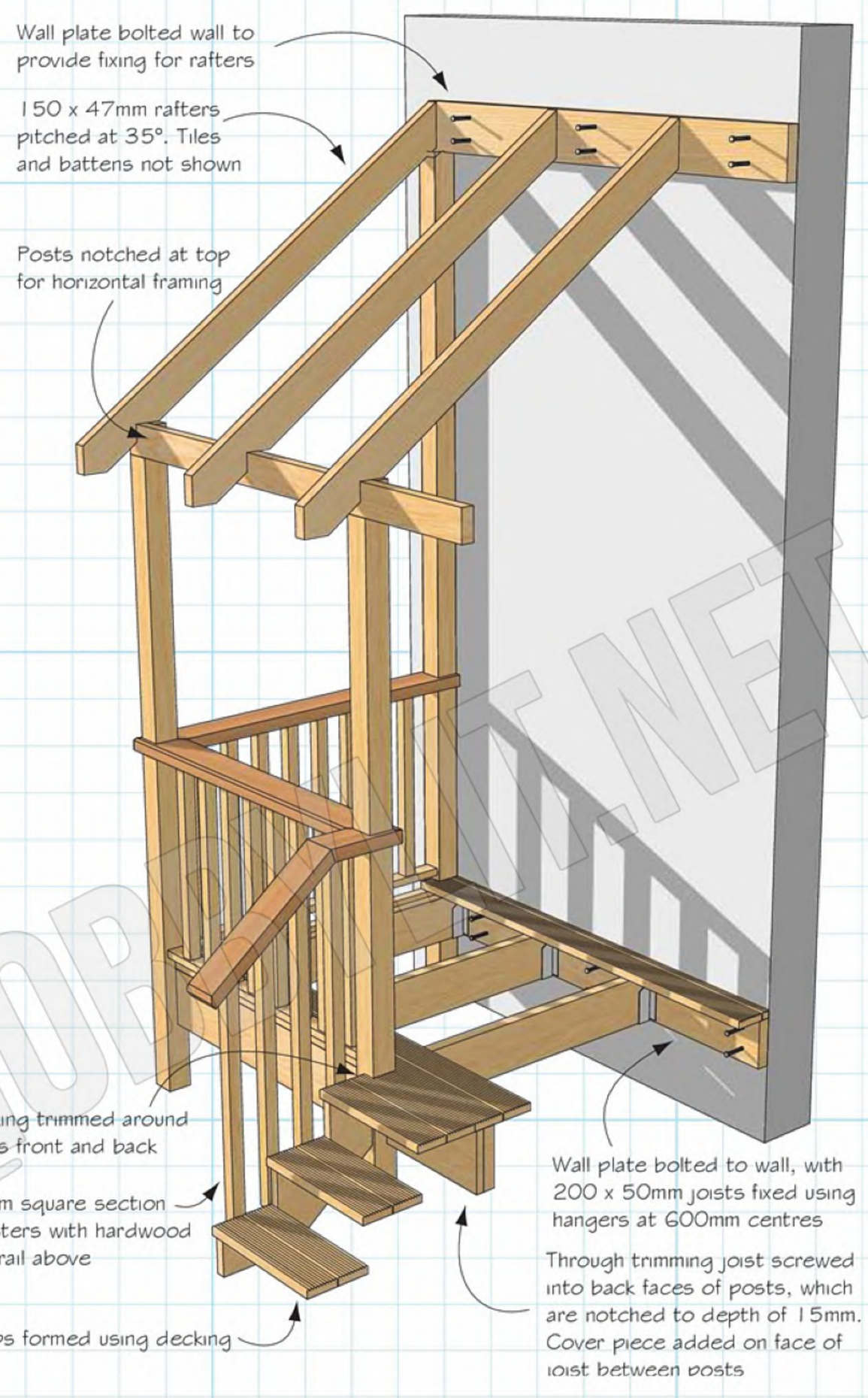
newel posts, something you would need to add if you opt for smaller balusters. The handrail is a substantial section of hardwood, trimmed around the posts and chamfered along the front edge.

The ends of the veranda are left open here, apart from the balustrade, but it is also quite common to add decorative work, cross pieces and even panels to close off the roof void at the ends. For deeper verandas than the one shown, additional bracing from the back wall would be desirable anyway, and this can be incorporated into the structure as an extra feature. ■

Cutting list

Rafters	9 @ 2200 x 150 x 50
Posts	5 @ 2800 x 100 x 100
Posts	2 @ 3765 x 100 x 100
Top wall plate	1 @ 5440 x 200 x 50
Bottom wall plate	1 @ 5340 x 200 x 50
Front top plate	1 @ 5440 x 150 x 50
Joists	9 @ 1365 x 200 x 50
Trimming joist	1 @ 5340 x 250 x 50
Joist facings	3 @ 1295 x 250 x 32
Joist facings	1 @ 1245 x 250 x 32
Side facings	2 @ 1345 x 250 x 32
Step strings	2 @ 910 x 310 x 50
Balusters	32 @ 838 x 50 x 50
Balusters	8 @ Ex 1125 x 50 x 50
Handrail	1 @ Ex 9500 x 150 x 44
Base rail	1 @ Ex 8500 x 75 x 38

(Note: sizes are all for illustration only, as each build will require altering to suit. Tile battens and decking to fit)



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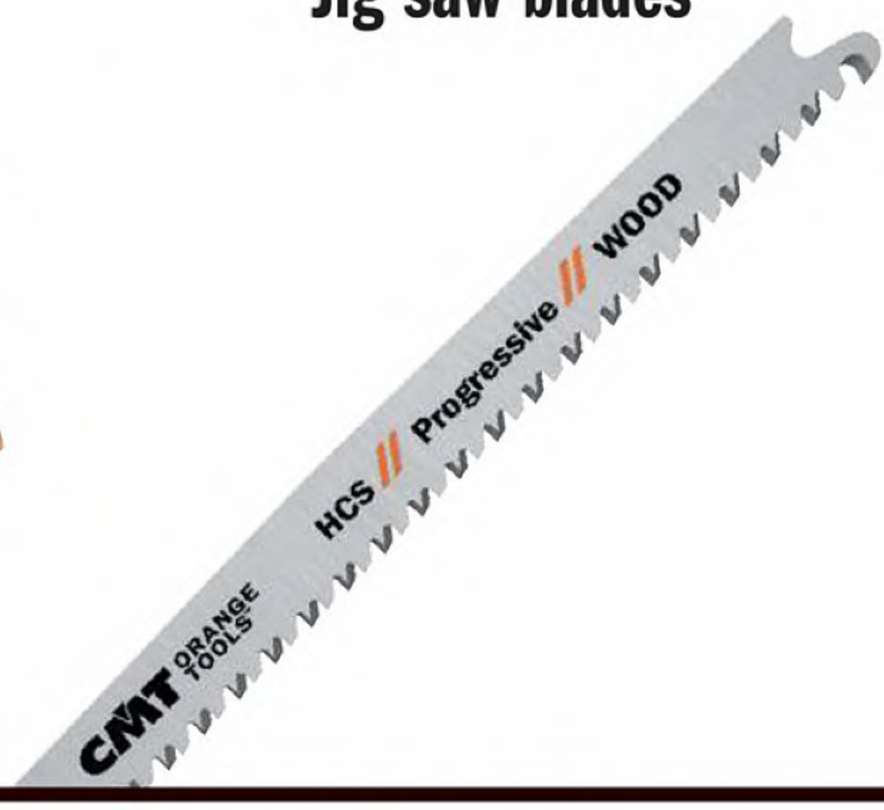
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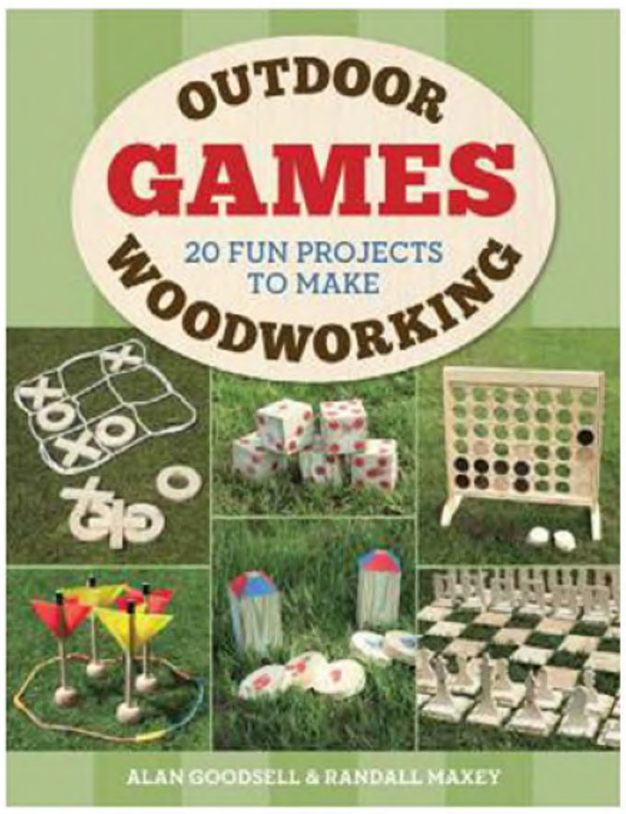
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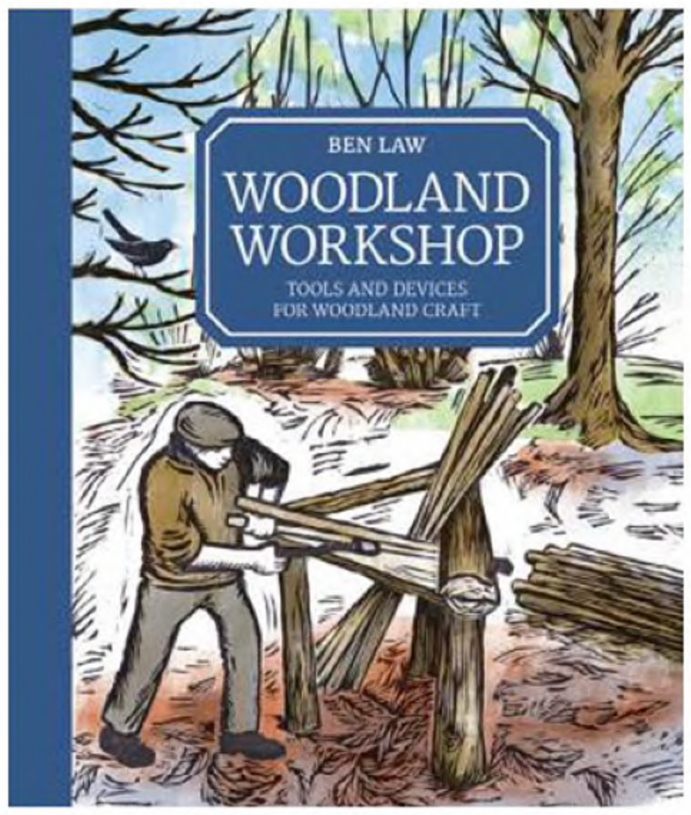
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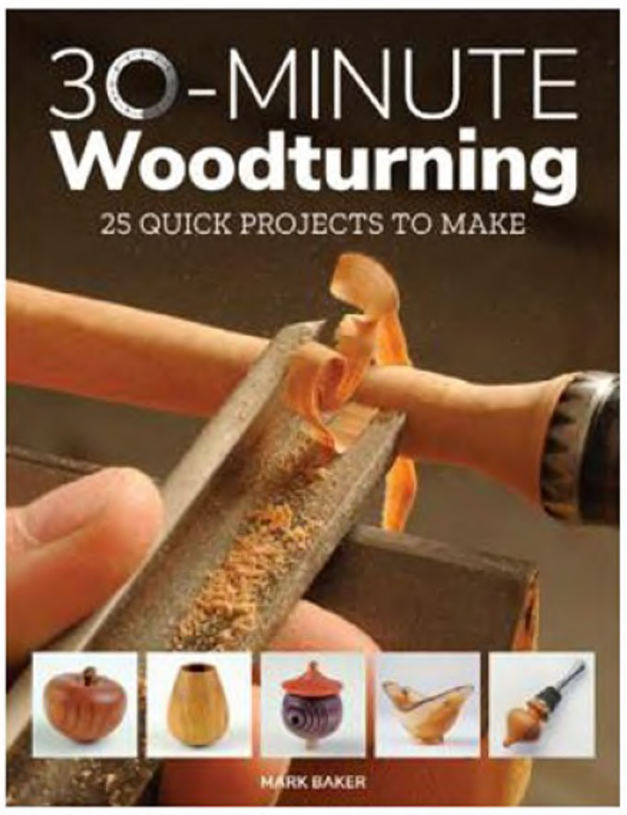
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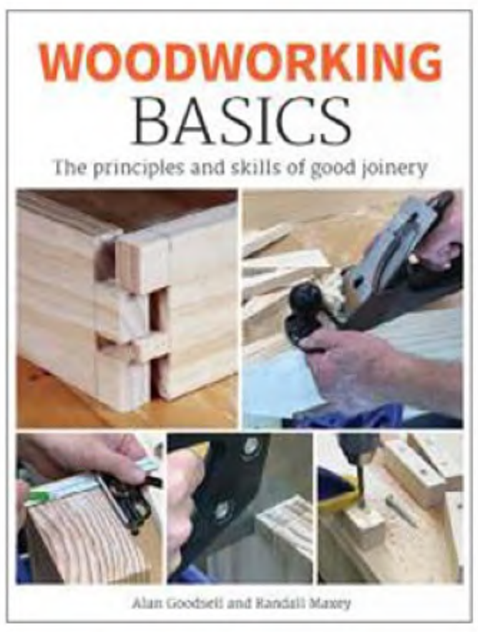
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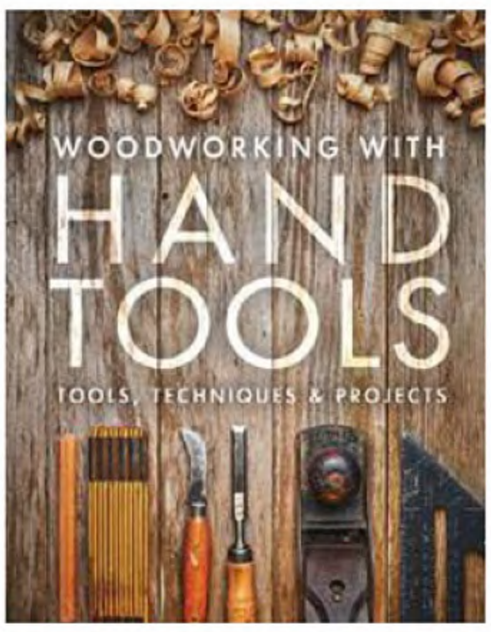
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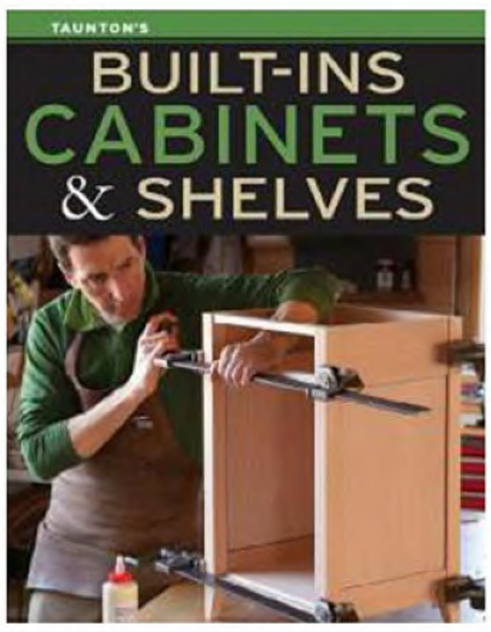
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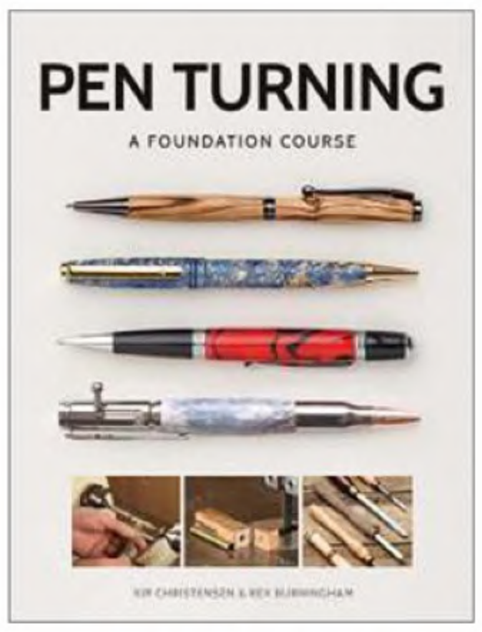
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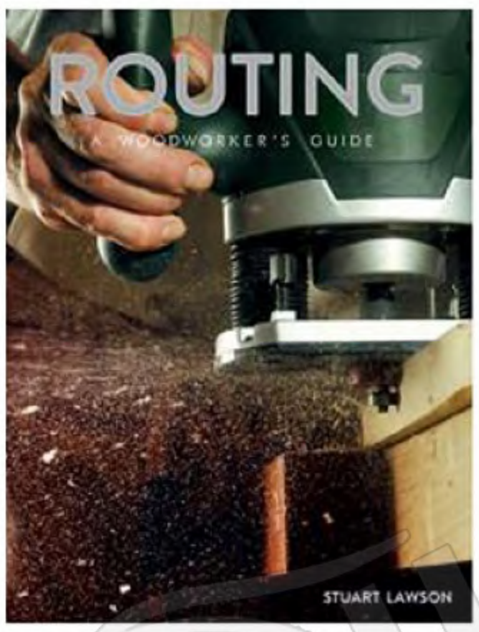
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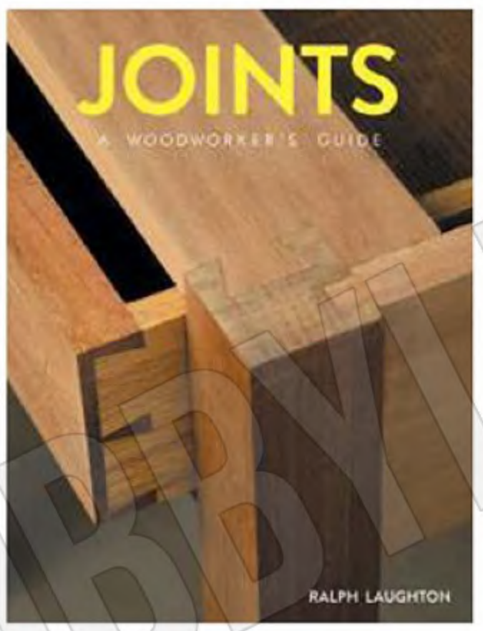
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Ask the experts



ANTHONY BAILEY
Editor,
Woodworking Crafts magazine

Another batch of awkward questions for the Editor to answer

PHOTOGRAPHS BY GMC/ANTHONY BAILEY



Plenty of artists' brushes and paints and a mixing palette

SEEING THE LIGHT

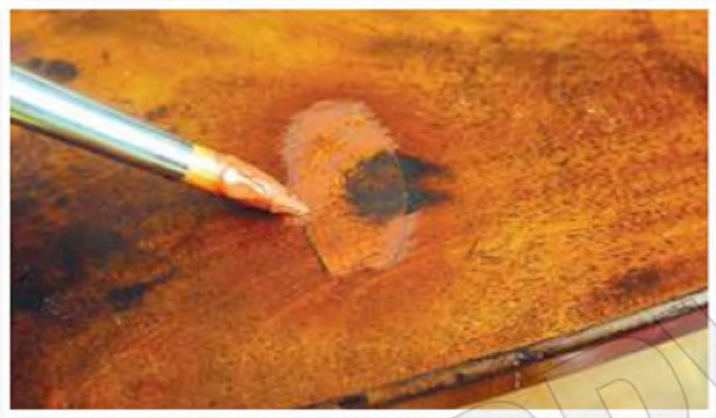
Following on from several of your articles I've tried using acrylic paints for touching out furniture repairs but they aren't always very successful, especially on the tops of things like trays and a table I've had a go at. Am I doing something wrong?

Niall Ashmore

Anthony replies: You aren't doing anything wrong. In fact, I have previously mentioned how difficult it can be when light falls on a surface because the reflection of light from the wood. Known as 'chatoyance', this will show up any opaque repairs done with paint. You need to consider several steps – how good is the repair? Filler never looks like wood and new wood and a poor grain match will never look like the original. Top surfaces catch the light in a way the sides never do so they aren't so easy to deal with. Light wood repairs are harder to hide than those on 'brown wood' furniture. You have the choice of wood dyes, water-based paint (acrylic) and French polish, which may have a browny colour such as garnet polish. There isn't an easy route but the less paint you use the better. I use tiny artists' brushes to add flecks of 'grain' paint across a repair and also fantail brushes to create a thin skein of colour which still allows the background to show through a bit. Find something you can practise on and rub out any mistakes and repeat until you are happy, which you will only know when a coat of finish is applied over your work.



A badly patched burn mark has a new patch in place



The burn being reinstated and the edges of the patch masked



Almost ready for a dark French polish to complete the repair

WET OR DRY?

I've got boards stacked for projects in my garage which have been there for some time. When I got around to use some of them for an indoor cabinet project they went out of shape after machining up and even when I'd finally built it, the doors sprang out of shape in our home, which is central heated. I know these things can happen but this has been quite a disappointment and a waste of money and my time. Are there long term steps I can take to avoid a repeat?

Gary Newbould

Anthony replies: For a start there are too many variables here. What tree, what timber drying method, which cuts are made through the tree, how cool is your garage, how warm and dry is your home? Well sourced, properly kiln-dried timber from a reputable timber merchant shouldn't misbehave the way you describe. Timber from a local woodsman still needs the correct treatment. Your garage may be essentially dry, but if it is quite cold it is probably humid as well so the boards aren't ready for a domestic interior. A moisture meter is really useful at determining whether the wood is ready to use. The one in the photo shows vintage vehicle upholstery that is extremely damp at 32% water content. For cabinetwork wood needs to be about 8-10% only. I suggest you machine the components oversize, take them indoors, and store them somewhere out of the way so they can settle, then re-machine to size shortly before use.



This leather seating is far too damp

WOODWORKER ARCHIVE

TOOL REVIVAL

I've got several marking-out tools made with rosewood and brass; is there a best way to revive them and make look good again? I don't think they need paint stripper but they do have paint spots and dry slightly rough surfaces as if varnish or something has got on them.

Jennie Summers



Rubbing the surfaces on a fine abrasive



Applying a light oil finish

Anthony replies: My simple answer is to separate the movable parts and use a fine abrasive paper, rubbing the tool parts on it until the wood cleans up and the brass looks better than when new. Respect the shapes of each component; don't round off or reshape them – and critical surfaces such as the face of a marking gauge, must stay flat. Once everything has fresh looking surfaces apply a finishing oil such as linseed, Danish or tung oil, any finishing oil will do really. It will make the tool look smart without being too shiny.



Looking as good as new

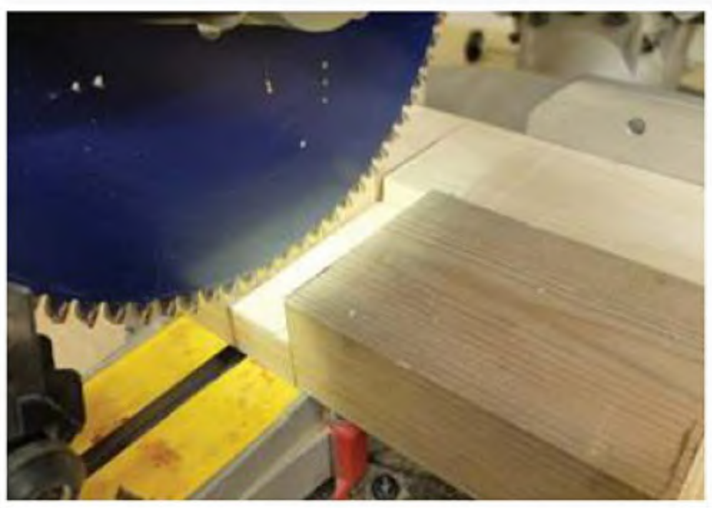
DIGGING A TRENCH

I've got a tablesaw and I was wondering whether I can do slotting with a special dado head as I've read somewhere that it is possible. Is it a safe option? I've also got a compound mitre saw which is supposed to do something similar but the cuts aren't level from back to front. Any suggestions please?

Andy Roberts

Anthony replies: The short answer with a tablesaw is no you can't, even though such a cutter head may be available. The saw arbor must be designed to take a dado head and guarding and work feeding needs to be safe and substantial to avoid the risks created by using an overwidth cutter in this way, so don't attempt this.

Your two realistic options are the mitre saw which you have tried, but the trick is to place a section of wood behind your workpiece which does reduce the width of cut, but should give a flatter bottom to the cut as the blade will pass across it completely. The other option is to use a large router fitted with a guidebush and a homemade housing jig. This is the safest and most reliable method that will give you a consistent result.



Note the section of timber behind the workpiece



Set the adjustable trenching stop



Slotting using a guidebush and matching jig

STAR QUESTION PRIZE

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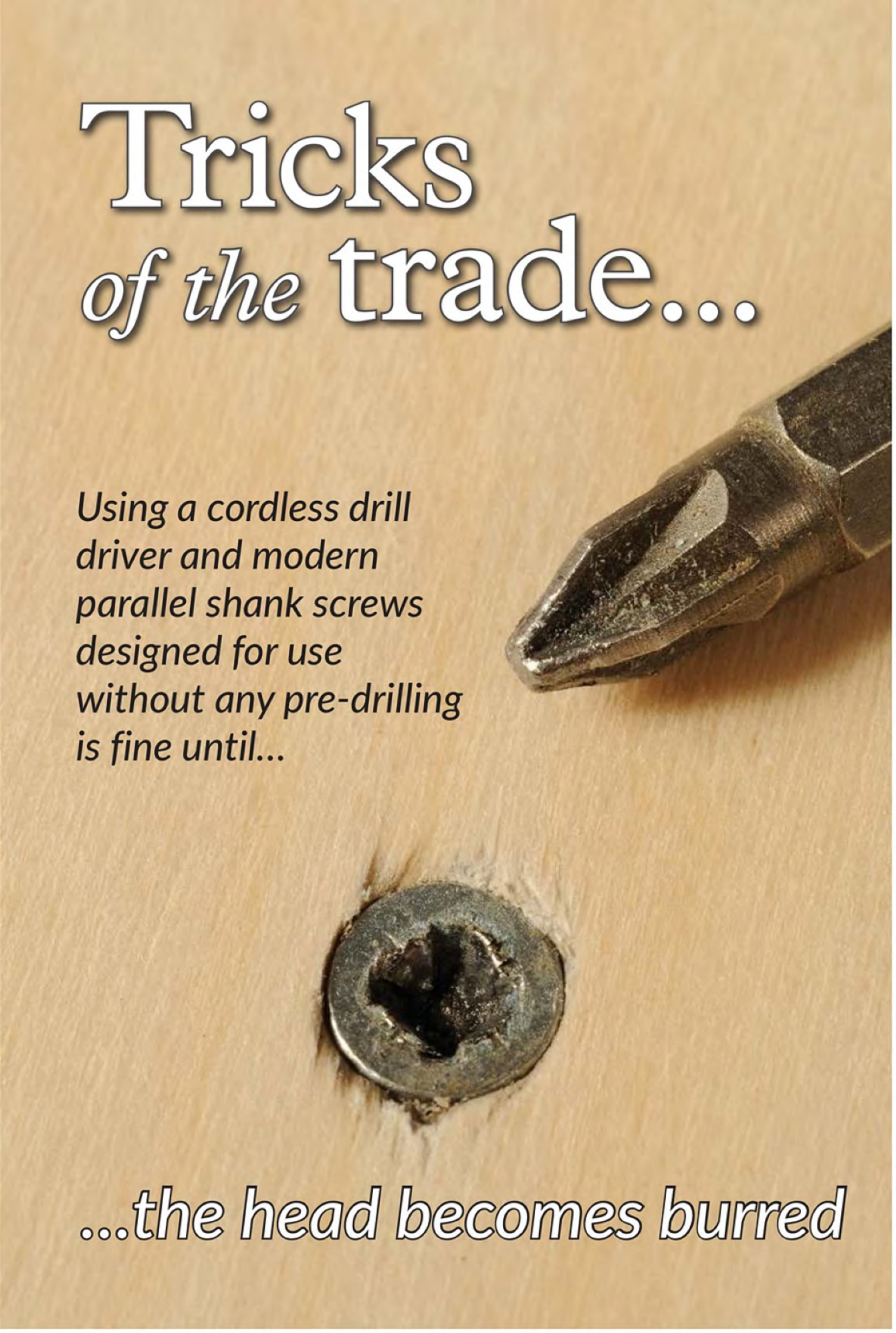


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Tricks *of the* trade...

Using a cordless drill driver and modern parallel shank screws designed for use without any pre-drilling is fine until...



...the head becomes burred

Now you're stuck. The screw will neither go in or out, a useless piece of metal holding two pieces of wood together, perhaps with the head left sticking out proud of the surface, or maybe you just need to remove the screw anyway. What to do? Thankfully there is an easy answer, which is worth keeping in your tool kit. The Trend Grabit and similar screw extraction devices are cheap and can get you out of a tricky situation. It works like this. Fit the device in your drill chuck with the burnisher end outward. Set the drill in reverse and, at slow speed, allow it to clean up the crosshead recess. Then swap it around so the extraction tip is ready to use, insert into the recess and again, in very slow reverse speed, allow it to cut and grip into the rounded-out recess so that it can gradually wind the screw back out of the hole.

Avoiding the problem in the first place

Check the driver tip is in good condition – a worn or damaged tip will transfer damage to a screw head recess

Make sure you match the driver tip size and type to the screws being driven. For example, don't use a Phillips No.2 to drive a Pozi No.1.

Use better quality screws which are engineered to withstand power driving.

Pre-drill and countersink holes in harder materials such as MDF or oak.

Consider using Torx head screws, which do limit your driving angle but prevent tip 'cam-out' due to the straight-sided head recess. ■



Extractor tip (left) and burnisher tip (right)



Go slowly when removing the screw



Phew! It's done

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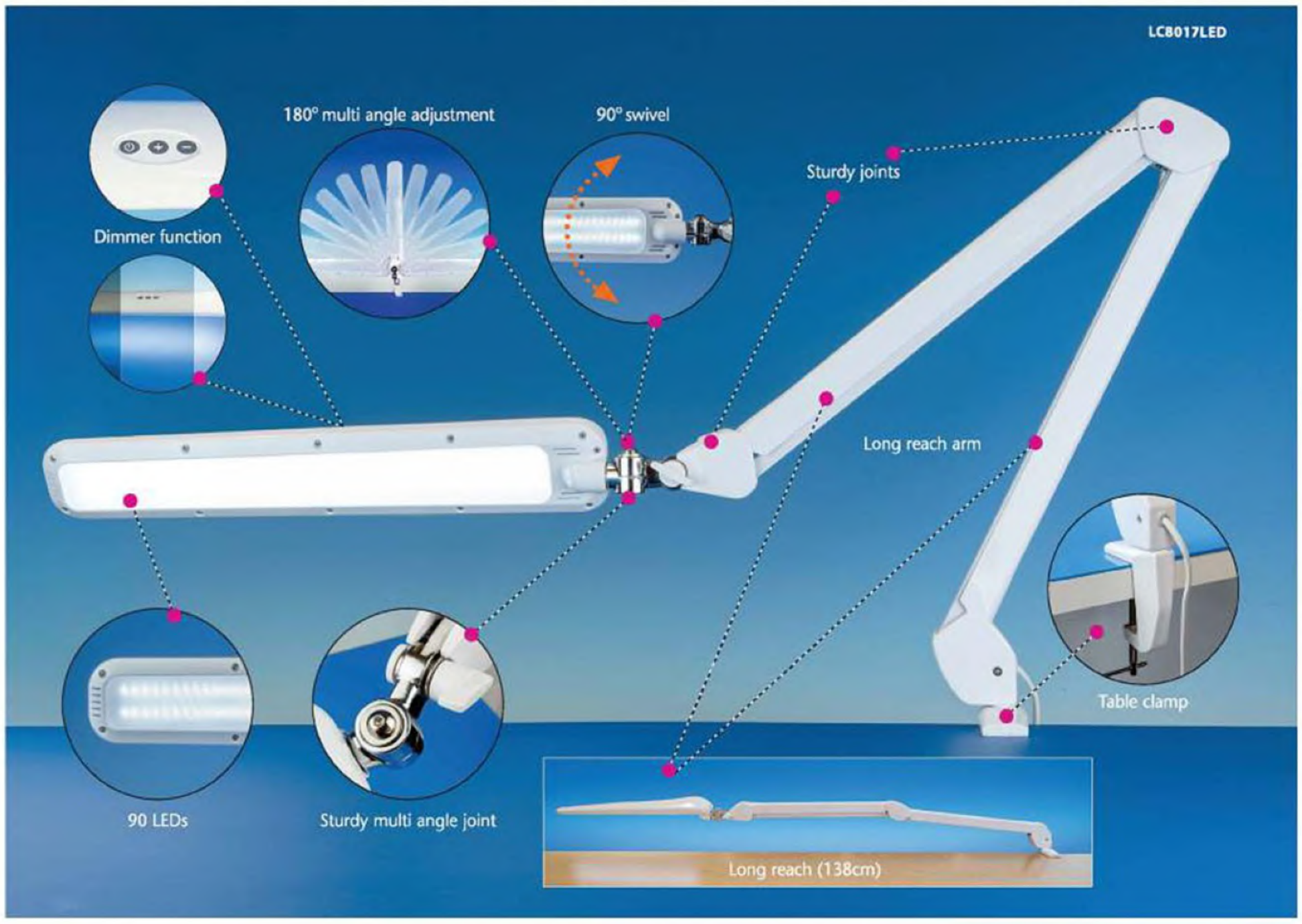
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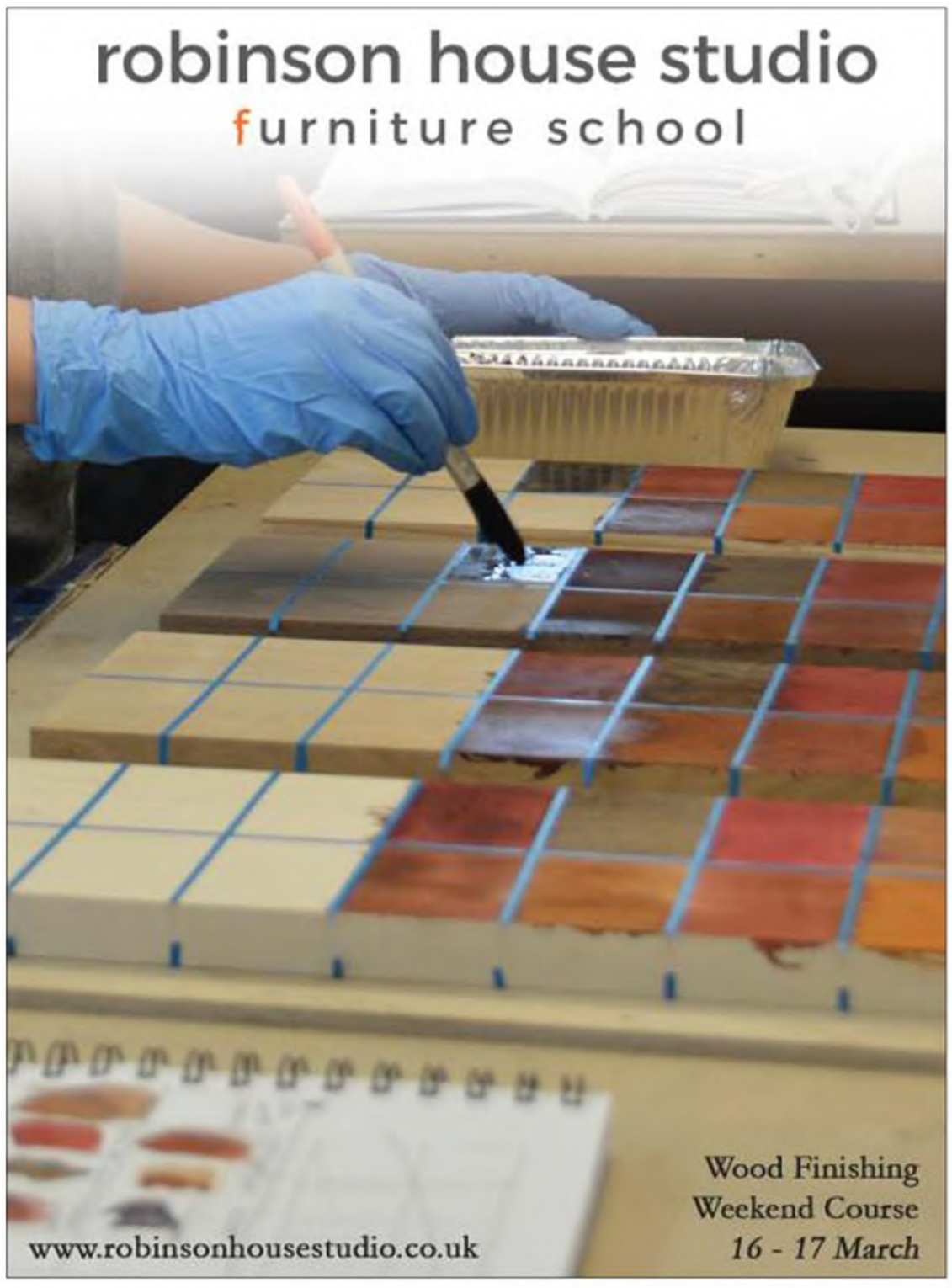


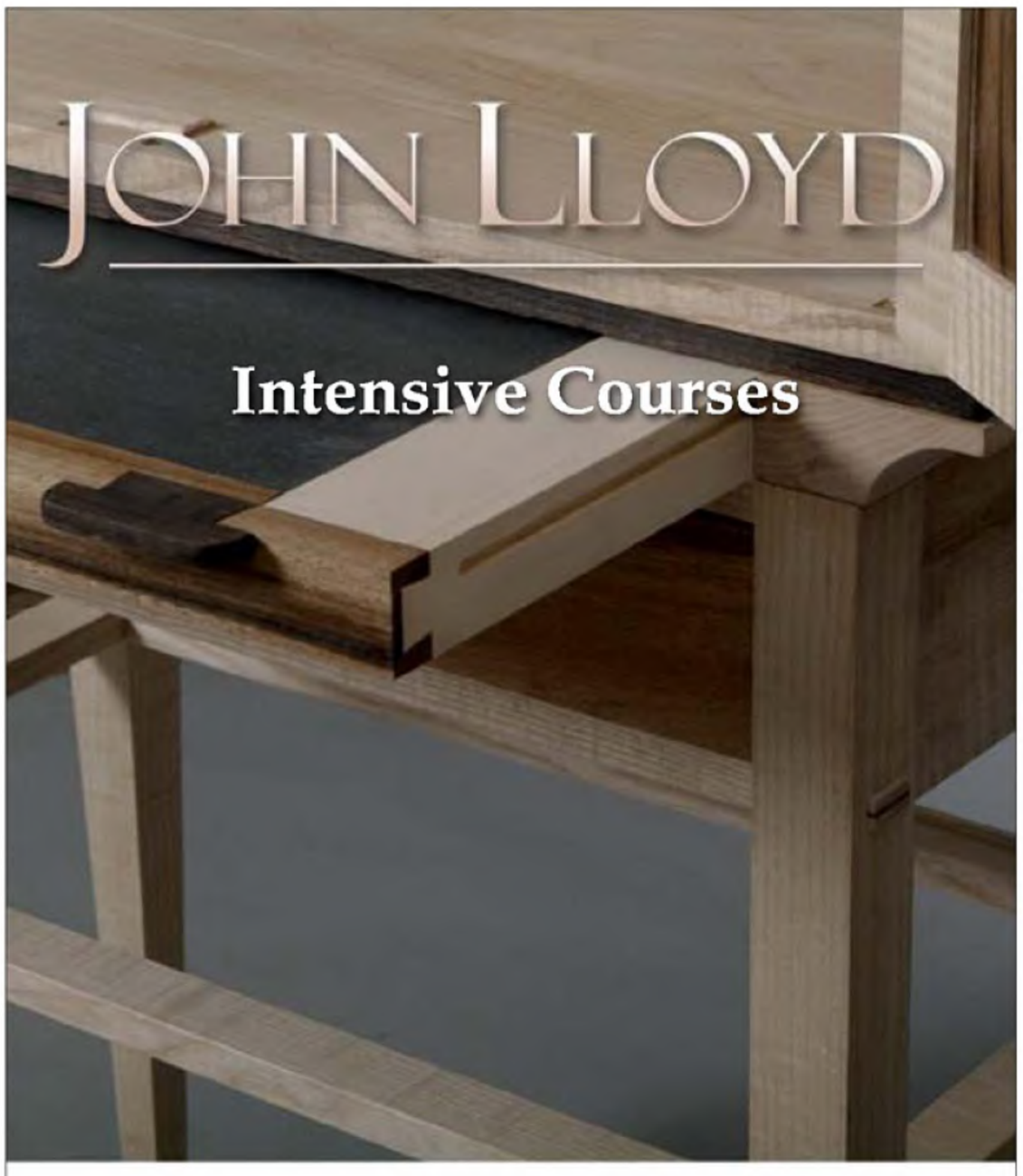


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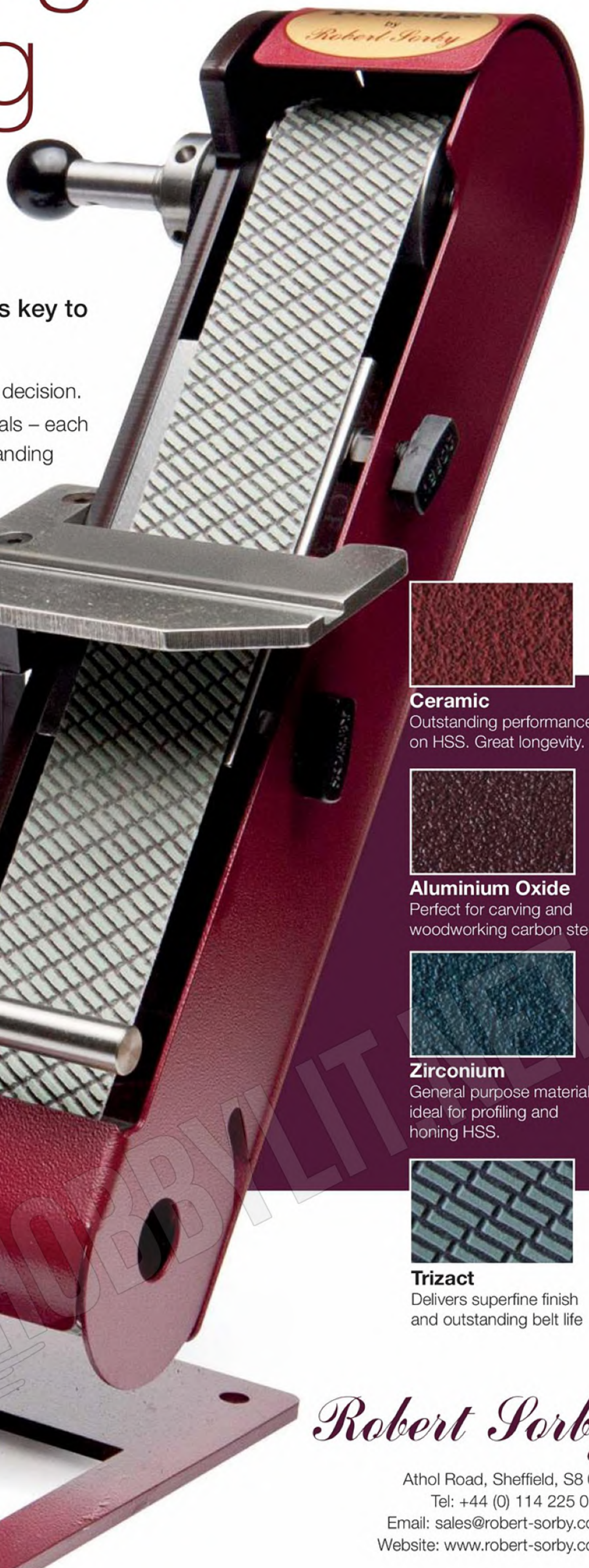
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Focus on…

Wooden water pipes

When it comes to supplying fresh water for drinking and washing, the ancients definitely took the lead



A water pipe at Blagdon pumping station, Somerset

Early water supplies

The Romans and other early civilisations – Greece, Persia, India and China – all had various forms of plumbing arrangement for towns and cities supplying clean drinking water and removing wastewater. Lead (*plumbum*) and earthenware were typically used for pipework. Following the fall of the Roman Empire these essential services fell into abeyance and it would be hundreds of years before matters were dealt with properly again. Water-borne pollution and the diseases it caused meant something needed to be done and for the wealthier folk a much more convenient supply of clean water. Over the centuries various materials have been used, such as stone or bamboo and wood.

Logjam

Nearly 500 years ago wooden pipes made from hollowed-out logs were used in England. In London, for example, the logs were tapered at one end to fit the next log and the joints sealed with hot animal fat (modern day 'fatbergs' in main drains have made the news since solidified fats hold together so well). More recently, wooden pipes such as those in Montreal and Boston from the 1800s were made using joined-up sections of wood held together with iron bands. During WWII in North America, 100,000ft of this type of wooden pipe was installed at a variety of military bases.

18th-century Edinburgh

Recently workers have unearthed an underground network of rare wooden water pipes dating back more than 200 years. Consisting of 15 pieces of elm piping, they were discovered during an excavation at George Square, Edinburgh. These were part of an underground network built in 1756 to supply drinking water. Archaeologists from AOC Archaeology Group called to examine the find used to bring the 'sweet water of the country to the centre' have described them as being in very good condition. In 1621, an act of parliament gave the go ahead for the town council to construct a three-mile pipeline to carry water from Comiston Springs to the city centre. Almost 50 years of bitter disputes over a proposed 'water tax' meant it took nearly half a century for the project to start, with a further delay of four more years for the work to be carried out. Even then, only the most affluent areas of Edinburgh would have had access to the supply. The general public would still have had to make use of water stands in the town centre, carrying buckets of water by hand.



A caricature from the time of The Great Stink

To the present day

Eventually, as wooden pipes started to rot, the pipework has been replaced with cast iron, which itself can be prone to breakage. So most modern water mains are made from ultrasonically welded plastic. But it is worth reflecting on the fact that human ingenuity down the ages, in moving clean water, has most often involved the use of wood to transport it. ■



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