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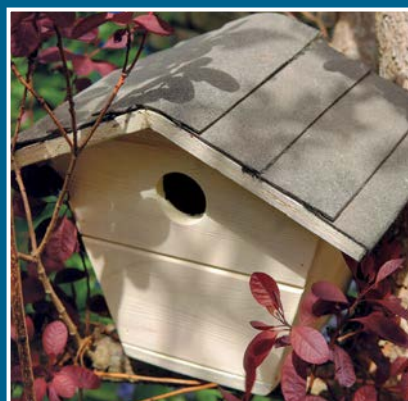
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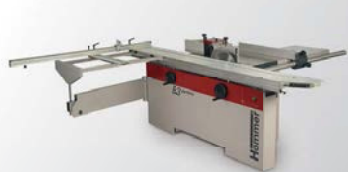
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Welcome

to the January issue of
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Turning over a new leaf

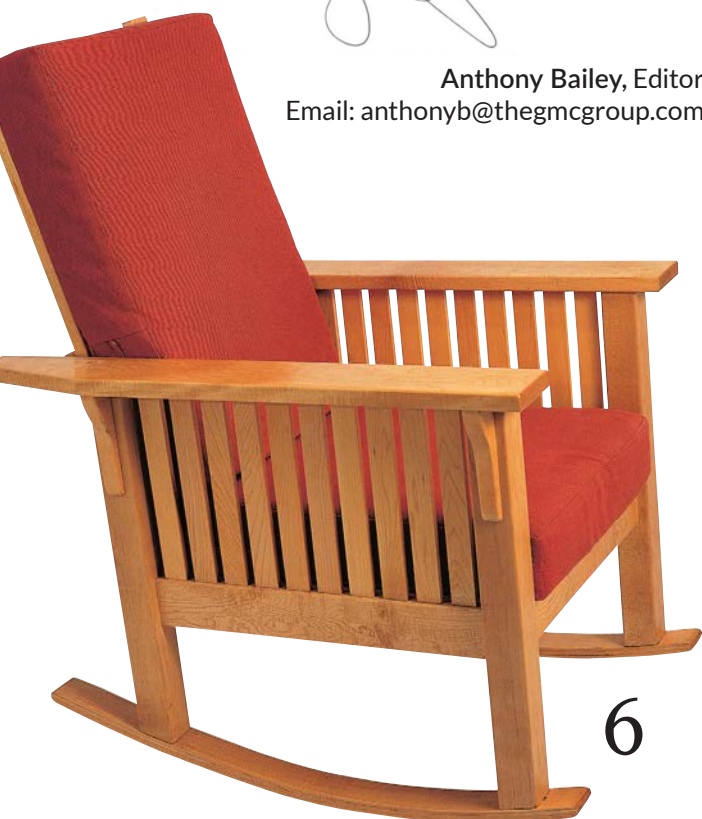
Hello everyone and welcome to the January issue of *Woodworking Crafts*. The start of a new year and resolutions made, hopefully not to be broken. We've got a few resolutions of our own here at the magazine. We are determined to bring you new and different ways of giving you useful woodworking information so check out the latest changes we have made and let us know what you think. For those more internet savvy, we have added some useful links to websites and social media which you might like to follow.

We also have a feature on the latest addition to our stable of writers, Nicola Butcher who won the IRWIN Tradesman of the Year competition a while ago. Nicola busts the notion that to be a qualified 'chippy' you have to be male and over a certain age. She is young, and going places and she will be writing a blog about her woodworking activities month-by-month, so keep an eye out for her fascinating scribblings!

We also look at timber. I don't know about you, but personally wandering among trees, I can recognise the standard varieties but I often struggle to identify the more obscure species of tree. We start with the oak (*Quercus robur*) tree – a generic term for a family of trees that worldwide number almost three hundred species. So this series is a chance to find out more about the core subject material we all rely on.

Anthony Bailey, Editor

Email: anthonyb@thegmcgroup.com



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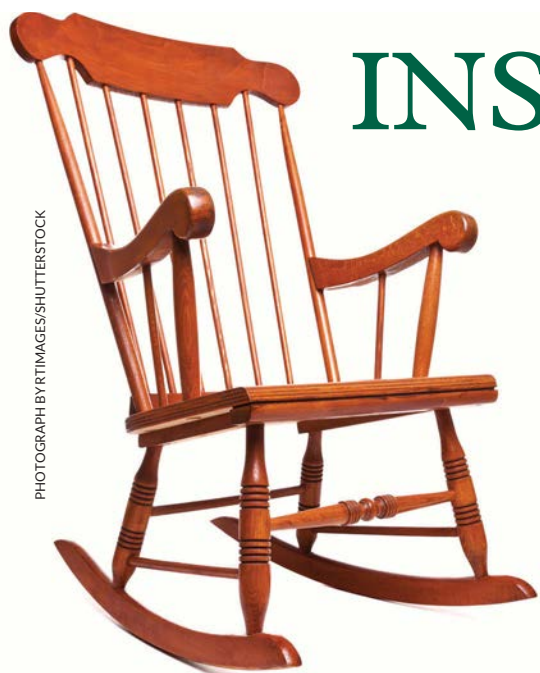
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INSPIRATION



PHOTOGRAPH BY RTIMAGES/SHUTTERSTOCK

The typical idea of a traditional rocking chair, with beautifully fashioned curves that make you want to sit back and rock to sleep

A rather nice country rocker with a decorated floral top rail, tapered spindles and a seat with rolled front edge and a swept rear



PHOTOGRAPH BY SHIPEE/SHUTTERSTOCK

A modern interpretation on a classic piece of furniture. It still has all the elements you would expect, but expressed differently

Rockin' all over the world

Fancy sitting in a comfortable rocking chair? Just lie back, pour yourself a slug of 'ole Jack Daniels and nod gently off to sleep, perchance to dream...

An unusually formal design, complete with a foot bar to rest your feet on



PHOTOGRAPH BY 360VISTA/SHUTTERSTOCK

A chunky design with a slotted backrest. Note the square topped front legs for ease of mortising the rails in



PHOTOGRAPH BY WUTICHA JANTARACK/SHUTTERSTOCK



PHOTOGRAPH BY MICHAEL PETTIGREW/SHUTTERSTOCK

With scroll arms, a leather seat and its swept back shape, this is one for the lounge

The lower profile gives comfort, as does the completely leather upholstered seat and back. The seat front edge is also rolled over for comfort



PHOTOGRAPH BY SAGIR/SHUTTERSTOCK

Arts & Crafts rocker

In an extract taken from *Furniture Workshop*, **Kevin Ley** makes a Morris-style rocking chair

'Ley' back and gently rock

PHOTOGRAPHS BY KEVIN LEY

This chair was to be part of a seating set comprising a fireside chair, a sofa and this rocker. The aim was to produce a flexible seating arrangement without resorting to a standard three-piece suite. Some aspects of the project are common to all three pieces and are repeated for convenience.

DESIGNED TO ROCK

The fundamental change to this version of the chair was to add rockers. Even though the fireside chair had been scaled down from the original American measurements, there was also still scope to reduce the seat size even further. The through-tenons in the arms and legs of the fireside version increased the making time considerably so we decided to use blind tenons on this version. This allowed the side rails to be brought up, level with the seat rails and the side slats shortened to fit. The side slats were also reduced in width, and increased in number, to further lighten the look. The end result was a chair, which was obviously linked in form and style to the fireside chair with sufficient difference in the detail to add interest. It's a 'Mummy' version of the 'Daddy' chair!

TIMBER SELECTION

The standard timber for such a chair would be oak, but the room this chair is destined for has large areas of oak

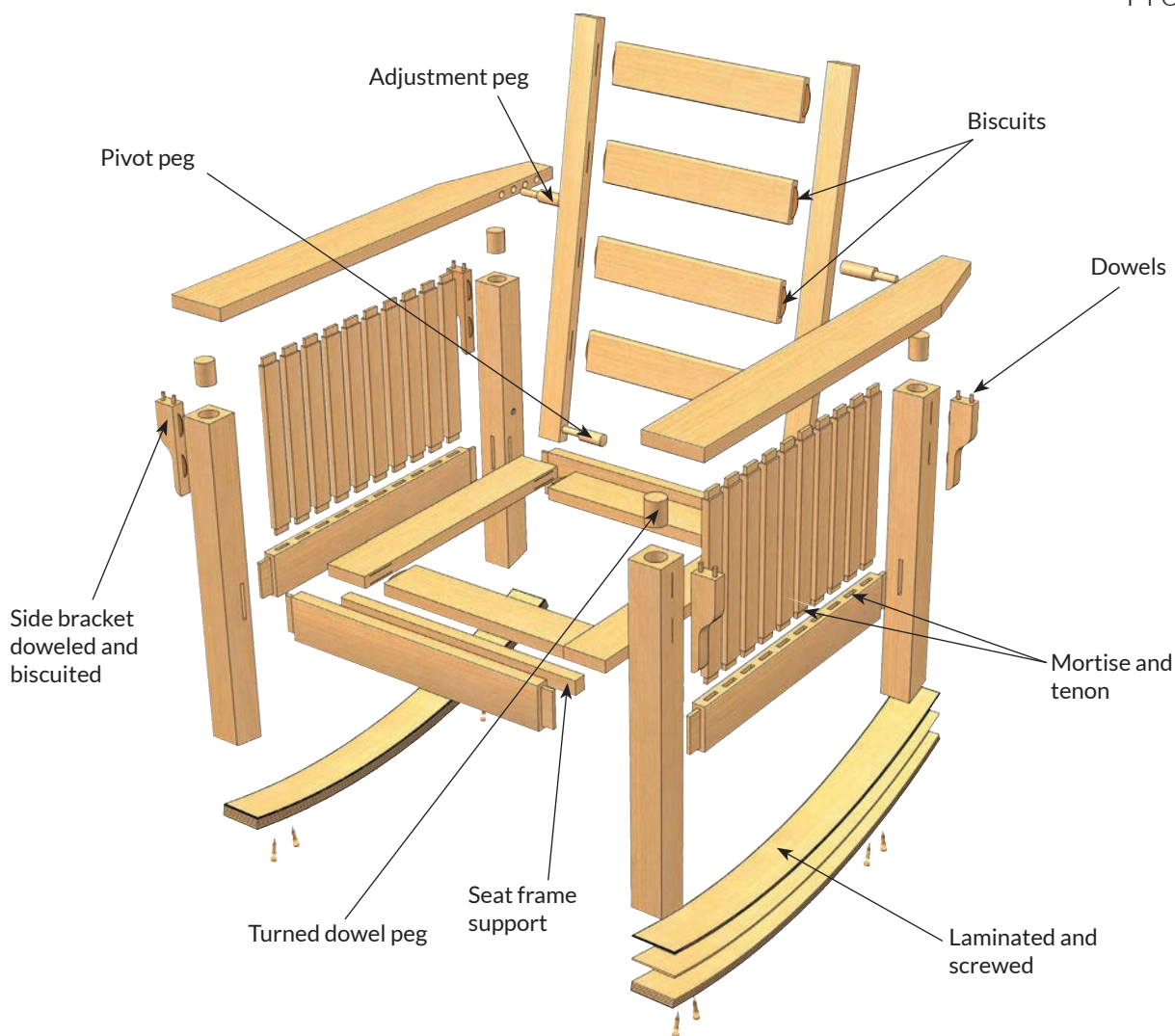
in the floor and exposed beams.

It also has pieces in elm, burr elm, and walnut, as we like a mix of woods for variety. My wife decided she wanted something darker than sycamore, lighter than cherry, and without the pronounced figure of English oak. After a lot of discussion we settled on American hard maple (*Acer saccharum*). This is a cream to pale straw-coloured, strong, close-grained timber with fine brown lines giving a nice gentle emphasis to the figure. Some have a ripple effect and I found some very nice ripple in the order and saved it for the arms of this chair. The wood is hard to work, blunts tools and can chip easily. It takes a good natural finish with a smooth,

Attractive ripple figure on the arm

silky feel, but stains unevenly. Very resistant to wear, it is used in flooring, pianos, shoemakers' lasts, and textile. It should not be confused with soft maple, which is soft, pinkish and streaked.





TIMBER PREPARATION

The advantage of using American timber is that it is, paradoxically, probably more readily available and of more consistent quality and price than some native timbers. It is also available in straight-edged, long boards and a wide range of thicknesses, helping to reduce wastage. I was able to buy a 2½in – rather than 3in-thick board for the leg posts from my local timber merchant and local joinery supplier. The timber had, however, been kiln-dried in America before shipping, and transported and stored in unknown conditions for an unknown time. I treated it as air-dried and conditioned it thoroughly in my wood store, with its dehumidifier for several weeks before use. The workshop was kept, as usual, at end-use conditions, so that conditioning continued throughout the making.

CONSTRUCTION

The sequence of construction is to make the sides, join them together to make the base, add the back frame, fix the rockers, drop in the seat frame and add the loose cushions. ➤



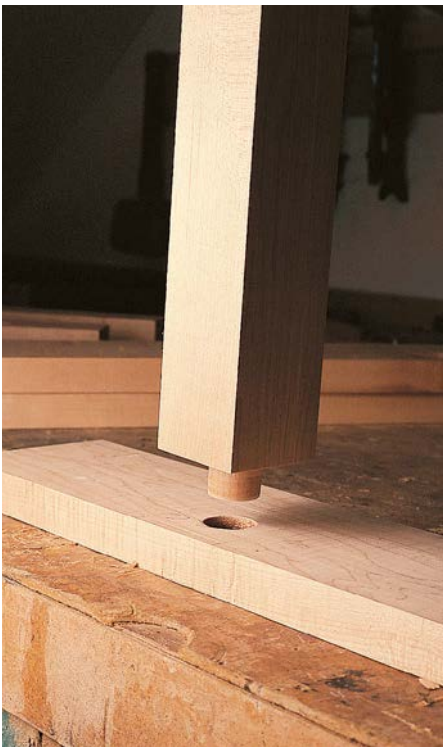
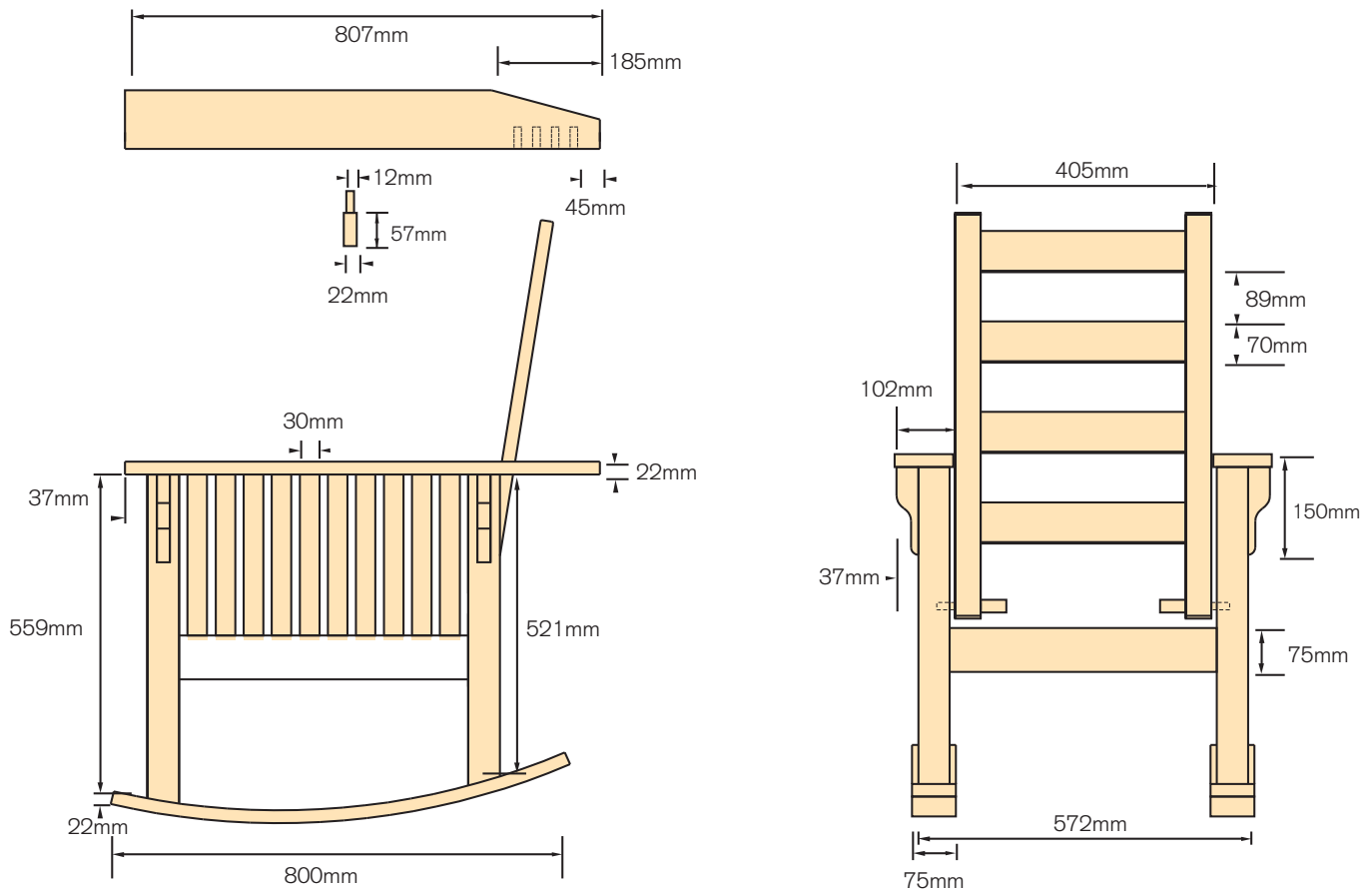
Turning the pegs



Spacer for accurately positioning the side slats



The finished pegs and spacers



Fitting the blind dowel on the leg-to-arm joint

MAKING THE SIDES

Leg posts

The leg posts were cut to size, allowing 25mm over-length and the blind mortises cut for the rails. These were cut on my planer morticing attachment and squared off with a chisel. The posts were drilled for the back pivot pins, and all edges, other than the top, radiused to 3mm with a router. The dowel pin on the top of each leg to attach it to the arm, were turned on the lathe, using my trusty sizing tool and bedan for an exact fit. The legs were carefully marked front and back, left and right.

Rails

Next the rails were cut to size and the tenons formed on the ends. The tenon cheeks were made by multiple cuts on the radial arm saw and the shoulders on the bandsaw. The tenons were cut full, and finally adjusted using a bench hook and shoulder plane, until they were a push-fit. The top and bottom

edges of the rails were also radiused to 3mm.

Arms

I cut the arms to size and drilled them to take the back adjusting pegs. Blind holes were drilled to take the post dowels. The corner was cut off the outside edge of the back end of each arm, to form the end taper. All the end grain of the arms which was finished with a block plane, and the top and bottom edges were radiused to 3mm.

Side slats

The slats were faced and thickened to 13mm, cut to length, and a short tenon formed top and bottom, again on the radial arm and bandsaws. The underside of the arms were morticed with a router and the slats check fitted. Unfortunately biscuits could not be used here as the slats are too narrow.

THE ROCKERS

The rockers were made of laminated strips of maple, which were cut 25mm over-length, 3mm thick, on the bandsaw. One side was faced on the planer, before cutting from the source piece. I cut extra pieces as insurance in case of accidents during thickening. Before thickening, each strip was fixed to a piece of 19mm MDF with double-sided carpet tape, and a fine cut set on the thicknesser. Very thin strips are likely to shatter if put through a thicknesser without a backing, and most thicknesser tables won't go that close to the knives – fortunately!

To form the curve of the rockers I made up a simple jig from ply. The strips were well coated with Titebond and clamped up with sash clamps, then a G-clamp was used at each end to stop the strips sliding out of place during the clamping up. Once set, the rockers were trimmed to length and the edges were finished with a hand plane. The front and back edges were 'nosed' by rounding over with a 10mm radius bit in the router.



Laminates for the rocker sleds glued up in the jig

Side brackets

The brackets were cut to size and shaped on the bandsaw, and belt sander, and the outside edges radiused to 3mm. The sides were dry-assembled (without the slats) and the biscuit positions to fit the side brackets were marked and cut. Holes were drilled in the top of the bracket and the underside of the arm, to take the fixing dowels.

Assembling the sides

All the parts for the sides were sanded on the belt and orbital sanders and checked for fit. The various clamps required were assembled and adjusted to size, and the parts were finally hand-sanded to 240-grit. The arm was dry-fitted to the top of the posts and glue applied to the mortice and tenon of the side rail. The side rail was clamped into position. The side was checked square and left to set. The arm was then gently tapped off, glue applied to the post dowels and arm blind holes, and all the slat mortice and tenons.

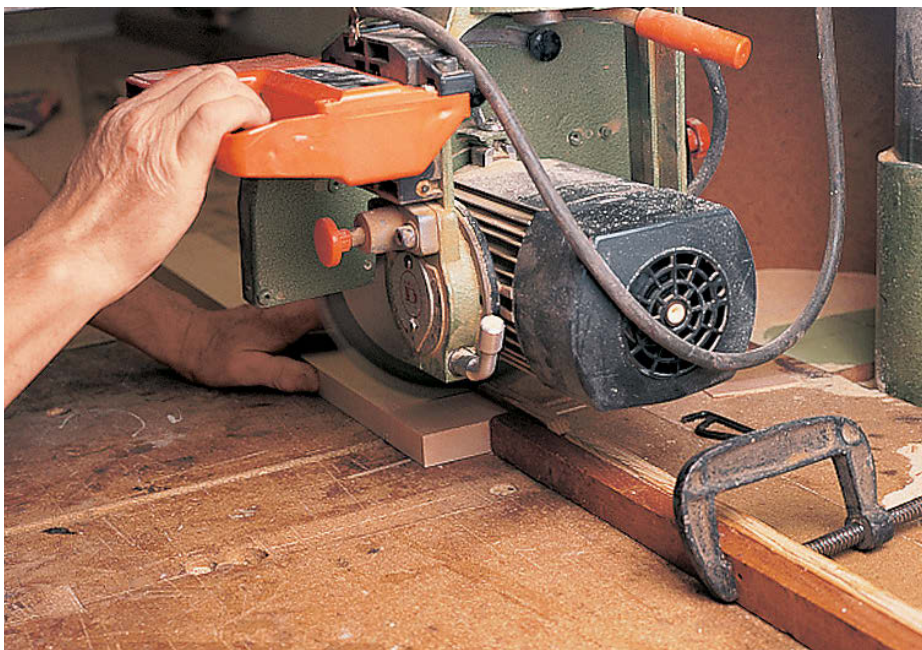
All was briskly fitted together, using a piece of ply to check the spacing of the slats, tapped home with my trusty rubber mallet as necessary, clamped up, and checked square. Once set, the side brackets, dowels and biscuits were glued, fitted, and the brackets clamped into position.

ASSEMBLING THE BASE

The complete base is formed by joining the two sides with the front and back seat rails. Glue was applied to the mortices and tenons, and clamps applied. The base was stood on my flat assembly area, checked for square and wind, and left to set. My assembly area is an 8 x 4ft piece of 1 in MDF on the floor of the workshop which has been set true with a spirit level to ensure pieces stand vertical!

FITTING ROCKERS

The base of the chair was laid on its side, the finished rockers were placed on the side of the legs, in the correct position and the line of the cut required on the legs, marked. This slant cut was made by hand, and repeated for the other side. The chair base was then turned upside-down and screws were driven through the rockers into the legs. They were driven at an angle, to form a dovetail shape, ➤



Cutting tenon cheeks on radial arm saw

countersunk into the underside of the rockers, and the countersunk holes plugged with a piece of maple. The 'in-use' angle for the chair, can be adjusted by altering the position of the chair along the rockers, before fixing. There must be a body seated in the correct, comfortable, position in the chair when this is done, to achieve the correct centre of gravity. The 'at rest' position of the empty chair may be different.

BACK FRAME

The back frame stiles were cut to size, all edges radiused to 3mm and the ends drilled for the pivot pins. The slats were cut to size and biscuit slots cut in the slats and the stiles. All the pieces were power-sanded and hand-sanded, dry-fitted, glued and clamped up.

PINS

Pivot and adjustment pins were turned on the lathe, again accuracy ensured with my trusty sizing tool! The wooden spacer washers were turned blind on the lathe, and then the hole drilled out on the pillar drill.

SEAT FRAME

This was a simple frame of hardwood, better to take the upholstery nails. I used double biscuits for the corner joints. The seat frame sits on battens screwed and glued to the front and back rails.

UPHOLSTERY

As with the fireside chair, Joan Milton who specializes in DIY upholstery supplies, kindly gave us some very helpful advice on the sort of foam and webbing to use. I webbed the seat frame with elasticated webbing and she provided the correct grade of foam, cut to size, for me to have simple box cushions made locally. We decided to have these cushions covered in the

same natural, hand-woven, cotton as the fireside chair, but in a different colour.

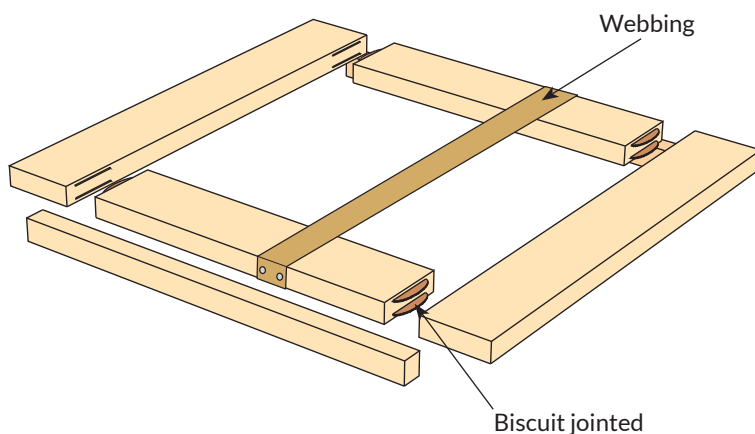
FINISH

As with the previous piece, this one was also finished with Liberon finishing oil which I prefer to some other Danish oils, as it is more penetrative and gives less colour change. Everything was checked for glue ooze, and hand-

sanded down to 320-grit. Several coats of oil were applied in the usual way and the chair left for a few days in my warm workshop to fully cure. The soothing rocking motion of this chair makes it very popular, and even with the further scaling down it is quite big enough for most adults. The figure and ripple on the arms are a particularly attractive feature. ■



Webbing on the seat frame



Furniture Workshop by Kevin Ley

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WOVEN TOP STOOL

Part 1

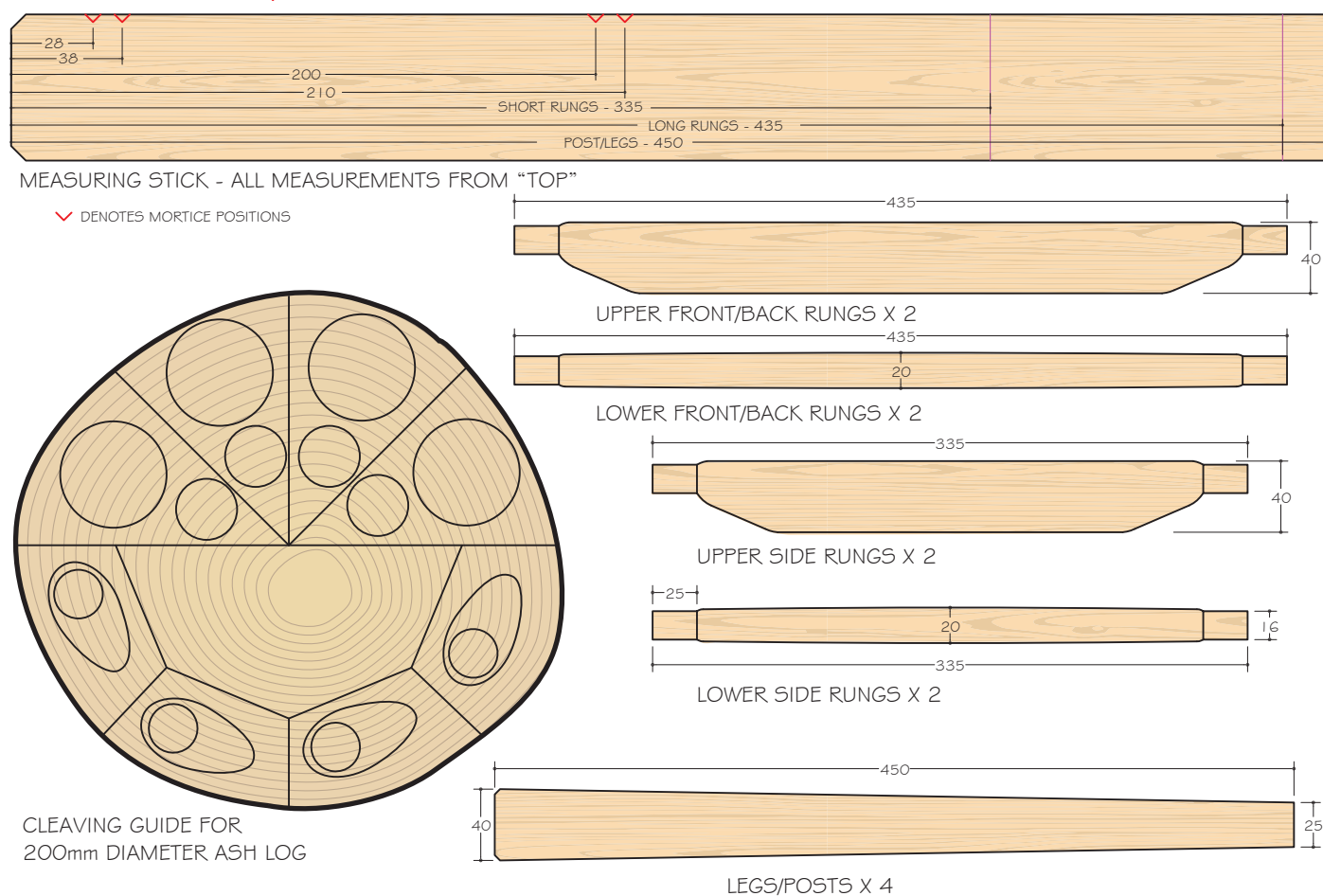
Lee Stoffer tells us how to make our own comfortable stool

Having a comfortable seat for carving is a must for me. I find a stool is the ideal solution. Being both strong and lightweight, this post and rung ash (*Fraxinus excelsior*) construction with a woven willow seat works really well for the job and makes for a great introduction to green wood chair making.

I've used sections of a large 500mm diameter log as I was making a batch of frames, but a 500mm long length of 200mm diameter straight, knot free ash should provide plenty of material for this project allowing for a few spare parts/mistakes. Select ash which has between four and 12 growth rings per inch. Oak (*Quercus robur*), maple (*Acer* spp.) or sweet chestnut (*Castanea sativa*) would make suitable alternatives to ash.

Things you will need

- Saw
- Pencil
- Club
- Froe
- Axe
- Drawknife
- Shave horse
- Tenon cutter
- Brace or power drill
- Mirror or helper

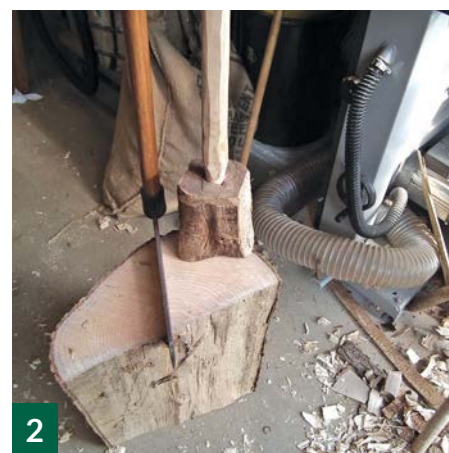


1 Cut the log slightly over the length of the longest parts, the legs. It's worth making a quick measuring stick out of scrap material for this project; spare venetian blind slats work a treat!

2 Cleave the log into sections for the various parts, split through the pith (growth centre), try to keep an even volume of timber either side of the froe to keep the splits running straight. Cleaveing will produce stronger parts than sawn timber as long as the first few growth rings around the pith are avoided.

3 Set aside the billets for the legs (posts) in a cool shady spot and start rough shaping the rungs with an axe. The lower rungs or stretchers should be hewn straight, to approximately 25mm square.

4 The top rungs should have an aerofoil profile, tapered at the ends towards the thicker edge where the tenons will be cut. Trim to length before hewing in the taper, leave at least 20mm square on the tapered ends at this stage. ➤



5 Clamping the parts in a shave horse, use a draw knife to refine the shape. The tapered ends can be reduced to a minimum of 18mm at this stage ready for the tenons to be cut.

6 The top rungs will be covered by the weave so keep them plain and functional.

7 The lower set can be more decorative if you like, square, octagonal or turned round on a lathe if you have one. I like to add detail to the stretcher that will feature in the front of the stool.

8 After shaping, the tenons can be cut. A dedicated tenon cutter is very useful for this job. I use a Veritas $\frac{5}{8}$ in diameter version which can cut a longer tenon than required. To ensure all the tenons come out the same length, cut one full length on a piece of scrap timber, trim back so the remaining tenon measures 25mm to the taper, then pop the offcut back into the cutter to act as a depth stop.

9 Before cutting tenons, trim all the rungs to the exact length marked on your measuring stick. Cut the tenons clamping the rungs in the shave horse. Left to right alignment is easy to sight, but up and down is more difficult, which is where the mirror (see photo) or an assistant comes in handy. Alternatively clamp the rung down to a level surface and use the cutters in built spirit level to gauge alignment.

10 With the tenons cut, the rungs can be set aside to dry. Moisture content should be reduced to 10% or below before assembly.

11 For the legs, mark a 40mm diameter to mark a guide size on one end of the cleft billet, a slice of bath waste pipe is useful here. Use an axe to remove the bulk of the waste. Work the billet square then knock the corners off to keep control of the shape.

12 Refine the shape on the shave horse. Keep the marked (top) end close to the 40mm size and taper each leg to around 25–30mm at the opposite end. The taper is not essential but does keep the weight down and give a more pleasing appearance.



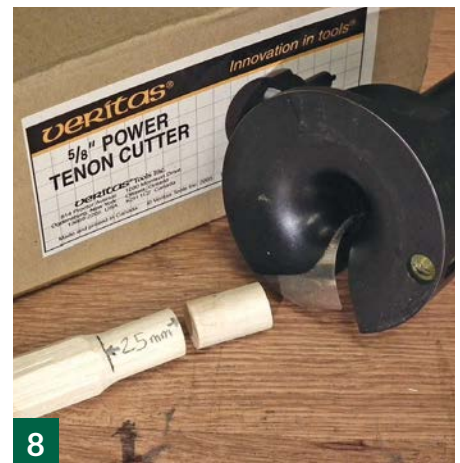
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13 Clean up the end grain on the top end and check for size using the slice of waste pipe again. Square, round or octagonal legs work best for ease of assembly later.

14 The tenons, being the most important parts to be properly dry, can be used to gauge when it's time for assembly; it's fine if the legs have a higher moisture content at this stage. It's an idea to make a spare of each element in case of issues in the drying process.

Post and rung stool assembly

15 Take the four legs and wrap a bit of masking tape around each one for labelling, hold them together 2x2 and mark each pair of visible faces as either front, back, left or right then trim them to the finished length.

16 Mark the highest mortice positions in the centre of the face opposite the front or back mark on each leg.

17 Set up a drill press with 16mm Forstner bit to cut a 25mm deep mortice. If you went for octagonal or square legs they should sit nicely on a flat surface, round legs may require clamping or a holding jig. Drill the two marked mortices in each leg.

18 Place each pair of legs and the shorter rungs along with some PVA glue, a club, a square and scrap timber on a solid surface.

19 Brush some glue to one end of a high and low rung and into the receiving mortices. Tap the rungs into place in one leg, making sure the thinner edge of the high rung is orientated away from the 'L' or 'R' mark, i.e. towards what will be the centre of the stool. ➤



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20 Glue up and add the opposite leg of the pair onto both tenons and use the scrap timber to protect the leg when tapping the joints home.

21 Check for square and that the assembled side sits flat on the bench, if not, flex to adjust before the glue starts to go off.

22 Repeat for the other side frame then set both aside in a clamp or two until the glue is cured.

23 Now mark the lower mortice positions on the faces opposite the 'L' and 'R' marks. Make sure there's a large enough surface to support assembled sides so they sit flat under the drill press and bore the holes.

24 You should notice that the lower mortice has taken a bite out of the high tenons; this will help to lock everything together on final assembly.

25 Glue and fit the longer rungs into one of the side frames then glue up the exposed tenons and remaining mortices and carefully align with the mortices on the opposite side frame before gently tapping over each tenon in turn until all the joints are nicely seated.

26 Clamp up and check for square by measuring across the diagonals. Set the assembled frame on a flat surface and check it sits nicely without rocking. If it rocks, correct this by placing the pivoting legs on some scrap timber and applying pressure to the opposite corners to flex the joints and achieve satisfactory level stance. Set aside on a level surface, preferably with some weight added to maintain position while the glue cures. ■

Contact a local basket maker to buy some willow rods. We'll be using around 50 x 6ft rods of the variety black maul for seating this project. If you're soaking your own rods they will need to soak, submersed in water for 1 day per foot, so six days in this case, then allowed to 'mellow' in water for one day before use.

In part 2, Lee Stoffer weaves his magic with the seat



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#@*&!%?! happens!

Let's be honest, we all make mistakes. But don't panic, it's only wood, there's always a solution – and we have the answers here...

Biscuit jointing

Biscuit jointing is one of the easiest, if not *the* easiest jointing method there is. But, as we know, slots can end up in the wrong place, worst of all they could be slightly offline. It's best to always do a dry assembly just to make sure, before the actual glue up.

The wrong slot

1 If something is wrong, the beauty of the biscuit is the way it can be glued into the errant slot and allowed to dry so it fills up the unwanted slot. Carefully wipe away surplus glue around the protruding biscuit.

2 Now cut off the biscuit flush with the wood, using a fine-tooth saw. Japanese saws are particularly good for this due to the fine pull-stroke teeth. A final trim with a chisel if needed and you are all ready to go again.

3 If you are in a hurry, make a new slot between the existing biscuits. The fence setting needs to be identical. You can check this by loosening the fence and plunging the jointer blade into an existing good slot and then pressing the fence down and locking it (with the power off, of course). ■



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- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
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- 370W, 230V motor
- CS4-6D

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- Includes stand
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- CS6-9C

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- Powerful, bench mounted disc sander
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- No load speed: 1490rpm
- 305mm Disc Dia.
- (1 x 60 grit sanding disc included)
- Dust extraction port
- CDS300B

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Clarke SHEET SANDERS

- Ergonomic design for optimum comfort
- CON300

FROM ONLY **£16.99** EXC.VAT
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MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190x90mm	150W	£16.99	£20.39
CON300	230x115mm	330W	£34.99	£41.99

Clarke PORTABLE THICKNESSER

- Max thickness cap. 125mm and 250mm wide
- Planing depths adjustable from 0-2.5mm
- Powerful 1250W motor
- 800rpm no-load speed
- CPT250

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Clarke OSCILLATING BELT & BOBBIN SANDER

- 450W motor
- 2000rpm spindle speed
- 1750rpm belt speed
- Dust collection port
- Inc. sleeves, drum and belt
- COEB51

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£215.98 INC.VAT

only Bobbin Sander

OTHER MODEL	MOTOR	RPM	EXC. VAT	INC. VAT
COB51*	450W	2000rpm	£134.99	£161.99

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY **£139.98** EXC.VAT
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INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

- Adjustable front handle improves control
- 7000-14000rpm

Powerful 750W motor

- 56 litre bag capacity
- Flow rate of 850M3/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CDE35B	750W	450 M3/h	56Ltrs	£139.98	£167.98
CDE7B	750W	850 M3/h	114Ltrs	£149.98	£179.98

Clarke CROSS 450W RANDOM ORBITAL SANDER

NEW

£29.98 EXC.VAT
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- Adjustable front handle improves control
- 7000-14000rpm

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

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BOSCH Power Tools

CON18LI

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powered by Li-Ion

PSR18

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CCD240	24V	1	£47.99	£57.99
Bosch PSR18	18V	1	£54.99	£65.99
CON18NI	18V	2 x Ni-Cd	£69.98	£83.98
CON18LI	18V	2 x Li-Ion	£89.98	£107.98

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- CONSN18LIB

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CCT48	Cordless	4.8V Ni-MH	£28.99	£34.79
CESN2	Electric	18/18	£39.98	£47.98
CONSN18LIB	Cordless	18V Lithium-Ion	£114.99	£137.99

Clarke BELT SANDERS

Clarke

- Ideal for surface removal, sanding and finishing
- ABRASIVE SANDING BELTS IN STOCK
- Makita
- BS1

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MODEL	MOTOR	M/MIN	EXC.VAT	INC.VAT
Clarke BS1	900W	380	£34.99	£41.99
Clarke CBS2	1200W	480	£76.99	£92.99
Makita 9911	650W	75-270	£89.98	£107.98

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- Ideal for DIY & Hobby use
- Dual purpose, for both finishing & sizing of timber
- CPT800

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MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£209.99	£251.98
CPT1000	10"	120mm	£289.00	£346.80

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- Run big 3 phase woodworking machines from 1 phase supply
- Variable output power to match HP of motor to be run
- PC60

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CONVERT 230V 1PH TO 400V 3PH

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Einhell	210/30	55/120mm	£56.99	£68.39
TC-MS 2112	210/30	55/120mm	£57.99	£69.39
Evolution	210/30	55/120mm	£57.99	£69.39
Fury 3-B	210/25.4	50/120mm	£57.99	£69.39
TC-SM2131#	210/30	62/310mm	£119.98	£143.98
Einhell	250/30	75/340mm	£159.98	£191.98
SM2534#	250/30	75/340mm	£159.98	£191.98

Laser Guide ± Sliding Compound

Clarke ELECTRIC HEATERS

DEVIL 6003

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DEVIL 7003

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	£74.99	£89.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£119.00	£142.80
DEVIL 7009	400V	9	£139.98	£167.98
DEVIL 6015	400V	5-10-15	£179.00	£214.80
DEVIL 7015	400V	15	£199.98	£239.98
DEVIL 6025	400V	22	£289.00	£346.80
DEVIL 7025	400V	22	£319.00	£382.80
DEVIL 7030	400V	30	£359.00	£430.80

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Offering low cost, efficient heating

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#Dual Volt 110V/230V
*stainless steel

MODEL	MAX OUTPUT KW	EXC. VAT	INC. VAT
Little Devil II	10	£64.99	£77.99
Little Devil SSI	10.3	£84.99	£101.99
Devil 700	15	£94.99	£113.99
Devil 900	24.9	£139.98	£167.98
Devil 860SS#	31	£149.98	£179.98
Devil 1600	36.6	£169.98	£203.98
Devil 2100	49.8	£259.00	£310.80

Clarke PROFESSIONAL BANDSAWS

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

FROM ONLY **£389.90** (EXC.VAT) **£466.80** (INC.VAT)

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS300	305mm/12"	165mm	115mm	£389.00	£466.80
CBS350	340mm/14"	225mm	160mm	£479.00	£574.80

Clarke PROFESSIONAL BANDSAWS

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

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MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS300	305mm/12"	165mm	115mm	£389.00	£466.80
CBS350	340mm/14"	225mm	160mm	£479.00	£574.80

Clarke DRILL PRESSES

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

FROM ONLY **£66.99** (EXC.VAT) **£80.39** (INC.VAT)

B = Bench mounted F = Floor standing

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CDP102B	350 / 5	5	£79.98	£95.98
CDP152B	450 / 12	12	£134.98	£161.98
CDP202B	450 / 16	16	£179.98	£215.98
CDP10B	370 / 12	12	£194.99	£233.99
CDP352F	500 / 16	16	£219.98	£262.80
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Clarke HALOGEN INFRARED HEATER

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Clarke ROUTER TABLE

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Clarke ELECTRIC POWER FILE

Variable belt speed

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- Black & Decker

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Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

- Variable speed

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Clarke 13" MINI WOOD LATHE

Ideal for enthusiasts/hobbyists with small workshops

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

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Clarke MITRESAW STAND

Suitable for most sizes/makes of saw

- Inc. outriggers & rollers

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Clarke ROUTERS

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Clarke GRINDERS & STANDS

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Clarke DETAIL SANDERS

Perfect for smooth and fine finishing along with hard to reach areas of surfaces

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Clarke SCROLL SAWS

50mm max cut thickness

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PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Above: Leaves and acorns of the English oak

Left: An English oak (*Quercus robur*)

Tree for Life

A brand new series looking at trees, timber and their uses

We decided to go looking for interesting and more obscure facts and useful working information on trees. Where better to start than the mighty oak?

The words 'hearts of oak' stirs an impression of a tree that is strong and mighty and reliable, which indeed it is – but which oak are we talking about? Worldwide there are more than 270 species of oak excluding those we know of from pre-history!

Here are the two most common types that you can find in the UK:

English oak

English oak or pendunculate oak (*Quercus robur*). This sometimes produces local variants as tiger oak (when quartersawn) or brown oak due to growing conditions. The wide spreading 'field oak' with a level underside to the leaf canopy where it has been grazed, is the quintessential image of an English meadow landscape.

Sessile oak

Sessile oak (*Quercus petraea*), like the English oak, is home to lots of wildlife from plants to insects and birds. It differs in that the acorns are not carried on stalks (peduncles) but on the outer twigs (sessiles). It has a straighter trunk than the English oak.

Typical uses

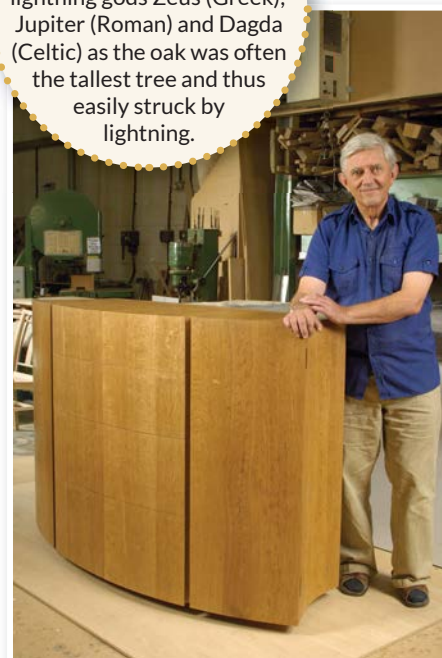
Shipbuilding, timber framed houses, furniture, flooring, veneers and barrels for wine and spirits. Bark for medicinal anti-inflammatory use.

Timber conversion

English oak is typically sold as sawn waneyedge boards and can produce quite a bit of waste because of the growing behaviour of the trunk, with its thick rather deformed squat shape.

Did you know?

The oak was considered sacred by the thunder and lightning gods Zeus (Greek), Jupiter (Roman) and Dagda (Celtic) as the oak was often the tallest tree and thus easily struck by lightning.



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Designer maker Martin Grierson with a curved oak sideboard made by him



PHOTOGRAPH COURTESY OF JOHN BULLAR

A section of a typical oak, showing the distinctive figure and 'ray' pattern (inset)

Sessile oak is much straighter but still gives some waste. Nowadays it is unusual to have logs quartersawn because of economics and the method of resaw machining, which is only capable of 'through' cuts. This is a shame because oak on the quartering can show exceptionally fine ray-figuring. However, it can still be found in the top and bottommost slices in a log.

History

Oak has been the wood of choice down the ages from medieval times onwards for shipbuilding, house framing and for tanning leather. Wealthy Tudor homes had oak panelled walls and furniture. Ships, especially for naval use, have been built of oak, the crooked nature of the branch structure being ideal for hull shapes. HMS *Victory* used about 6000 trees, mostly oak. Old ships timbers were often recycled as beams in timber framed houses. Oak bark was used for the process of tanning leather. Oaks were often cropped when relatively young as they were more manageable and could be coppiced like hazel.



PHOTOGRAPHS COURTESY OF WIKIPEDIA COMMONS

Above: HMS *Victory* is currently undergoing heavy restoration



PHOTOGRAPHS COURTESY OF SHUTTERSTOCK

Left: Timber framed Tudor house in Stoke-by-Nayland, Suffolk



Below: The sessile oak (*Quercus patraea*)

Inset: Its leaves and acorns

Did you know?

The sessile oak is the national native tree of Ireland. It is also common throughout Europe.



Above: Arts & Crafts style sideboard by Ian Cresswell

Choosing the timber

When you are trying to work out how much timber to buy for a project you may need up to 50% more than the job would suggest, due to removing the waney edge and working around natural defects and splits. Oak boards 'peak' in the middle making it impossibly bowed and weak right in the centre of the heartwood, so a first longitudinal saw cut is inevitable, which affects how it can be used. ➤

Below: (L-R) Burr, brown and bog oak turned bowls



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Working characteristics

- English oak is harder to work than more even, softer grained American white oak or Japanese oak.
- You can't beat really sharp edge tools if you want a good trouble-free finish without too much effort.
- Always respect grain direction so you don't tear angled grain.
- When routing burning can occur, so make a final lighter cut to remove the evidence.
- Chamfers are visually and touch-wise more pleasing than roundovers or complex profiles.
- Oak carves well, but not for fine detail because of the coarse grain structure. It doesn't bend well, thus not suitable for curved lamination.
- It is a dry non-greasy wood, the porous grain makes it a natural for



A special Japanese oak pullsaw

glue jointing. A hand scraper will give a good result after planing.

- Oak only needs a sealer coat, such as hard wax oil and then paste wax unless you need a tough coat.
- Wirebrushing the grain and rubbing in liming wax creates a distinctive appearance.
- It can also be darkened through a process called 'fuming' using strong ammonia.
- Unfinished oak will stain badly if damp or wet due to the presence of tannin reacting with traces of iron.



A turned oak goblet



Carving a linenfold panel

Food

Acorns from 'white oaks' (not the English oak) can be processed and turned into food. The tannins are removed by a process called leaching. This makes them safe and removes the bitterness. They are a source of vegetable protein and can be cooked like chestnuts or ground to turn them into flour for baking.

Diseases

Like most native species the oak has its enemies – acute oak decline, chronic oak decline, the oak processionary moth and powdery mildew.

Make your own discoveries

Why not visit your nearest arboretum, stately home or urban park and see



Above: Oak leaf mildew

Right: Richard Williams' own workshop barn conversion in Buckinghamshire

which unusual trees you can identify? Let us know if you find something unusual, send a photo and details and we can publish it! Check out: The Tree Council www.treecouncil.org.uk ■

The Baginton oak, Warwickshire is at least 350 years old

Fascinating facts

- The *Magna Carta* and most documents until the 19th century were written on vellum, made from calf skin using a dense black ink derived from the oak gall which is itself created by the presence of the oak gall wasp. Strange to think a tiny wasp and a diseased lump on an oak tree can both record and make history.
- 29 May was once celebrated as Oak Apple Day in honour of King Charles II, who hid in an oak tree at Boscombe House to escape the Roundheads.
- Oak trees only start producing acorns at forty years in age but can live for many hundreds of years.
- Although rarely having the chance to be celebrated, an 80th wedding has oak as its symbol.





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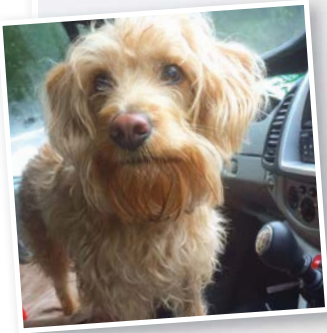
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Riley, aka 'Vandog'

Working in a man's world...

Nicola Butcher is here to tell us how she came to be named UK and Ireland's Ultimate Tradesperson, but first an introduction from the Editor...

One of the things we Editors get involved with, which we take seriously but also enjoy, is being part of the judging panel for the annual IRWIN Tradesman of the Year competition. In 2016, each month a different winner was chosen and the finalists selected shortly before the 2016 Build Exhibition at the NEC Birmingham, where the lucky winner was announced by none other than George Clark, architect and presenter of 'Amazing Spaces' on Channel 4. There were several standout finalists, but one in particular caught our attention because of her desire to succeed in what is still predominantly a man's world – i.e. building trades. In fact, she has done college talks which are helping to support and advance the role of women in the construction industry, she wanted to expand her business further (part of the prize was having an apprentice to help her) and good use of social media to connect with potential future, and existing clients. So a very warm welcome to Nicola Butcher, and her steadfast companion Riley (otherwise known as 'Vandog'). Nicola is a qualified carpenter working in the Stevenage area, and she doesn't forsake her femininity just to be like 'one of the boys'!



Each month, Nicola will bring you a blog of her latest activities so you can find out all about the stresses, strains and successes of being a self employed 'chippy'.

FROM NICOLA – my first blog

It feels a bit strange writing this column for a woodworking magazine, when it was only a few months ago that I was sat in my van with my dog Riley flicking through the pages. It's fair to say these last few months have been a totally unexpected adventure, and after being named UK and Ireland's Ultimate Tradesperson by Irwin Tools in October, I'm delighted that writing a monthly blog is part of this adventure.

There are parts of the last few months that have certainly felt surreal but the majority of the time I'm just a carpenter from Hertfordshire, running my own business and enjoying being a girl on the tools. I'm going to be using this blog to tell you about some of my most favourite projects, general day-to-day life and, of course, my dog Riley.



Nicola receiving her prize from George Clark, architect and presenter of Channel 4's 'Amazing Spaces'.



My working day

Day-to-day, the alarm goes off at 6am and, particularly in this weather, I make the most of keeping warm in bed while I check my diary, have a look on social media and respond to any important messages. By 7am, I've got myself out from under the duvet, and Riley and I start our adventures in the van. Usually, we stop to collect whatever materials we need and then we are ready to start work by 8.30am at the latest.

The majority of my work is for private clients so I'm in their homes and focused on 2nd fix internal carpentry, which means I get to meet lots of clients in any given week and I get to show Riley the sites as we go from job to job. Occasionally, I will lend my hand to small joinery projects, which I really enjoy and would like to do more of in the future. As my business grows, hopefully I can get myself a workshop or a shed depending on my success, then I can do more joinery projects and whistle my Sundays away making bespoke items for my clients' homes.

My day could be a variety of projects such as, hanging doors, fitting skirting, kitchen fitting, building fitted wardrobes or even alcove units, like the ones pictured. I'd seen lots of my carpentry friends tackle jobs like this before and when the opportunity came along for me to work on this I was really keen to learn, practice and see what I was capable of producing. I love projects where I get to do new things and expand my experience and thankfully, my client loved the results, too!

After my working day is over I will usually find myself going to a new customer's house to quote for some work they need completing. Most of my work comes to me as a result of recommendations from previous clients for which I am both incredibly thankful and proud.

When I finally land back at home, there is often a pile of paperwork waiting for me after dinner. Whether it's quotes, invoices, updating social media, arranging meetings or trying to write a blog, I always have Riley for a bit of company and given that I love what I do so much and am slightly addicted to social media, it actually isn't such a bad way to spend an evening. With that, the day ends and so too this month's blog. Thank you for taking the time to read this, it means a lot and am looking forward to sharing more with you next month.

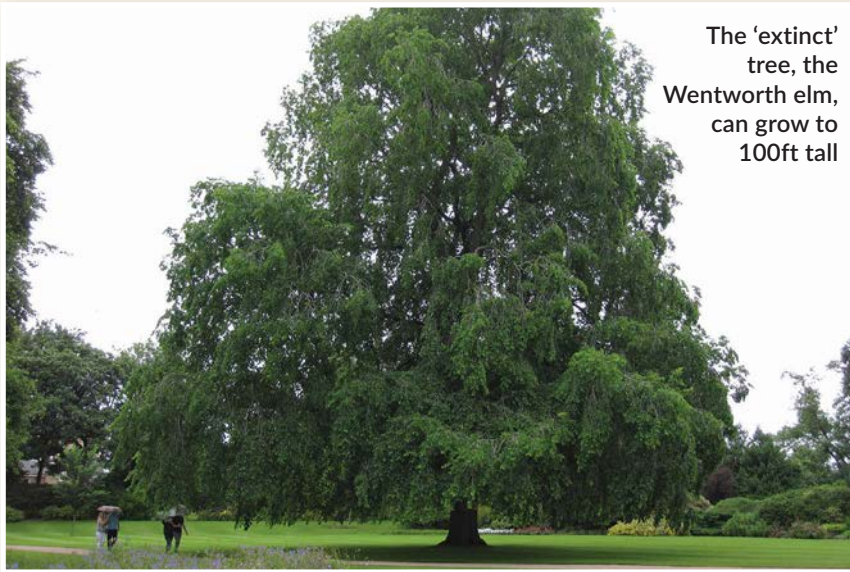
If you have any questions, examples of your work or a dog that fancies meeting Riley, you'll find me @thefemalechippy on Twitter. Stay warm!

Nicola xx



Some examples of Nicola's work

NEWS & EVENTS



The 'extinct' tree, the Wentworth elm, can grow to 100ft tall

PHOTOGRAPHS BY WIKIPEDIA

Extinct tree found in Queen's garden

In the Queen's garden, Palace of Holyroodhouse in Edinburgh, two 100ft Wentworth elms have been identified – a form of elm believed to be extinct. The two trees were discovered following a recent tree survey, despite being among the most photographed trees in the garden.

The Wentworth elm (*Wentworthii Pendula*) trees are believed to only have survived because City of Edinburgh Council have been surveying and removing diseased elms since the 1980s, or else a great number more elms could have been lost. Scientists have said the Wentworth elm was most likely introduced in the late 19th century, but was thought to have been wiped out in the late 20th century through disease. Since the 1970s, somewhere between 25 and 75 million elms

across the UK have been lost due to Dutch elm disease. Archives already show three Wentworth elms arriving at the Botanic Garden from Germany in 1902. The single Wentworth elm died in 1996 when it succumbed to Dutch elm disease.

Dr Max Coleman, the Royal Botanic Garden Edinburgh told the BBC: "It seems very odd that these massive trees [...] in the grounds of the palace have gone unrecognised until now." Although the trees have now been identified, it is not clear where they came from and curators, and activists at the royal household along with the RGBE are now working hard to find out more about their origins.

Contact: Royal Botanic Garden Edinburgh
Web: www.rgbe.org.uk



The Queen's palace of Holyrood House in Edinburgh was where the 'extinct' species were found

Winning schemes plant more trees in The National Forest

The National Forest has approved applications which will contribute nearly 9000 trees and 5.5ha of woodland and other habitats to the Forest. Four new woodland creation schemes have been awarded funding through the scheme; the National Forest Changing Landscapes Scheme. These schemes will further comprise a small mixed woodland providing landscape and wildlife benefits along with permissive access; a new woodland fringing a new pond for fishing, linking to an existing scheme within the River Mease Special Area of Conservation contributing further to wildlife.

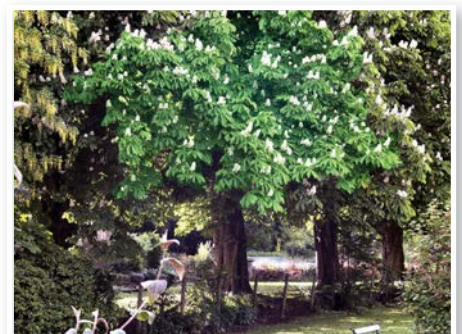
Contact: The National Forest
Web: www.nationalforest.org

Check your Chestnut trees!

The Woodland Trust and the Forestry Commission are urging the public to check their chestnut trees, as they're under attack from imported pests and diseases. Both woodland charities have released symptoms to look out for.

- Dead bark becomes visible as a sunken canker
- Bark is killed rapidly, the stem is girdled without any callus formation
- Swelling and subsequent cracking of the bark
- Masses of yellow-orange to reddish-brown pustules
- Pale-brown mycelial fans in the inner bark

If you are concerned about chestnut trees in your local area report it via the Forestry Commissions Tree Alert webpage: www.forestry.gov.uk/treelalert
Contact: The Forestry Commission
Web: www.forestry.gov.uk



PHOTOGRAPH BY BOB CHAPMAN

Be sure to look out for signs of infection

Woodworking shows 2017

The Stitching, Sewing and Hobbycrafts Show

When: 2–4 February, 2017

Where: EventCity, Phoenix Way, Stretford, Manchester M41 7TB

Web: www.stitchandhobby.co.uk

Spring Fair

When: 5–11 February, 2017

Where: NEC Birmingham, UK

Web: www.springfair.com

The Midlands Woodworking and Power Tool Show

When: 24–25 March, 2017

Where: Newark Showground, Lincoln Rd, Winthorpe, Newark NG24 2NY

Web: www.nelton.co.uk

Yandles Woodworking Show

When: 7–8 April, 2017

Where: Yandle & Son Ltd, Hurst Works, Hurst, Martock, Somerset TA12 6JU

Web: www.yandles.co.uk

The Contemporary Craft Festival

When: 9–11 June, 2017

Where: Mill Marsh Park, off St John's Lane, Bovey Tracey, Devon TQ13 9AL

Web: www.craftsatboveytracey.co.uk



The London Design Festival

The Stock Gaylard Oak Fair

When: 26–27 August, 2017

Where: Stock Gaylard House, Stock Gaylard, Sturminster Newton DT10 2BG

Web: www.stockgaylard.com

The London Design Festival

When: 16–24 September, 2017

Where: Throughout London, UK

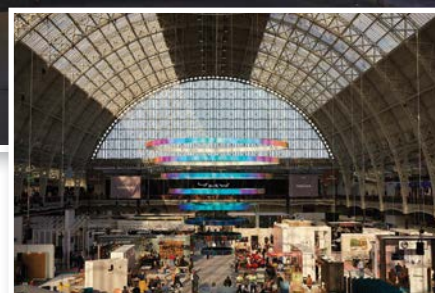
Web: www.londondesignfestival.com

100% Design

When: 20–23 September, 2017

Where: Olympia, Hammersmith Rd, London W14 8UX

Web: www.100percentdesign.co.uk



100% Design



The Midlands Woodworking and Power Tool Show

PHOTOGRAPH COURTESY OF 100% DESIGN

PHOTOGRAPH COURTESY OF MIDLAND WOODWORKING AND POWER TOOL SHOW

Web links for you

Instagram

- Lowfatroubo – Our own *Furniture & Cabinetmaking* Editor Derek Jones, has built quite a following with lots of fascinating posts, well worth a look.
Web: www.instagram.com/lowfatroubo

- Walkermooertools – Check out the video of a damascus steel marking knife. I just love damascus steel, the making and shaping of it, beautiful.
Web: www.instagram.com/walkermooertools

- Jamiewardfurniture – The go-to guy if you want to learn furniture making skills, keeping the craft alive.
Web: www.instagram.com/jamiewardfurniture

Pinterest

- Woodworking Crafts magazine – Another shameless plug, but this time it's my magazine. Following these pins is a great way to find out what is in the next issue.
Web: pinterest.com/abailey0191/woodworking-crafts-magazine

- Mike Trejo – This guy has pulled together some great and some wacky ideas that would make excellent projects.
Web: pinterest.com/miketrejo79

Twitter

- West Dean College – There's always something new and interesting happening at West Dean, West Sussex including a lot of short craft courses.
Web: @westdeancollege

Youtube

- How to Square, Flatten, & Dimension Rough Boards by Hand from Wood and Shop – the best part of half an hour's viewing, but a great way to learn board flattening technique by hand – everyone should try it!
Web: www.youtube.com/watch?v=Ojeul33vXL4



Woodland ways

PHOTOGRAPHS BY GARY MARSHALL UNLESS OTHERWISE STATED

Spile banking vs revetments

'What is spile banking?' we hear you ask, Gary Marshall is here to explain

As a lad I lived next to some cottages known as numbers 1, 2 and 3 Spile Bank. At that point, I didn't know what 'spile bank' even meant. I've since learned. Until fairly recently it was difficult to find examples of spile banking, but lately some fine examples are appearing around the country. I've even used some spile banking next to a small stream at home.

So what is 'spile banking?' The Oxford English Dictionary defines 'spile' as a 'wooden peg, spigot: large timber for driving into ground, pile.'

Certainly all the spile banking I've seen has stout upright poles driven into a bank or river bed. These can be any timber available, but alder (*Alnus glutinosa*), oak (*Quercus robur*), chestnut (*Castanea sativa*) or willow (*Salix* spp.) are examples I've seen. Alder does not easily rot below water level, chestnut and oak heartwood

have reasonable resilience to soaking and drying. Most willows have the advantage of 'taking' as 'cuttings', sending up shoots and rooting into a bank, helping to secure the soil behind it.

Flood and erosion prevention

Speeding up rivers, by dredging and channelling can lead to downstream flooding during peak flow. Rivers can be slowed while protecting banks by 'spiling' the banks and weaving recently cut living willow between the uprights. A variety of weaving styles can be used, but weaving 'bundles' of flexible whippy small branches seems to be the most common. Spile banking suits clay or heavy soil areas, where seasonal fast currents can otherwise wash banks away.



My own spile bank



Naturalised stream with spiled banks

PHOTOGRAPH BY WIKIPEDIA



Spile banking beside the River Uck



River Uck, gabions rock filled cages by bridge – spile banking beyond

Changing the landscape

Spile banking rivers are enhanced with banks of osiers and maybe with the occasional pollarded crack willow. Maintenance, depending on long term aims, can consist of:

- Occasional cutting back of weak or unstable growths
- Wholesale cutting and harvesting of willow wands and using them for further spile banking, willow sculptures or basket making
- Just leaving the river to naturalise for as long as possible, if stable

Spile banking has the advantage over revetments in that it easily follows curves, naturally moulding into the landscape. Numerous nooks and crannies provide excellent niches for all kinds of wildlife. I hope to see a lot more spile banking being used in the next few decades.

Revetments – holding back the land

On sloping ground or banks, with little vegetation, the tendency of soil is to gradually move downhill. On slopes of 22–32° or more, most soil will creep or the land may slip. Of course, mega constructions can be seen around the coast, but like most wooden revetments these are only temporary measures – rarely lasting a lifetime. Soil movement is a perpetual problem that can be halted many ways. One way is to construct revetments: simply wooden edging securely constructed to hold soil back like small scale terracing.

Building small revetments

The method is quite simply described – although the actual work can be tough. Drive or set in your uprights,



Larger scale revetments



Revetments by some steps

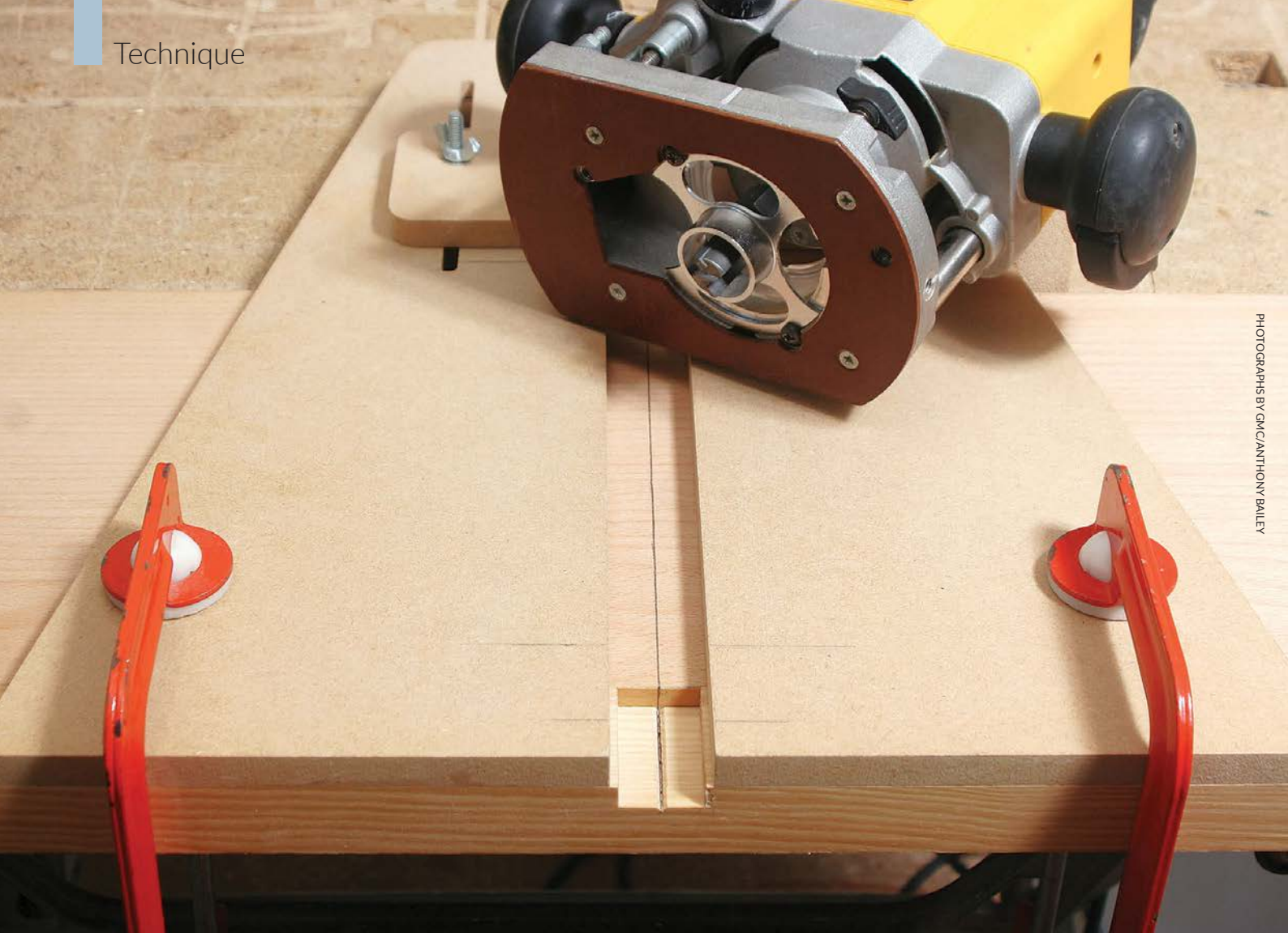
usually square or rectangle posts, using either oak or treated softwood then fix the treated softwood or oak planks to the uprights. If necessary, dig out behind where the planks will go first and then fix the planks to the posts, larger posts and planks will require corrosion resistant bolts and nuts with appropriately drilled holes. Where possible, smaller constructions should be securely screwed together, rather than nailing. The photo, bottom left above, shows 125mm planking, stobs (small pointed uprights) approximately



Small revetment by path

50–75mm apart. The stobs can be positioned inside or outside the planking or, alternatively in and outside, depending on the required, structural and visual results. Finally, backfill and tamp soil on paths. Use self binding ballast, hogging or 'MOT No.1 roadstone' as a sub layer. Next to paths and by steps, the finished result can be pretty good. Beside streams though – always consider spile banking first.

For more information please visit: www.canalrivertrust.org.uk



PHOTOGRAPHS BY GEM/CANTHONY BAILEY

Router housing jigs

Last month [the Editor](#) showed us a variety of simple jigs. This month he describes in more detail one of the most essential ones you will need in your collection

You can use a router with a fence for lengthwise routing operations, but working perpendicular to that requires either a router T-square, which gives guidance along one side or the extra control possible with a slotted housing jig. This simple device confers control when routing making a lot more things possible and more accurately than without it. For this you need a guidebush big enough to accommodate the right size of cutter. Not only can you make housings. It is a good way to trim the ends of boards square. The jig can be made as long or as short as you desire.

You can use a straight cutter for plain housings. Diameters can vary from small to reasonably large but the guidebush will dictate how large, usually no more than 19mm diameter. Dovetail cutters are used to create 'locked in' joints.

These are suitable cutter types





It is important to get the batten square

A housing jig needs to be exactly at 90° for accurate cuts or the components may not go together very well. Use an accurate square to check before and after glueup.



The slot must be exactly parallel

The slot needs to be a good sliding fit from end to end. Any tightness will make using the jig difficult and any parts loose will result in sloppy inaccurate machining. A tablesaw is a good way to create reliable parallel outer cuts for the slot. Make sure the housing jig is clamped to the workpiece as vibration and movement of the router will otherwise displace it and ruin your efforts.



A narrow slot being cut before the dovetail cutter

A housing jig can double as a board end trimmer. It can make good square cuts instead of needing to use a compound mitre saw. It also eliminates breakout using a router except at the very end of the cut if it isn't pressed against sacrificial board. When you're making dovetail housings do the slot first. The stress on a dovetail cutter is reduced by using a small diameter straight cutter to remove some of the waste. When you do use the dovetail cutter, do not release the plunge or the cutter will ruin your work. Instead pull the router back to you, which will clear the chippings, then switch off.



The matching dovetail tenon using a high fence for support

The other part of the joint, the dovetail, is created on a router table taking cuts either side of the board and checking the fit. It needs to be a snug fit, but the board with the housings must be dead flat or it will be hard to tap the joints together. For a discreet appearance the housing can be 'stopped' at the front of the cabinet or shelves.

The housing jig needs to have a stop at the correct place so the router cannot machine right through the front edge.



A stopped housing showing the tenon end rounded

For stopped housings, a component with a plain tenon end has a step, and a dovetail has a neatly rounded over dovetail end. Finally, make sure you do test cuts to check the joints will all fit well as there are usually a number of housing joints together in a piece of furniture. ■



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Dining chairs

— follow up

Louise Biggs

discovers one chair actually is shorter than the rest

Tool list

- Tenon saw
- Dovetail saw
- Chisels various widths
- Spokeshaves round and flat bottom
- Bandsaw
- Sash and 'G' clamps
- Drill and Forstner bit
- Squares
- Utility knife
- Profile gauge
- Callipers and Verniers

For the turning

- Four-prong drive
- Revolving centre
- Spindle roughing gouge
- 10mm parting/beading tool
- 2mm thin parting tool
- 10mm spindle gouge
- P.P.E. – dust and eye protection or full face visor when turning, gloves

Back in issue 9, I covered the restoration of two dining chairs, which were part of a set of six. Pleased with the restoration, my client decided to have the seats re-covered and arranged to bring the chairs over to me. They found a couple more chairs with loose frames and something rather odd... one of the chairs was lower than the remaining five.

Never having stood the chairs together in a group they had never noticed the height difference, but the question was asked 'could I raise the legs on the one chair?'

1 I am not going to cover the stages of knocking apart and re-gluing in this article, but I will concentrate on correcting the two turned front legs and extending the back legs accordingly. As a rule, when a chair comes in lower than the rest it is generally due to damage on the ends of the legs or it was purposely cut down to suit a particular person in the past, or indeed cut down to suit an uneven floor. This is where things became stranger as with closer inspection of the front legs, the height



difference was caused by a shorter turned section in the middle of the leg. Was it made this way on purpose? Was the short turning a mistake but they continued with the chair anyway? Try as I might I could see no sign of any previous repairs that would explain the difference, so I guess we'll never know.

Front legs

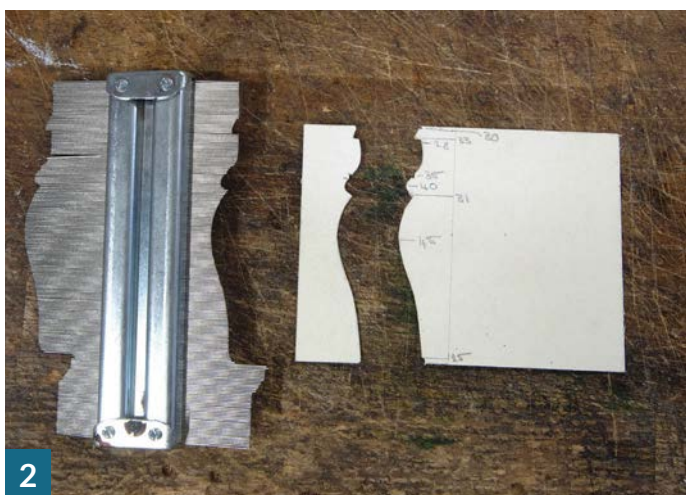
2 Having decided the best course of action to keep as much of the original legs as possible, a profile gauge was used to form a template of the lower turned section of the leg, including the individual bead just above. The shape from the gauge was then transferred onto a piece of stiff card and cut out. Each individual detail was measured with callipers for the diameter which was marked on the template.

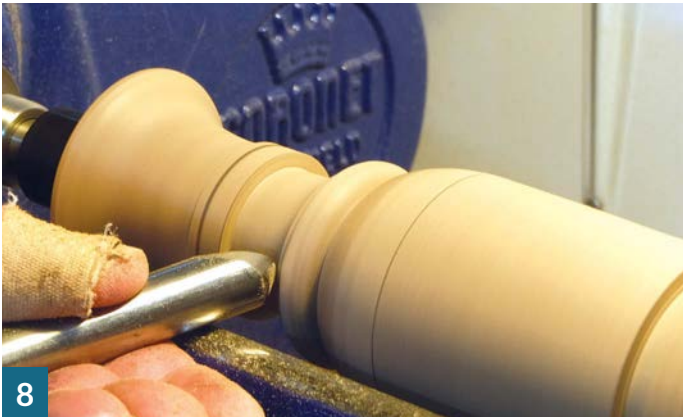
3 Having found the centre of a square blank it was set up on the lathe between a four-prong drive and a revolving centre. The rest was set just below the centreline and a spindle roughing gouge used to turn the timber down to a cylinder. The cut was started back from either end

in order to support the bevel and progressively worked back to the centre while cutting towards the end. With one end turned the tool was reversed to cut the other end.

4 The cylinder was parted in two using a beading/parting tool, and one half remounted and centred on the lathe and skimmed over to true it up. The key features were marked on the cylinder from the template and areas were taken down to the right diameter using a beading/parting tool and callipers. For safety the ends of any callipers and Verniers were rounded off. If you do not feel happy using the callipers while the timber is turning, turn the lathe off.

5 A thin parting tool was used to denote the top of the foot and the starting point of the dowel. The cut was deep enough that waste timber on the dowel side could be removed to allow clearance for the top bead to be formed, but not so deep as to weaken the piece of wood while turning the leg. To stop the parting tool binding a second cut was made on the dowel side parallel to the first cut.





6 The cove-type feature between the two beads was cut flat to the largest diameter with a beading/parting tool. At this stage the top bead is still larger than the finished diameter. What must also be remembered is that the beads and coves have to match the existing feet, so if they are flattened off or odd shapes they must be turned and shaped in the same way.

7 On the main ogee/bead shape the widest point was marked to denote where each shape would start and where the cut would start to cut downhill supporting the wood fibres. As with the bead, the spindle gouge was positioned to start the cut at the widest point and pick up on the bevel. As the half bead and bead was formed the tools flute direction was rolled over

and the handle swung round to gain a smooth cut in one action. This also enabled a clean cut into the shoulder line.

8 Next, the cove-type feature was shaped using the spindle gouge. The cut was started at the outer top points of the shape and with the bevel rubbing the cut was deepened while rotating the tool to hit the lower middle point, blending the two cuts together.

9 The top bead was formed in the same way and the fillets on the beads trued up with a beading parting tool. The spindle gouge was then used to form the ogee shape at the bottom of the foot, starting from the line marked for the half bead and,

again, cutting the grain downhill. Once cut the two shapes can be blended together.

10 Throughout the turning process the shapes were checked against the profile gauge and adjusted as required. With the small metal rods in the profile gauge it is advisable to turn the lathe off before they catch and get bent or part company with the gauge.

11 A Forstner bit of a suitable size to drill the leg was measured with a Vernier gauge and after the turning was cleaned up with abrasives, going through the grits, the dowel was formed on the top end. A beading/parting tool was used to take either end of the dowel down to the correct size and the centre cut down to match. ➤



12



13



14

12 After one final check the foot was parted off at the bottom first and then at the top. Repeat the process to form the second foot. If you have enough callipers/Verniers, set a pair for each required measurement if not reset the diameters carefully to obtain a matching pair.

13 The old feet were cut off just above the lower bead using a dovetail saw. The remaining individual bead was removed from both legs using a carving tool and abrasives. By removing this bead it made the short, centre turning the correct length. The individual bead is replaced at the top of the replacement feet.

14 The legs were then drilled out for the dowel using the Forstner bit. If you cannot set the leg up on a drill stand then get a friend to sight the bit in one direction while you guide the other to drill the hole upright. The new feet were then glued and cramped into position.

Back legs

15 With the front legs to the right height the back legs could now be extended. Back leg extensions are always vulnerable due to people dragging the chairs and swinging on the back legs. Two pieces



15

of wood were prepared and holding them extended past the leg end, the shape of the leg was marked out. These lines, following the curves, were then extended to the end.

16 The stopped scarf joints were marked on each piece and the sections cut to shape with a tenon saw and trued up with a chisel. For the joint to be strong and work effectively the extension pieces and legs must have a very tight fit.

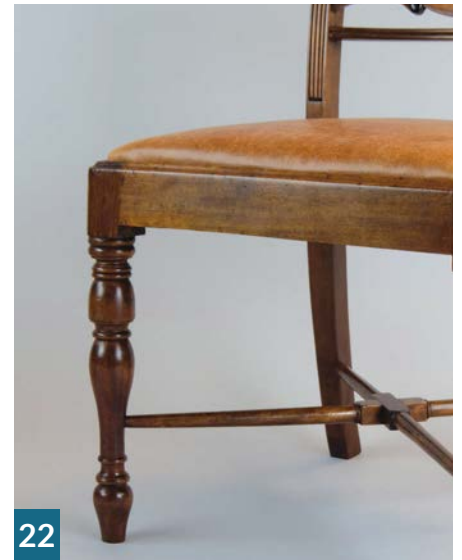
17 Each section was clamped in position on the legs and the joint marked using a utility knife. The joint lines were squared across the front and back of the leg and the sections lined up on the other side and marked with the knife.



16



17



18 The angles on the bottom of the legs were pared off using a chisel before cutting the other short angle using a dovetail saw. In both case these cuts were kept square and the surfaces flat.

19 The centre section was then cut and removed. The cut was made by sawing at an angle from each side before cutting straight to cut through the bottom part.

20 The extension piece was test fitted repeatedly and, where required, the joints surfaces were pared off using a chisel.

21 The pieces were then glued and clamped in position. When dry a hole was drilled through the extension piece and into the leg so a dowel was fitted in each leg. The remainder of the shaping process to align the legs and extension pieces was then carried out using a spokeshave and abrasives.



22 The chair was placed on a flat surface to make sure it sat firmly on all four legs, before being stained and polished to match in the same way as the stretcher rail repair in issue 9.

23 With the seats re-covered in leather the chairs were ready to join the remainder of the set. The chair with the extended legs is on the right. ■

Ask the Experts

This is your chance to challenge our Editors and for them to answer your comments and queries



ANTHONY BAILEY
Editor,
Woodworking
Crafts magazine



MARK BAKER
Group Editor,
GMC woodworking
magazines

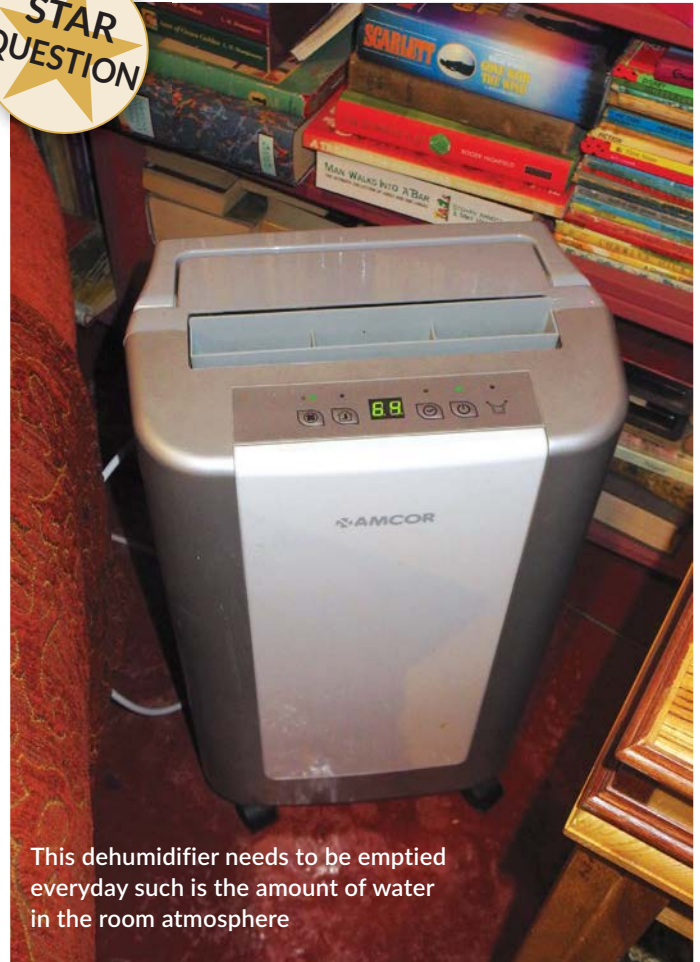
MOULDY BUSINESS

“ We have a living room in the basement area of our house. It is furnished and a pleasant place to be, but the atmosphere feels a bit humid sometimes and I have found traces of mould on my woodwork and soft furnishings in certain parts of the room. The room is ‘tanked’ underneath the plaster so it ought to be sealed. There are stairs down and a fanlight at one end, which gives a bit of light and a storage heater for warmth. Any advice is welcome! ”

Jim Rochard

Anthony replies: Any underground living space is likely to have damp problems. Inevitably even with tanking, moisture is therefore likely to permeate the walls and floor of domestic dwellings, which aren’t built to robust standards. There are several issues: damp entering from outside the room, moisture caused by occupants breathing and a rather static atmosphere. The storage heater will cause some air circulation but overall the air will remain rather still, whereas above ground level there will be windows, doors and through pedestrian traffic which stirs the air and moves moisture on.

If you don’t have a dehumidifier you should get one. The typical cost has come down and you don’t need a big machine although, it needs a good tank capacity for all the water it removes from the atmosphere. You will be shocked at how much water gets extracted each day, but it will help save your wood, fabric, possessions and incidentally your health as you may be inhaling spores, which cannot be good for you.



This dehumidifier needs to be emptied everyday such is the amount of water in the room atmosphere

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

BARGING IN

“ I have a wooden bargeboard over a one storey extension, but it is a nuisance to keep scraping off and repainting every other year. I have been recommended to use uPVC to clad over it but I’ve never used it before, any tips about doing this? ”

Jenny Walton

Anthony replies: The first thing is getting safe access to the roof and whether the roof you need to stand on is solid enough to be safe, (even though it is just single storey). If you use a ladder make sure someone is standing on the bottom end or if access is very awkward, consider hire

of an access tower with outriggers.

You need to check the existing bargeboard is reasonably sound and not heavily rotted. Rather than removing it, you can overlaid it in uPVC. Measure up to see how big a section you need, typically for bargeboard you would need it to be 200mm wide by whatever length required. You may need to buy more than one length and use mastic to seal between the two sections. Buy a uPVC section which has a ‘L’ shape at one edge, this will then enclose the bottom edge of the bargeboard and improve the appearance and prevent the wood degrading further. You will also need some special ring nails with plastic covered heads for pinning the uPVC in place. But before that, rub down the old bargeboard and use some

undercoat to seal it, then cut the uPVC section to shape at the ends and fit in place. It is much, much easier to shape than wood and the installation time is very quick!



Fitting this uPVC bargeboard was a 30 minute job, safe working access to the roof is key though

SAW POINTS

“ I read your answer in the last issue about dovetails and using good quality tools. I really want to buy a decent tenon saw or dovetail saw, should I buy new or secondhand? Any tips about what to look out for? ”

Sam Roxburgh

Anthony replies: I think you already know that a hardpoint tenon saw isn't a good choice, but a traditional saw is. I buy old planes and do them up, but I steer clear of old handsaws unless they are really good quality or unusual. It is simply about the teeth. An old saw however good it looks, is unlikely to have well sharpened and 'set' teeth. Sharpening and setting teeth well is definitely an acquired skill and should be specific to that saw.

A new saw will obviously be made to the correct standard and should work perfectly from the start, and last a long time before resharpener (if not misused). There are many different 'posh' saws on the market, your choice is down to budget and whether one model really is a 'must have' even if it busts your budget. If you aspire to produce the best quality work then obviously don't buy the cheapest, but equally don't blow several hundred pounds on a saw if you don't need to. Things to look out for are: a comfortable size handle usually enclosed but some saws have an open pistol



A good quality tenon saw like this one needn't break the bank, but does need looking after

grip handle, a good solid brass 'back' which is the metal encasing the top of the blade to give weight, stability and stiffness, and the overall quality of finish. I would suggest for fine work including dovetails, a 10inch 15tpi crosscut from one of the saw brands in the Flinn Garlick stable, such as Pax or Roberts & Lee, which can be had for around £70 and are perfectly adequate. If you want something more special still, there is a wide variety available from UK and North American manufacturers, which you can search for online.



The ingredients for sanding and refinishing an old pine floor in a public area

SANDING IN A CHURCH

“ We need to sand and refinish a section of floor in the local church where several pews have been removed. I'm a chipper not a floor finisher, some pointers, please? ”

Barry Lewis

Anthony replies: By several pews I take it to mean an area say – roughly 3600 x 2000mm, at wild guess? For that area you can either hire a floor sander, which I find horrible to use and dust is a real issue, or do what I have done before and use coarse 60 grit Abranet on a random orbital sander connected to an M class extractor. The surface is likely to be reasonably level, but marked from the use over many years so random orbital sanding should be enough to get an even finish.

Once that is done to your satisfaction it needs a finish applied as soon as possible to avoid further foot traffic marks. I would suggest a two-pack aqueous varnish, check the coverage and buy enough as you may need several coats if the wood is rather 'dry' and may absorb quite a bit. Measure carefully into a separate mixing container so you can keep some for subsequent coats. Health and safety-wise, place barrier tape at waist height around the site with clear 'keep out' safety notices as it may take up to a week to fully harden for normal use.



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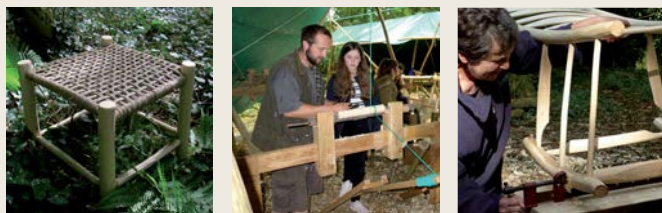
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Closed Sunday.

Meet the contributors...

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



Louise Biggs

Having completed her City and 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



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, Adams fireplaces, book cases and reproduction furniture.

Web: www.sawdustandwoodchips.com



James Hatter

James is interested in the design and construction of a wide range of wood-based projects, and DIY, for home use. Ash and oak are his favourite timbers. He enjoys teaching, and working with his seven-year-old grandson, who he reveals makes really good suggestions in design.



Lee Stoffer

Lee Stoffer has finally decided to turn his passion for green woodworking into a full-time occupation, making, teaching and demonstrating.

Web: www.covertcraft.com

Facebook: www.facebook.com/covertcraft



Simon Rodway

Simon Rodway 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



Mark Baker

Mark has always been fascinated by timber and loves exploring the different woods, shapes, surface enhancement and experimenting in his work. Mark is Group Editor of *Woodworking Crafts, Furniture and Cabinetmaking, Woodcarving and Woodturning* at GMC Publications.

Email: markb@thegmcgroup.com



Colin Sullivan

After studying at Beckenham School of Art and two years National Service, Colin attended the Royal College of Art Furniture School, where he met his long time working partner.

They soon set up business together, designing and making furniture. Colin now makes furniture and more, and demonstrates at Amberley Museum.



Chris Grace

Chris has been turning wood since 2008. He has enjoyed making things with wood and metal on and off all his life alongside his work commitments, but the discovery of the lathe re-ignited his enthusiasm for working in wood. Chris sells his work by commission, demonstrates and provides instruction.

Web: www.NotJustRound.com



Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.

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

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10 TIPS *for* MARKING OUT

Marking out components for cutting and shaping wood is the most basic requirement of woodworking. We show you how to do it right!

A sharp pencil, marking knife and chisels are essential

In woodworking (as with all things) there are bad, good and better ways of doing things. It matters because it affects the size, shape and accuracy of the result, it can waste time and material getting it wrong and there's the matter of personal pride in doing a job well. The truism 'measure twice, cut once' is very relevant, care at the marking out stage can save a lot of effort and heartache later on....

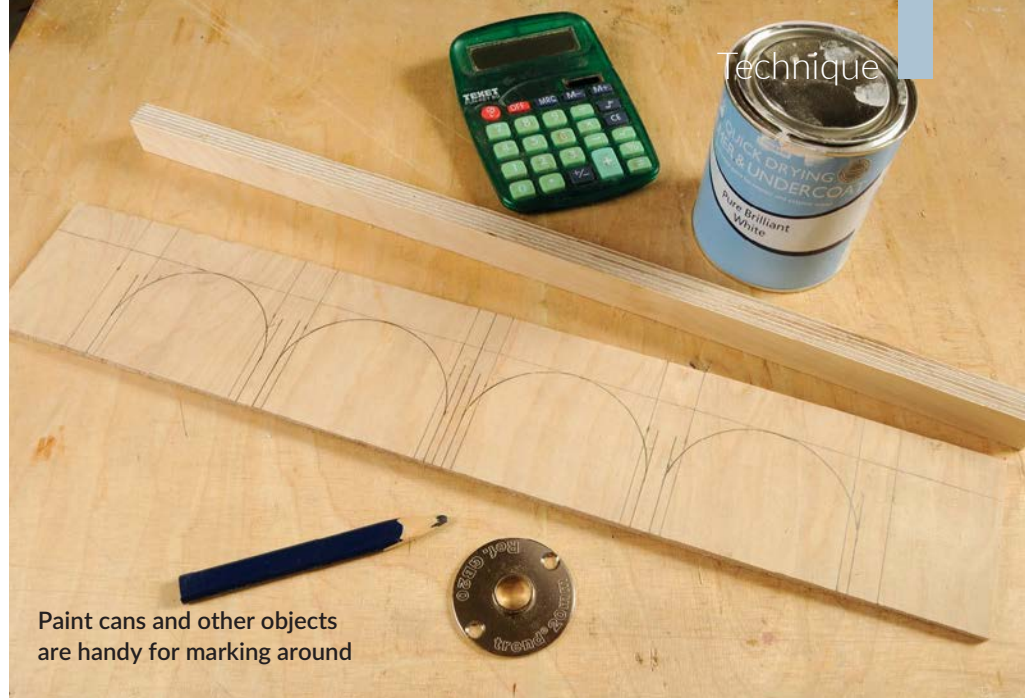
1 Start the process by taking accurate measurements, making a sketch drawing and component list for each job. If you are making fitted furniture extra care is needed because existing spaces are seldom square or parallel.

2 Consistency is everything. If you use metric rather than imperial stick with that and work in millimetres rather than centimetres to give enough accuracy. Most timber, board and fittings are supplied in metric sizes so it makes sense.

3 Be sure to use good quality marking tools. An engineer's square is more precise than a try-square with a wooden stock for example. A marking knife is essential. Use medium and hard grade carpenters' pencils sharpened to 'chisel' tips.

4 Make sure components are flat and square before marking out joints. Ready machined, planed timber should be so, but planing by hand requires skill and constant checking. Failure to do this will make it impossible to get joints to fit.

5 Even if you haven't worked timber by hand, it will often have a 'best'



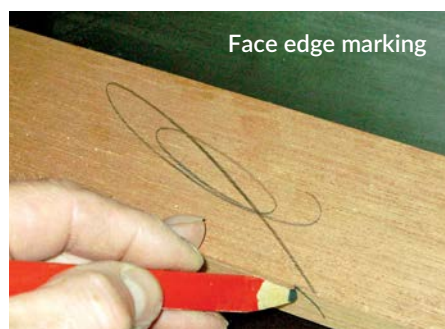
Paint cans and other objects are handy for marking around



Hatching of the waste to be removed



Check the wood is truly square



Face edge marking



A mortise gauge for accurate marking of mortises

face, so use traditional 'face and edge' marks for the 'seen' faces. In addition, mark each component with a letter so you know which order they will go together in.

6 Sliding tape rules have a sliding end piece to allow accurate internal and external measuring. Make sure the sliding end piece isn't bent out of shape. To be extra precise start measuring from the 100mm mark but don't forget to add that 100mm back on to your measurements afterwards!

7 Joints are marked with a hard pencil because it gives precise lines. 'Hatch' waste areas so you know exactly what needs to be removed. Use a marking knife to reinforce the lines with greater precision.

8 If you need to scribe shapes to fit around mouldings or other objects such as pipework, make a card template and cut it until it fits correctly. Now apply this to the wood and draw around it for a precise fit once it is cut out.

9 Cans make useful shapes to draw around for circles. Most homes and workshop have a variety of sizes available to choose from.

10 Don't rely on pencil to mark around critical items such as hinges or dovetails. A knife can run right next to the object in question for a much more precise fit. Utility knives aren't suitable as they are rather loose in the handle and won't always follow the desired line. ■



Only precise marking will give perfect joints



Paul Tear MBE

– a ‘Master’ of his craft

To many people in the world of furniture restoration and conservation Paul Tear is something of a legend, so **the Editor** decided to play catch up

Many years ago I went to Bucks University College, High Wycombe as it was then titled, with the Editor of *Furniture & Cabinetmaking* magazine Colin Eadon-Eden, my job being to take photographs while Colin reported on the progress of BA students for the magazine. We met Paul Tear who was the BA course leader for Furniture Conservation, Restoration and Decorative Arts. Fate plays a strange hand because some years later

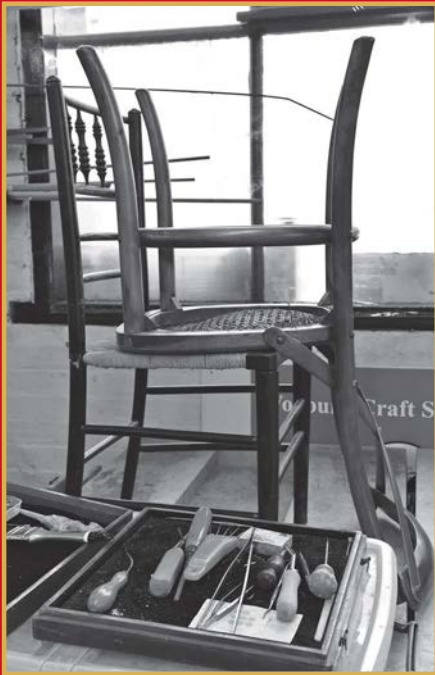
my daughter Amber had finished an art foundation course at Eastbourne College working with veneers, so ‘Bucks’ seemed like the logical next step. Thankfully Paul was prepared to accept her on the BA course, especially as it was the last ever BA course to be run at what is now Buckinghamshire New University...

A very brief curriculum vitae

Trying to record everything Paul has ever done in his career would fill

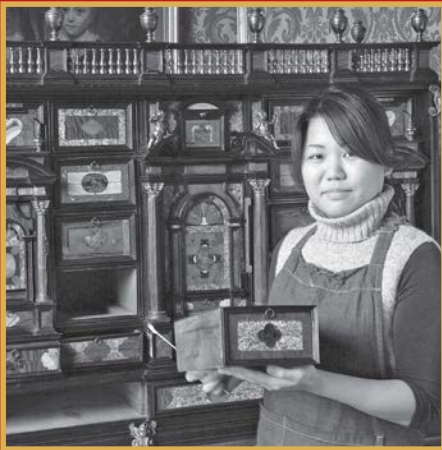
a book, so we can only really give a glimpse into the world of the highly respected and capable expert, who has not only looked after some of the nation’s treasures, but more importantly helped to spawn a younger generation of conservators and restorers with which to keep these essential craft skills alive and care for our historical assets. The following are just some of his attributions:

- Wallace Collection 1979–2004, Head

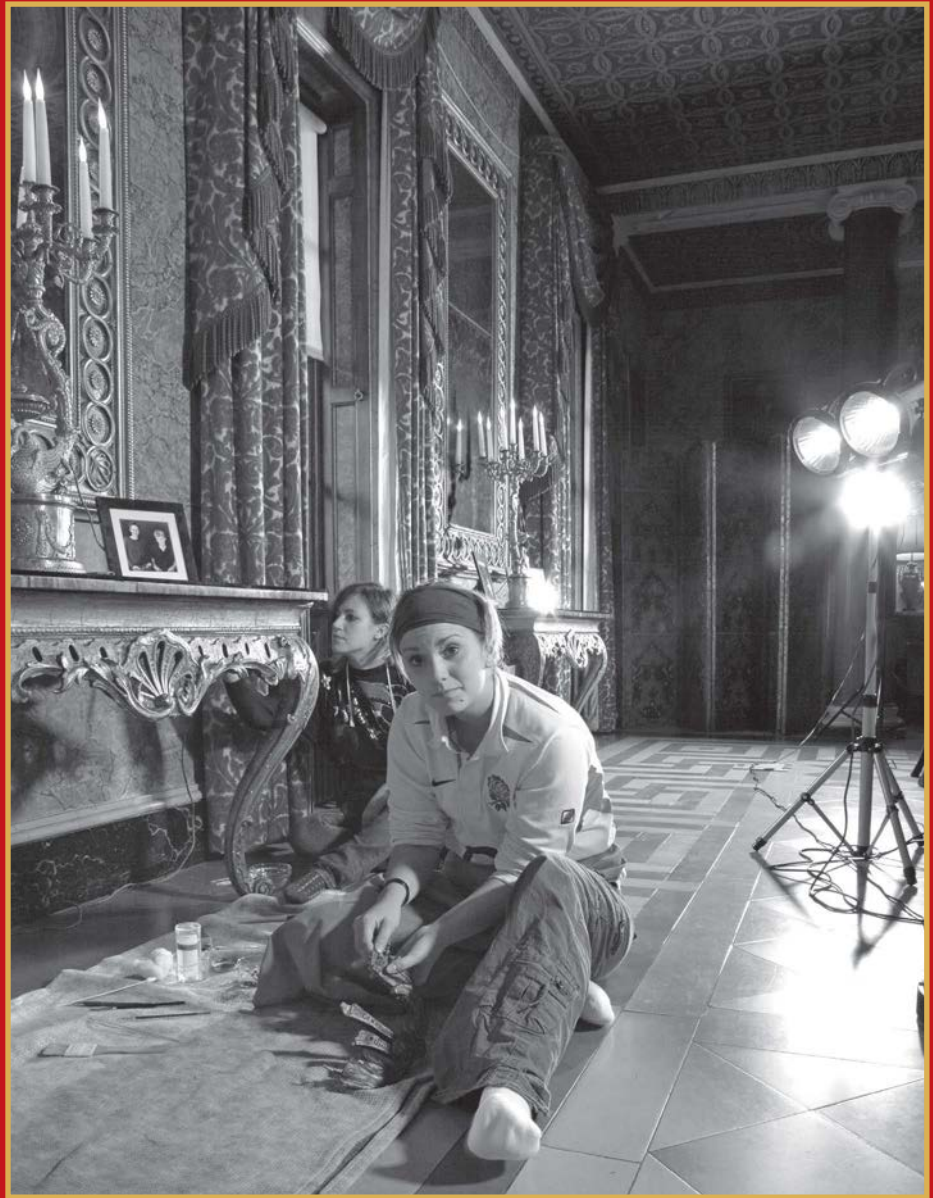


PHOTOGRAPH BY ANTHONY BAILEY

Chairs waiting to be re-caned



Cleaning and preventative conservation being carried out on an Italian cabinet



Students undertaking remedial conservation work at West Wycombe Park

- of Conservation 1994–2004
- Bucks New Uni – Furniture: Conservation, Restoration and Decorative Arts
- BA course leader: 2004–2016
- MA course leader: 2013–2015
- Award in Progress: M.Phil – The Paintings & Engravings of Elias Martin (1768–1780)

Teaching at other institutions:

- Jurva University, Finland: 2007, Advances in Marquetry Conservation and Vacuum Clamping
- Antwerp Academy Of Art: 2004 – Lecturer on Gel Cleaning

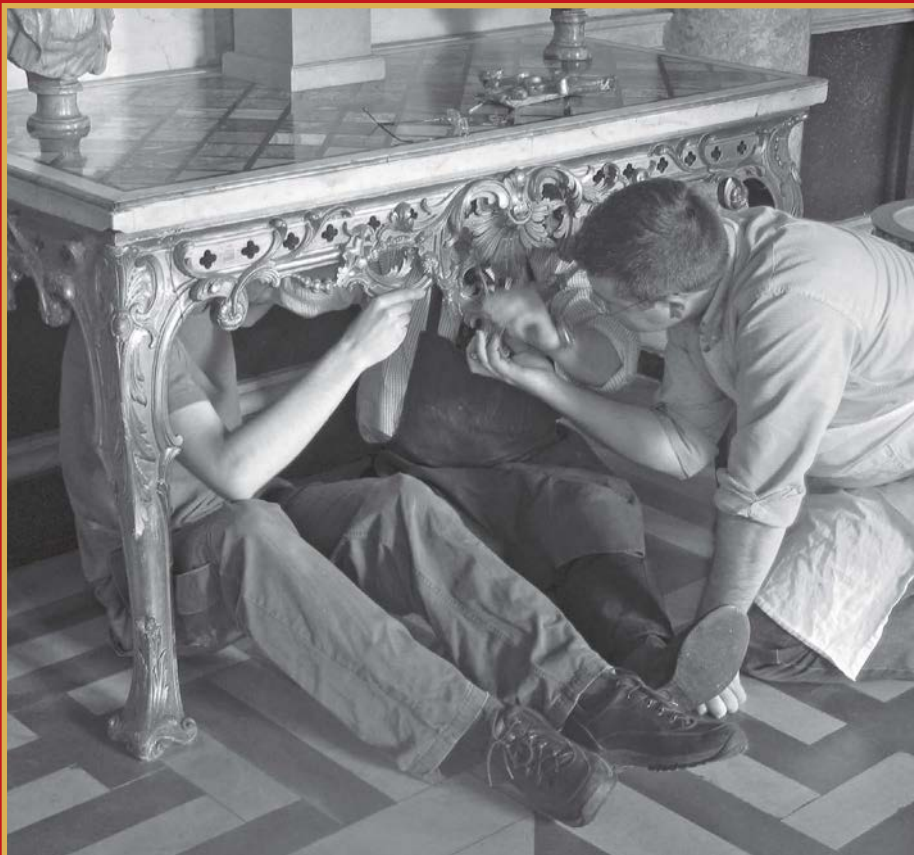
Paul has also written many reports, articles and books, most notably from Amber's perspective he co-wrote *Sources and Techniques of Boulle*

Marquetry, Wallace Collection 1994 plus many exhibitions and various consultancy work. Not to mention various symposiums on topics including many aspects of decorative arts conservation, in particular gilt-bronze manufacturing and cleaning. Much of Paul's work has been centred around complex conservation and restoration issues with 18th-century furniture, a golden age for marquetry, boulle metalwork, glues and finishes which were quite advanced for their time.

The Wallace Collection

I quizzed Paul about the MBE and why it had been awarded to him. It transpires that when Hertford House, home of the Wallace Collection was to have a basement added, the whole

scheme became massively more complicated when it was discovered that as the ground underneath had sunk over time, the building was no longer sitting on timber – there was an alarming gap, which meant it was no longer properly supported. Paul's role as head of conservation was to safeguard the objects and Hertford house during this major refurbishment. This entailed close liaison with the project manager and contractors to ensure that the building work carried out had minimal impact on the house and its collection, but also that the project moved forward, as it had a tight deadline. There was no potential disaster, as they planned it very well and put procedures in place to minimise the risk. They had learnt their lessons from Uppark, Windsor, etc. ►



Three hands needed to clamp a piece of gilt carving



Paul Tear with a group of BA (hons) and MA restoration and conservation graduates



Student working in the lab, cleaning gilt brass

PAST, PRESENT & FUTURE Student successes

I asked Paul what he believed his teaching had given to former Bucks students – “transferable skills, step-by-step methodology, research to find answers and using reversible processes” he answered. He then made an interesting and slightly controversial statement about which students tended to be successful – “left-handed, often with dyslexia.” My father was left handed, although his grammar school forced him to write right handed. I also know people with advanced craft skills – not necessarily with wood, who have dyslexia, so maybe there’s something in Paul’s observation. To Paul, however, each and every student got all the help and encouragement they needed to reach degree standard regardless of circumstances. Typically students have undertaken internships, conservation and restoration, which gave them valuable experience and has led to jobs at places like the National Trust, nearby Waddesdon Manor being an example. Paul feels there is plenty of restoration and conservation work to be done now and in the future if our heritage is to be preserved, so we need new blood, new craftsmen and craftswomen to continue the good work.

Wooburn Craft School

So with the closure of Bucks as a centre of expertise in furniture design and conservation what now for Paul? What does the future hold? Dr Ernest Riall, who trained at Bucks and whose workshop at Wooburn town is where Paul teaches his own restoration courses. Ernest was a mature student and he specialises in woodcarving, which he now teaches. The rather quaint setup is right next door to Lyons Restoration. Phil Lyons teaches



Dr Campbell Norman-Smith with first year students on a 'live project' at Chiltern Open Air Museum



Students on their study tour to Paris, on a tour at Nissim de Camondo



Patrick George, Pierre Ramond, Paul Tear on a visit to Les fils de J. George, Paris



A machine for cutting veneers, awaiting restoration, Les fils de J. George, Paris

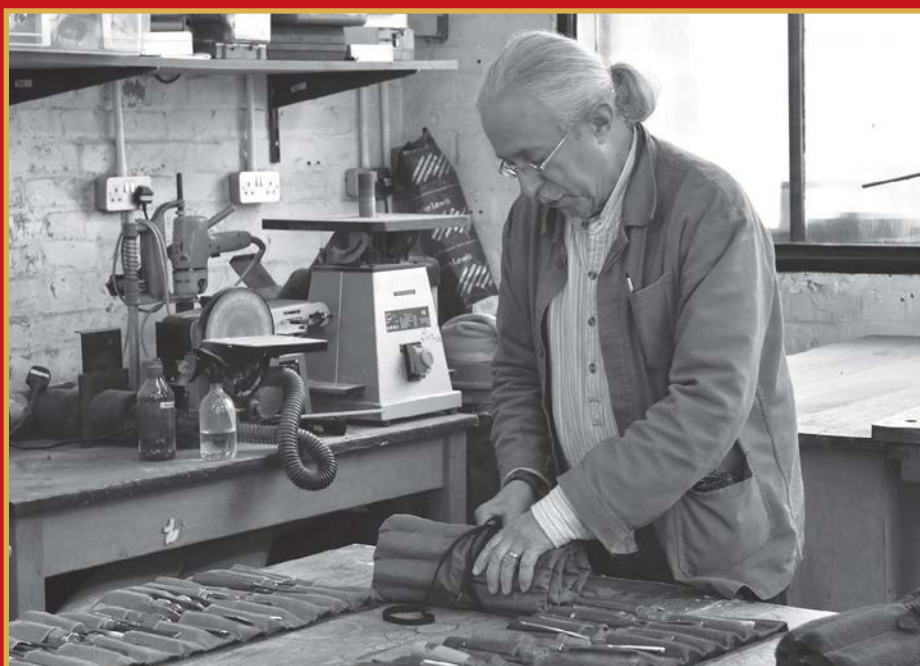
furniture making in his workshop but there are other courses in upholstery, stained glass and jewellery making. This has created a small hub of craft activity just down the road from High Wycombe where Paul Tear still holds the title of associate at Bucks. The primary reason for the creation of the Wooburn Craft School, is to keep these craft skills alive and to help people have better lives through their creative expression.

Time to wind down?

... of course not. Although Paul does his grandparent duties once a week, his wife wishes he was not quite so busy working all the time, but in his own words "it is too much fun!" When not teaching at Wooburn, Paul still keeps in contact with his fellow conservators abroad, making regular trip to Paris and Amsterdam. There does not seem much chance that this 'master' of his craft will ever slow down. There is simply too much still to be done! However, the University's Foundation Degree in Kitchen Design continues to grow. More generally, students who wish to study furniture can continue to do so in the BA (Hons) Product Design. ■

Wooburn Craft School Ltd.

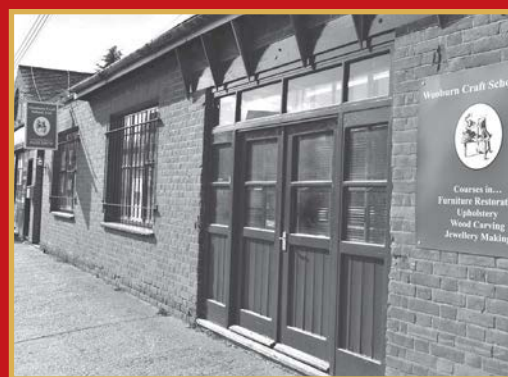
www.thewooburncraftschool.com
[Buckinghamshire New University](http://www.buckinghamshire-new-university.ac.uk)
www.bucks.ac.uk



Ernest prepares for the evenings woodcarving class by rolling out the chisels



Maxwell, the workshop mascot, relaxes between walks in the nearby park



The exterior of The Wooburn Craft School

PHOTOGRAPHS BY ANTHONY BAILEY

Rope making

Colin Sullivan looks at making rope

Both Chatham and Portsmouth dockyards have massive purpose built rope walks, showing how important rope was to the English Navy in the past centuries. The small rope-winding jig shown here was made for demonstrating to children how simple it is to make a rope.



Did you know?

It is estimated that a typical man-o'-war sailing ship used 40 miles of rope, including spare rope stored below decks.



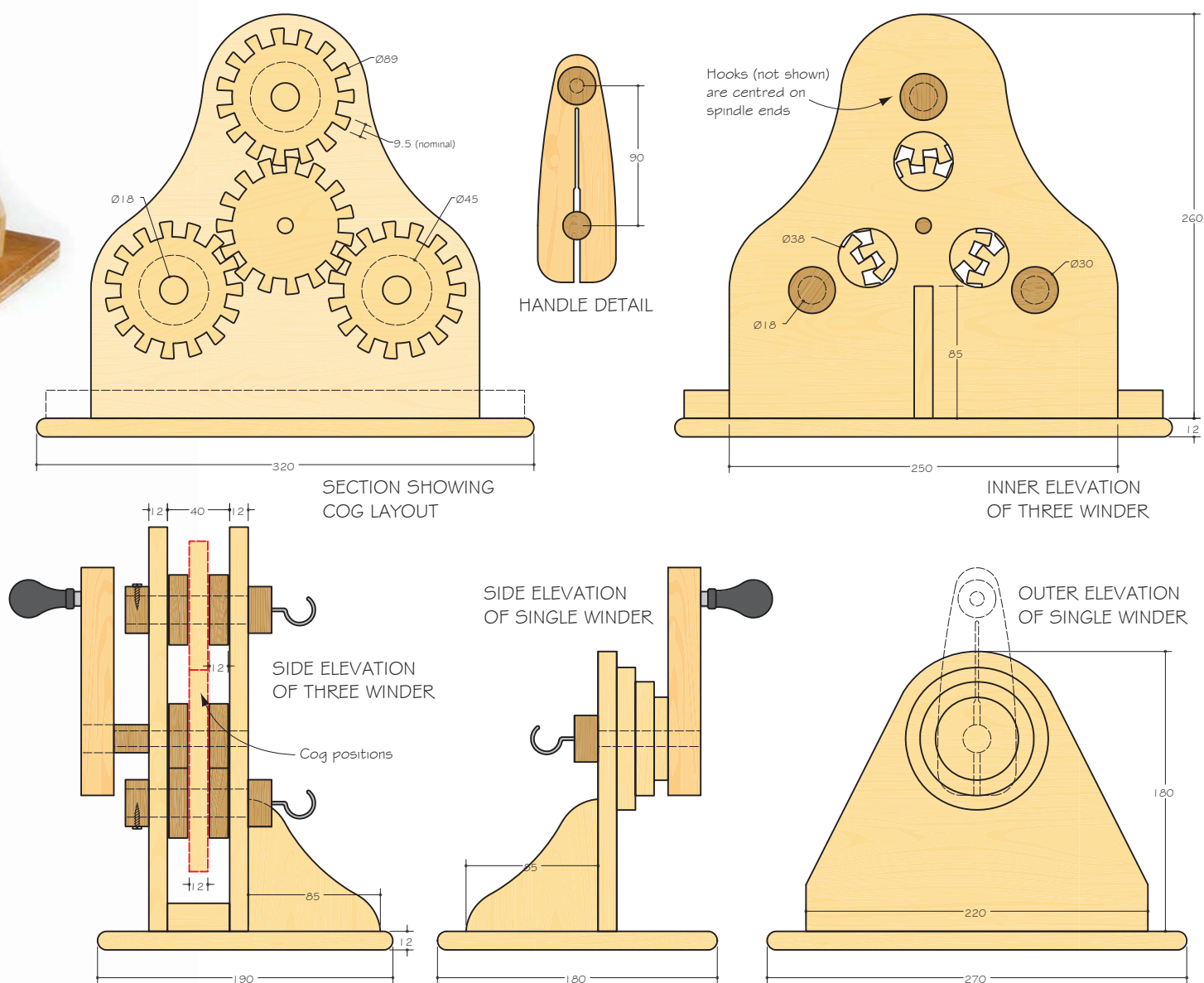
By winding a number of strands of string together a sort of spiral spring is formed, then if the operation is repeated from the opposite end a second spiral locks the strands together to form rope. The cogwheels were made from a drawing that I carefully made on paper using a compass and a pair of dividers. The 15 teeth are 9.5mm each which works out to a diameter of 89mm. Providing the teeth and the cut out are the same size, they should fit together after giving the edges a slight chamfer. Drill a hole in the centre of the cogwheel for a good fit on a panel pin, fix them down to a piece of scrap so they run against one another easily. This is the dimension to use for setting out the four cogwheels. Engagement needs only to be 5–6mm between the cogwheels.

The four spindles are 18mm diameter, turned from hardwood with one end 30mm diameter to form a stop and shoulder for the screw hook to fix into. The spindle has to be fixed to the cogwheels once they are placed in one of the panels. The spacer bush and one cogwheel slide on and the second spacer is drilled and screwed to the spindle and

the cogwheel, leaving enough clearance for it to turn easily. The centre cogwheel is treated the same way but uses the opposite side panel, this also has to be shaped to take the winding handle. The two panels can now be put together and fixed with a strip of ply at the base just wide enough to allow for clearance as before. The opposite single winder uses one spindle and a handle for turning and the panel is built up with two discs to make a good bearing.

Using the rope winder

A small traveller with three holes and slits is used on the second operation of making the rope. Set the two sections of the rope maker on a long table. Fix the 3-hook winder to the table with a clamp. Tie the string to the single hook end,



run it along to the 3-hook end and hook it over one of the hooks. Run the string back to the single hook and hook it on, run it back to another one of the 3-hooks and repeat this operation once more, ending at the single hook end. Tie this bunch of strings together close to the hook. The appearance can be changed by adding a different coloured string and repeating the process.

Wind the 3-hook end handle clockwise until all three strings are twisted, keeping the tension even by holding the two ends apart; there will be a slight shrinkage in length.

Place the traveller on the three strands of string close to the single hook end, holding it steady and winding the handle clock wise until the rope is formed. The traveller will be pushed along as the rope forms. Tie the rope by binding it with string up against the traveller and remove the rope completely.

By practising this a few times the rope will get better and better. Children love to help doing this by twisting the handles. ■



PHOTOGRAPHS BY GMC/ANTHONY BAILEY

READER GROUP TEST

Welcome to our Reader Group Test by members of our very own Woodworker's Institute Forum

CMT hole saws

These hole saws are steel bodied with TCT teeth and designed to cope with anything from brick, ceramic tile, MDF, plasterboard to plastics. They come in a wide range, from 19-270mm diameter and with four pilot drills for low abrasion materials such as MDF or plastic, and a TCT masonry tipped versions, plus one that can take two hole saws for rapid hole enlargement. They are deep enough to perform angled cutouts. A sprung button on each hole saw makes changing sizes instantaneous, and there is one deep gullet to make plug removal easy.

DETAILS

Price: from £21.82-£468.24

Contact: Tomaco

Web: www.tomaco.co.uk

Testers

Joanna Sutton
Russell Groves
James Gillies
Sam Musker

Joanna Sutton: I currently own some hole saws for domestic use, but these premium hole saws are infinitely better than my existing ones. There was some slight binding in MDF using the larger cutter, but this was solved by slowing the drill down a little. I would definitely recommend them to other people. My father even wants to add some to his own tool kit.

Russell Groves: The instructions were easy to follow. I don't currently own any hole saws, however the CMT hole saws were easy to use. I would definitely recommend them to other people.

James Gillies: I found the instructions were not really required as the tools were simple to operate straight from the box. At present I use unbranded hole saws as an amateur hobbyist/cottage industry on a minor scale. Without a doubt, the CMT orange



PRODUCT PHOTOGRAPHS BY GMC/ANTHONY BAILEY



PHOTOGRAPH BY RUSSELL GROVES

In coarse ply, there was some ragging



PHOTOGRAPH BY RUSSELL GROVES

Russell Groves showing how easy plug could be reworked



PHOTOGRAPH BY RUSSELL GROVES

TCT tips made hole boring very easy

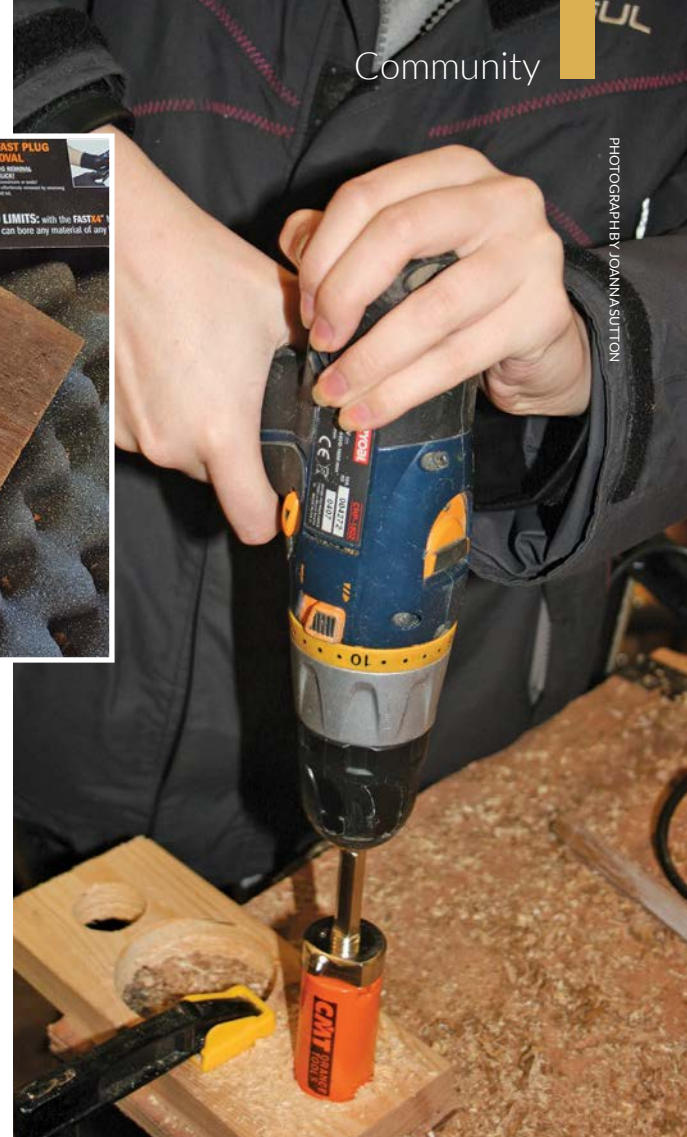




PHOTOGRAPH BY JAMES GILLIES



PHOTOGRAPH BY JAMES GILLIES



James Gillies tried out 'hole in hole' boring

Joanna Sutton slowed the drill speed for reduced 'binding'

tools hole saws are a faster, easier and premium product to use compared to my existing ones; they are straight from the box, fast action in assembly and modular in use.

When I was trying to drill out a piece of notoriously hard Australian jarrah (*Eucalyptus marginata*) wood the plug got stuck and the reversed bit couldn't get it out however. I would have no hesitation in recommending these hole saws. For the everyday woodworker these should last a lifetime and provide a quick way of completing tasks without going back and forth to change tools, size or fitting.

Sam Musker: It's so simple, which makes it very good and an improvement on the old screw-on arbor system. I must admit, I bought a cheap hole saw set many years ago and have put up with it. It's not the best set, but they have done the job. I am a set builder so I regularly have to use hole saws.

The two main differences compared to my existing hole saws are the depth of them and the easy plug removal system, which makes the whole process much faster and less fiddly, and saving time is always good. The increased depth allows angled cuts, something not possible before. However the end results are very similar, they cut holes. I reckon this is the future for hole saw systems.

It's not often a basic tool like this gets improved in such a simple way. ■

How our testers rated the product

How would you rate the product performance? **9.25/10**

How would you rate the product ease of use? **9.5/10**

How would you rate the product overall? **9.5/10**

Editor's comment:

While not cheap, these top grade professional hole saws will cut quickly and smoothly without scorching in wood, etc. The logical thing is to decide exactly which sizes you actually need and build a set based on that. So for plumbing you would need one set of sizes, but for say, set building as in Sam Musker's case, a different series of sizes would be needed. These hole saws are too good to lend out, you may not get them back! If YOU want to be a tester and stand a chance of receiving something really useful for the workshop just email me at: anthonyb@thegmcgroup.com.



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Lyre-shaped thumbstick

Paul Purnell

continues his series by making a lyre-shaped thumbstick

Following on from last month's article on joining a shank to a head, a basic thumbstick is an ideal project to practise those skills. For this project, I am using the metal rod method (issue 21) to secure the head to the shank.

Things you will need

- Rotary carving tool
- Coarse and medium burs
- 8mm wood drill
- Carving knife
- Cushioned drum sander
- Cloth-backed abrasive 120–400 grit
- Hazel (*Corylus avellana*) shank
- 127mm length of 8mm metal rod
- Buffalo horn spacer
- Brass ferrule
- Epoxy glue
- Finishing oil

Wood for the head

- Cherry (*Prunus* spp.), 115mm along the grain and 90mm across

1 Measure the diameter at the top of the shank you are using. The diagram for this head is for a shank of 28mm with 2mm added as a buffer. Adjust the neck of the diagram according to the diameter of your stick. Make a cardboard template and use it to cut out the blank.

2 Find the centre point on the bottom of the neck of the blank. Use a washer to help find its location.

3 Clamp the head upside down in a vice or workbench. You want to achieve a final fit where approximately half of the metal rod is in the shank and half is in the head. Fitting a spacer, as with this project, effects the depth

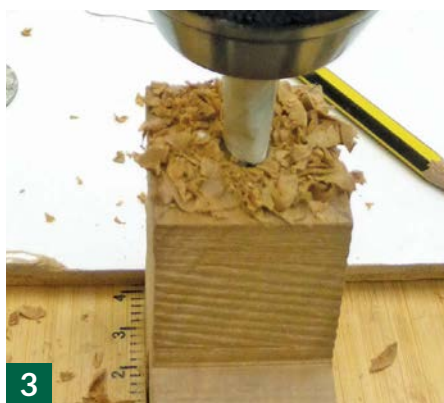
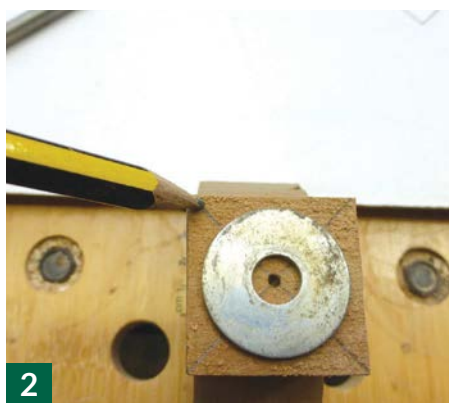
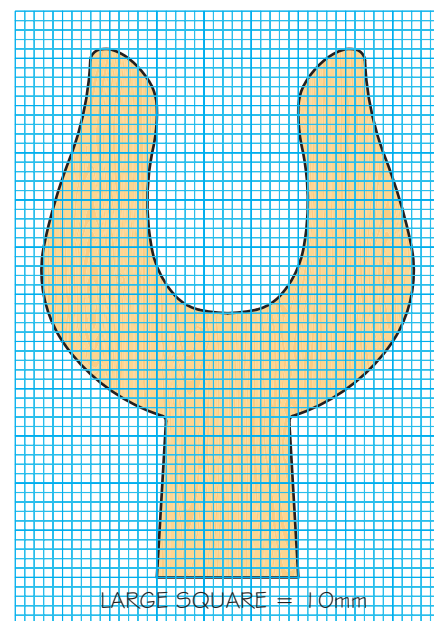
of each hole that you drill. In addition, the shape and style of the head may also dictate the depth, which applies to this head. The measurement of this head between the middle and bottom of the neck is 56mm. Half of a 127mm rod is not feasible, the safe maximum is 45mm. Drill an 8mm hole with a wood drill to this depth and use masking tape around the drill bit so you don't drill too deep. I have used a 13mm buffalo horn spacer. Drill an 8mm hole in the centre.

4 Drill an 8mm hole in the shank 69mm deep ($127\text{mm} - 45\text{mm} - 13\text{mm} = 69\text{mm}$). If your spacer is a different thickness, you will need to adjust accordingly.

5 To ensure the top of your shank is flat, place an edge of a magazine around the top and secure with masking tape. Use a carving knife to pare away any high spots.

6 Carve a dish shape in the top of the shank, which will help with the seating of the spacer and collect excess glue.

7 Dry fit the metal rod, spacer and shank and revolve the three pieces until you achieve the best fit. Mark all of the pieces at this alignment.





8 Use epoxy glue to fit the metal rod and spacer to the shank. Make sure you hold the pieces together until the epoxy sets. Sometimes an air pocket can slowly push up the rod. Alternatively, you can hand tighten a washer and bolt on top of the spacer. Leave for 24 hours to dry properly.

9 Now for the head. With a coarse bullnose burr, tidy up the side profile to match the template.

10 Divide the outside edges of the two arms into quarters and pencil on the lines.

11 Using the same burr, taper both arms from the bottom to the

top. Using the lines as a reference, aim for the top to be equal to half of the overall width. Do not touch the neck.

12 Round over the outside edges of the arms with the coarse burr using the centre line for reference.

13 Draw the centre line on the inside faces. Round over the edges as above.

14 Wrap masking tape around the top of the shank to protect it. Remove some of the tackiness or the tape may pull away some bark when it is removed. Now you need to match the neck to the profile of the spacer and shank. Place the head on the metal

rod and to stop it spinning as you work, wrap several layers of masking tape around the rod until the head is firmly in place. An alternative is to glue the head at this time. I prefer not to, as it is easier to finish the head while it is off the shank. Use the coarse burr to remove wood from the neck. You are aiming for a straight line along the outside edges of the shank, spacer and neck. Leave enough material for final sanding.

15 Remove the head from the shank. Sand with 120 and 180-grit abrasive on a sanding drum. ➤

16 Finish the sanding of the head by hand with 240, 320 and 400-grit abrasive. Place the head on the shank and remove the masking tape to finish sanding the neck. Take care not to sand any of the bark off the shank. The use of a spacer is the best way to cater for the differences in the shapes of the shank and the head.

17 If you wipe white spirit across the head and hold it to the light, it will reveal any remaining blemishes. When you are happy with your finish, use epoxy glue to secure the head on to the shank and spacer. Use a cloth with a dab of white spirit to remove any excess glue that oozes from the joint. Carve the tip of the shank to receive the brass ferrule, but do not glue.

18 Apply several coats of your choice of finishing oil to the head and stick including the bare wood of the ferrule placement. A thumb stick used for shooting is jammed into the mud. This method will ensure the business end of the stick is as waterproof as possible.

19 When the final coat of oil has dried, secure the ferrule with epoxy glue. ■



16



17



18



19

REPAIRING CRACKS

As I removed wood from the head, I came across a small crack and a hole – probably woodworm. There are several ways to repair these small faults:

The first method

Mix sawdust with wood glue to a thick consistency. Apply to the crack and allow to dry, then sand.

The second method

Press sawdust into the crack and apply superglue over the top. Quickly sprinkle over a touch more sawdust as the mixture will undoubtedly sink. Allow time to dry and sand.

The final method

Use a piece of wood from which you cut the blank. If you are working with a piece of spalted wood, or similar, that you think may contain the odd hole, keep a few small pieces and some sawdust to hand. Shape a sliver of wood to the shape of the defect. Keep testing the fit until you achieve a tight fit. When repairing a woodworm hole in



Crack found during carving



Repair of woodworm hole



Glue repair wood into hole



Repairs finished

a hardwood such as this cherry, whittle the piece to the approximate size, place it in the hole and turn it several times and it will take on the shape of the hole creating a neat repair. When you are

happy with the fit, apply wood glue to the hole and then force in the piece of scrap wood. When dry, cut the excess wood close to the surface of the carving and sand.

Jennie Starbuck



Tony Wilson



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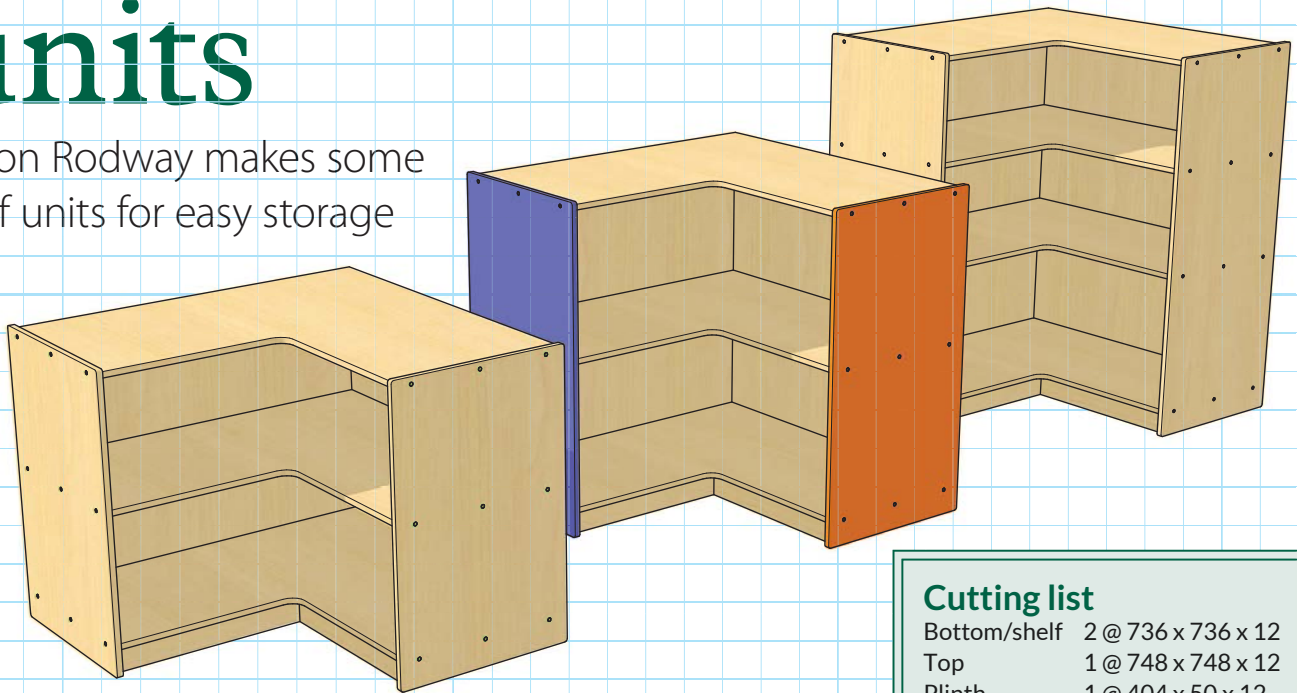
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PLANS 4 YOU

Corner shelf units

Simon Rodway makes some shelf units for easy storage



Corners of rooms can often be ideal places to use for storage, but making a cupboard or a shelf unit to fit the space can often result in an awkward bit of geometry at the front. These corner units, which come in three alternative heights but all with the same footprint or plan size, are an alternative way of solving the corner problem, and in fact can be assembled with just a few simple tools, with all the main junctions formed by butt joints.

Materials

For materials, you will need a couple of sheets of decent quality 12mm plywood, and about 2.5 metres of 25mm square batten. The smallest unit almost comes out of a single sheet, but not quite. The 900mm high unit will use most of two sheets, but in any case these are so simple and quick to make, you may want to combine two sizes together.

Making the units

Once you've marked out and cut the first shelf, use this for subsequent shelves and also the top to get the

most efficient cutting sequence from your plywood. Don't forget however, that the top has an additional 12mm along both back edges where it overhangs the backs instead of butting against them, as the shelves do.

On the underside of the bottom shelf, draw a line 24mm in from the front edges and fix the front battens along this line. Then, fix the back battens along the back edge. Next, you need to mark out the positions of the shelves on the inside faces of the backs and sides, and then pre-drill holes along the centrelines, making sure that the heights correspond across all four components. The corners of the sides all have a 6mm radius, and all front edges of the shelves and sides should also ideally have a small roundover applied.

The shape and size of the shelves and the method of support makes the next step a bit awkward, especially as the fixing into the end grain of the shelves need pilot holes drilling to avoid splitting the plywood. Working with one side and the opposite back is possibly the best solution, and in that case start with the shorter of the two

Cutting list

Bottom/shelf	2 @ 736 x 736 x 12
Top	1 @ 748 x 748 x 12
Plinth	1 @ 404 x 50 x 12
Plinth	1 @ 392 x 50 x 12
Batten	1 @ 404 x 25 x 25
Batten	1 @ 429 x 25 x 25
Batten	1 @ 711 x 25 x 25
Batten	1 @ 736 x 25 x 25

Tall unit

Sides	2 @ 900 x 380 x 12
Back	1 @ 880 x 736 x 12
Back	1 @ 880 x 748 x 12
Shelf	1 @ 736 x 736 x 12

Mid unit

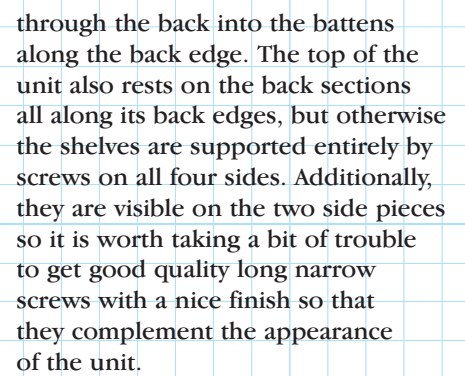
Sides	2 @ 730 x 380 x 12
Back	1 @ 710 x 736 x 12
Back	1 @ 710 x 748 x 12

Low unit

Sides	2 @ 600 x 380 x 12
Back	1 @ 580 x 736 x 12
Back	1 @ 580 x 748 x 12

back sections and its corresponding side, so that when you come to put the second back section in place it just goes over the first and you can just screw through along the vertical edge into the end grain of the shorter piece.

For extra rigidity and support, the bottom shelf can have additional screws



You also have an option here of making this whole piece demountable, although this does mean finding a way of fixing the joint between the backs and the top, and also the vertical end joints between the backs and the sides, other than lines of glue. In the first instance, it would be quite simple to screw down through the top into the back sections, and would not have a negative impact visually, but this isn't really an option on the sides. However, if you make sure the end screw holes through the backs into the shelves are quite close to the sides, a simple unglued butt joint will probably not move significantly over time given the small spans involved. The plinth can still be glued to the battens either way, as the bottom shelf plus battens and plinth can be treated as a single component.

The finish is a matter of personal preference; I have suggested a painted option on the middle sized unit, particularly as this type of storage is also ideal for play areas for children, as the shelves on the smaller units are quite low and accessible. ■



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PHOTOGRAPH BY CHRIS GRACE

Getting the most *into* your extractor

Chris Grace improves the effectiveness and ease of use of his extraction system

Having a chip/dust extractor is great, but they are only of real benefit if they are easy to use and can efficiently remove the waste from where it is generated. My old extractor was okay, but it used a bag-type filter which I felt was blowing fine dust back out into my workshop. The extent of this was realised when I moved the extractor and found the area behind covered in a build up of very fine dust. Also, it was tucked away in the corner of my workshop so I sometimes had to rearrange things to get to it and turn it on. We just never have a big enough workshop, do we?

So, it was time for an upgrade and I happened to come across a vortex-type extractor with a fine cartridge filter. It looked big but amazingly the footprint wasn't much different from

my old extractor. When it arrived I found the control box was on the wrong side for where it would have to fit. It also started a self-cleaning cycle each time it was switched off, which is okay if you're running it for prolonged periods, but annoying if you want to regularly switch the extraction on and off. The solution was to replace the control box so it could be located conveniently and convert the filter agitator to manual. Oh, and I thought I might as well add a remote control, plus a ducting upgrade and a few other enhancements while I was at it.

UPGRADING EXTRACTION

My new extractor stands on a low shelf making use of the storage space underneath. The control box is located on the wall to the left. The extractor worked well, but I suspected it would ➤



Elevate extractor to maximise space

perform better if I changed the 100mm flexible pipe for 125mm steel spiral ducting. To create a secure installation the pipes and fittings were connected together with a couple of rivets. The system was made airtight by wrapping it with duct tape. You can see my 125mm spiral ducting alongside my old 100mm flexible pipe. The new system provides increased airflow and a place to mount extension sockets, although I had to make sure the ducting was properly earthed throughout. I often re-purpose items to make what I need inexpensively. The 100mm ducting provided the perfect solution.

A selection of plastic ducting is ready for me to make the accessories to collect the waste where it is produced, at source. I bought my extractor from Axminster, my spiral (metal) ducting and my domestic ducting from Ventilation Centre Ltd.



Secure pipes with pop rivets



Make pipes airtight with tape



Rigid ducting is more efficient



Domestic extraction fittings

ADAPTORS AND BLASTGATES

I used a flexible plastic pipe adaptor as a quick coupling to accommodate a variety of interchangeable collection shrouds attached to the end of my workshop flexi-hoses. A swivel collar with a hinge attached and neodymium magnet made it quick and easy to

position the adaptor exactly where it was needed. Blastgates are essential in a ducted system serving several locations in the workshop, but the little screws that hold them open are a pain, especially when they fall out. I drilled the blastgate body and inserted

a neodymium magnet against the steel slide. So there's no fiddling to open or close the gate, I just slide it and it stays put. I cut the pipe with a hacksaw and used a deburring tool to clean up the inside. I found cleaning the outside easier with a fine file.



Swivelling collar avoids knots in pipes



Magnet holds blastgate open/closed



De-burr to eliminate snagging points

LATHE EXTRACTION

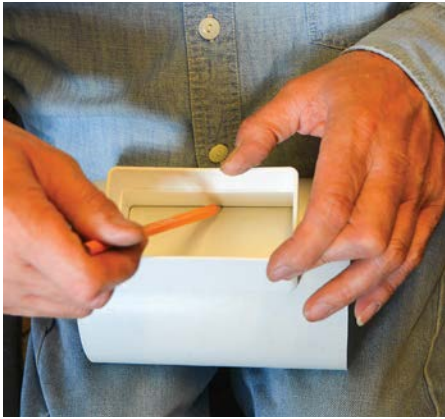
Capturing dust at the source is a great idea, but it's difficult on a lathe where I make things of very different shapes. My magnetic pipe works well, but I wanted something more flexible so I started on a modular system. I decided three sections with interchangeable heads would provide sufficient flexibility. It is important to get a snug fit, so using the round pipe I marked an arc on the rectangular joints, before filing them to shape. As you can see it's almost a perfect fit.



Mark cuts carefully



Test fit before gluing



Maximise cutaway for best air flow



Strap securely, but allow rotation



Make 'end plugs' on the lathe



Provide sufficient friction to hold



Three arms set with different heads



One arm blanked off increases flow

On the inside, I marked the connector ready for the cutout to allow the air and waste to pass through. I then drilled a hole in each corner and used a coping saw to make the cuts. It was glued together with solvent weld and the joint reinforced with a fillet where possible. For one end of the stand I cut a support on the bandsaw. A sanding arbor in my drillpress, with dust extraction, enabled me to get a good smooth fit. A strap made from

aluminium holds this end snugly, but still enables it to rotate when needed. The other end of the base required a stop to plug the end of the round tube. The last part required for this rig was an MDF wheel with a ridge on one end made on my lathe with extraction running. This was then bolted to the support stand with washers, which was just tight enough to provide some friction to prevent the round tube turning on it's own, but

readily moveable. The three sections were joined with 100mm round duct connectors left unglued to enable independent rotation. The sections can be changed to accommodate the pipes that are best suited to get extraction as close as possible to the source of the waste. The pipes are left as a push fit so they can be adjusted as required. Here I have the system set up to extract a long(ish) cylinder and they remove almost all of the dust at source.

SPECIALISED DUST PORTS

With the lathe sorted I turned my attention to other sources of dust – my drill. A round 100mm to rectangular 200mm elbow adapter proved perfect for extraction on my drill. I created a cutout to enable clear visibility and maximise extraction efficiency. It enabled me to get suction around two sides of anything I am drilling. Where I am spraying waste from a carbide burr on a mini angle grinder I found a guttering hopper was more effective at catching the dust. Unfortunately, the plastic ones don't come with a 100mm outlet so I simply cut a hole in it and solvent welded

one in. Where I need greater dexterity I use a short length of pipe with a curved piece solvent welded onto it, which I attach to my wrist with a strap. This means both hands are completely free to concentrate on the work and the tool I am using. A benefit to using plastic is if a cutter touches the duct then there is no damage or drama. Despite my best endeavours, I'm still able to make ample mess on my floor and needed a floor sweeper to clean up quickly and effectively. Using a combination of squares, I marked up the rectangular duct for a 45° cut to form the sweeping end. ➤



Angled drill press dust collector



Rain hopper dust collector



100mm pipe and wrist strap

If you want to try this at home, here are some top tips:

- Capture as much of your dust/chipping at source to prevent it entering the atmosphere in your workshop
- Plan your layout carefully to minimise tight bends and get extraction where you need it
- Don't attempt to cut thin plastic tubes, etc. on a power saw. It's too flexible and would be unsafe
- Make sure you use a saw with an appropriate number of teeth for the material you are cutting. Coping saw blades are available with different tooth counts
- I always pilot drill into the edge of MDF to stop it splitting before screwing the pieces firmly together
- Use a fine hacksaw blade to make good clean straight cuts in thin plastic
- Keep all sorts of things. I do, much to my wife's dismay. I use almost everything eventually
- When using bolts to secure duct parts, ensure they are as short and smooth as possible inside to prevent them snagging debris

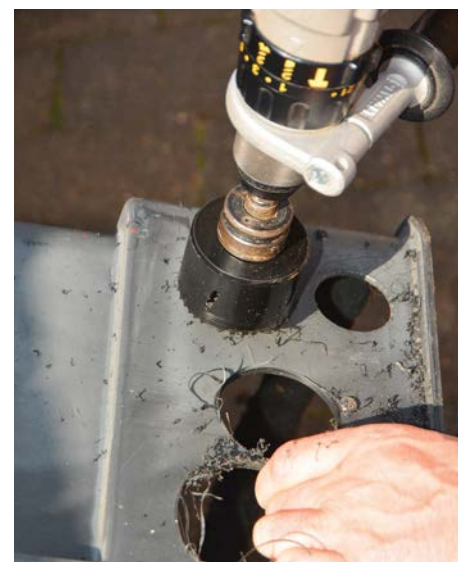
FLOOR VACUUM

A discarded plastic water tank provided the material to make wheels for the bottom of the floor vac, where a hole cutter creates instant wheels.

A quick trim up on the lathe was the easiest way of putting a slight chamfer around the circumference. Stainless bolts and washers, left slightly loose, enable the wheels to turn. A round to rectangular adapter with a wooden handle completes the floor sweeper. All of my dust catching flexi pipes and accessories are quickly interchangeable with a push fit thanks to careful selection of 100mm duct parts. Finally, I have another job clearing up all the mess I made on my last turning project! ■



Transfer lines with two squares



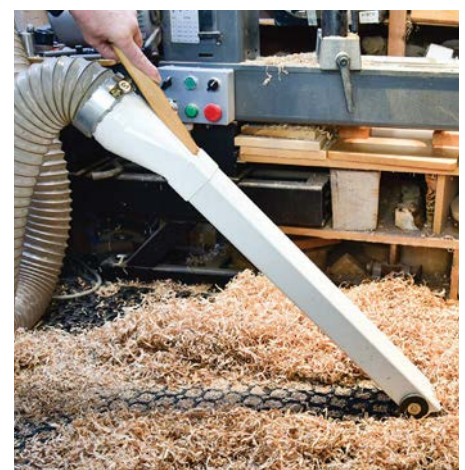
Holesaws produce instant wheels



Trim plastic with a trailing scraper



Leave the wheels free to rotate



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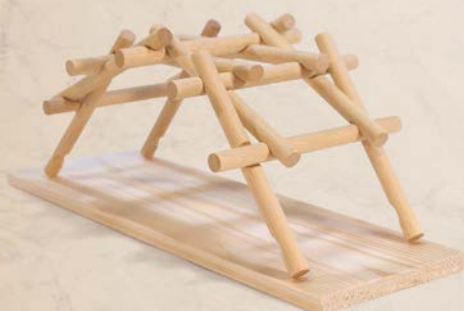
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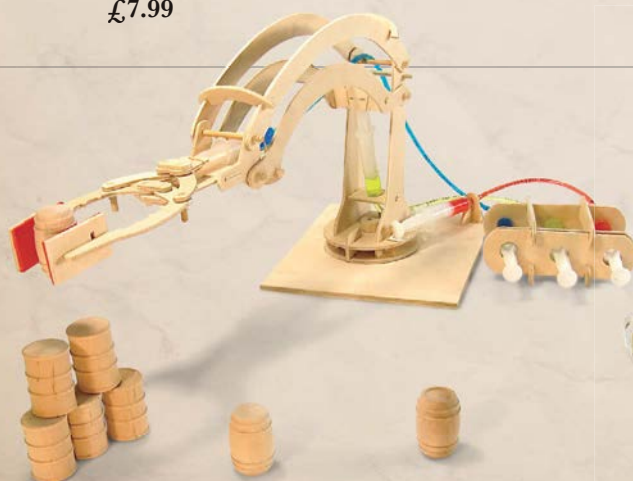


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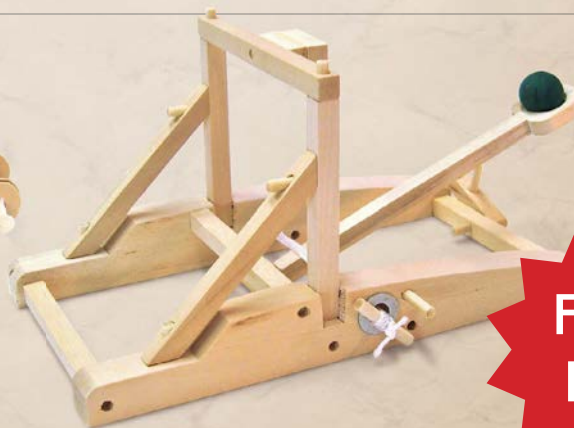
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Adding a mortise bench stop to a bench

Michael T Collins

explains how to incorporate a bench stop in a bench

Things you will need

- 6mm and 25mm chisel
- Brace and 16mm and 6mm spiral bits
- 4B pencil
- A bench – it will need to be at least 50mm thick

As a child, a device embedded in my father's bench always intrigued me. The device had a row of teeth that rose almost dragon-like from the bench surface and, when you were not paying attention, could bite mercilessly. Years later, when I attended secondary school, all the benches had a similar device and I still managed to draw blood on its sharp teeth when I was not paying attention.

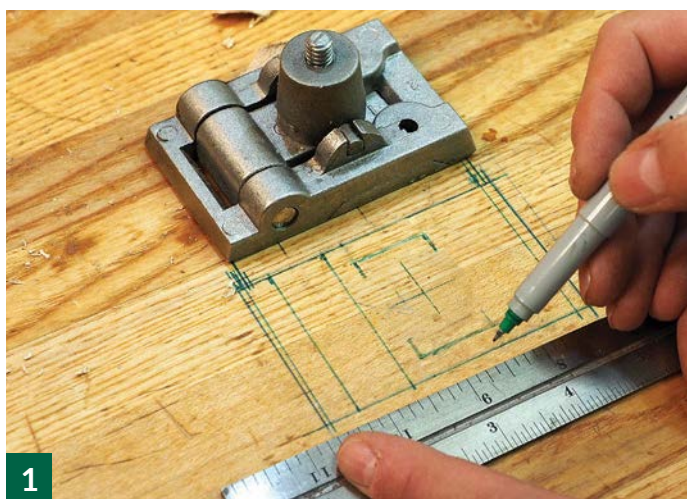
Recently, I was rummaging around an antique store in New York and

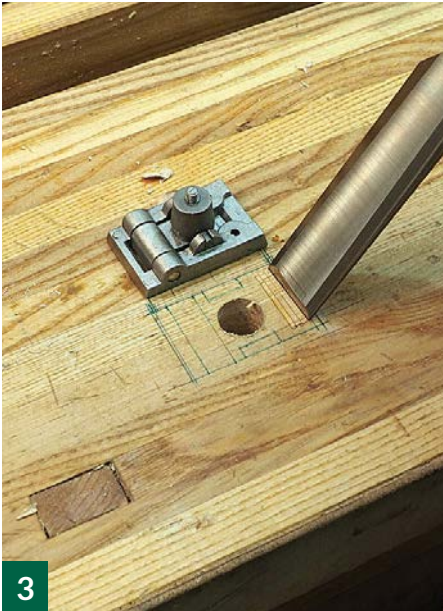
came across one of these stops/dogs. Naturally I had to buy it and install it at the end of my bench, for no other reason than nostalgia.

1 Clear your mind of the fear of chiselling deliberately into your bench surface. Decide on the location of the dog. This is a personal choice; most of the boards I plane are 200–255mm wide and up to 2400mm long, so it's a good idea to place this dog about half the width of a typical board from the front of the bench, 125mm and far enough along the bench so you can place most of the board on the bench. Mine was 305mm from the end

– your location will be different. If you are left-handed it needs to be placed on the right hand end of the bench. Position the stop upside down in the correct orientation, left to right (don't mix this up). Mark the outline of the dog and key locations using a square – the two pivot points and spring holder locations, as well as the bevel angles.

2 The spring holder must be able to move slightly, so drill a hole about 1mm wider than the widest diameter. Use a 16mm bit and drill to a depth of 25mm, then use a 6mm twist bit to drill an additional 6mm for the height adjuster screw. ➤

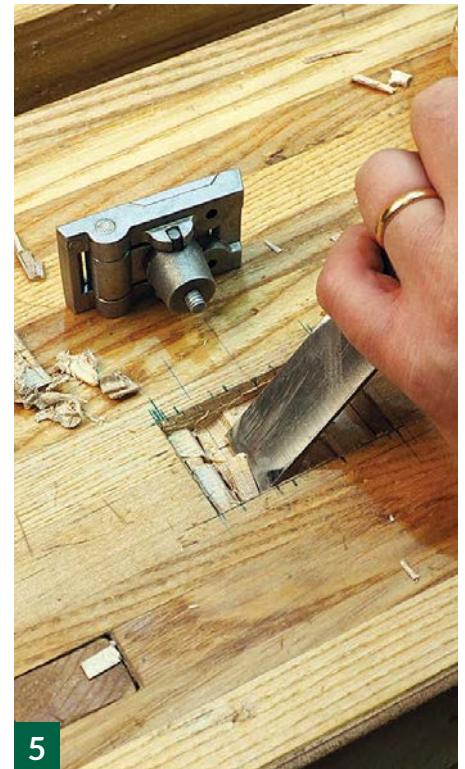




3 With a wide chisel, start to chop out the mortise. Make sure to go easy because one side of the dog is about half the depth of the other.



4 At this point, I decided to score round the outline with a marking knife to prevent chip out. It's best to do this before you start any chisel work at all.

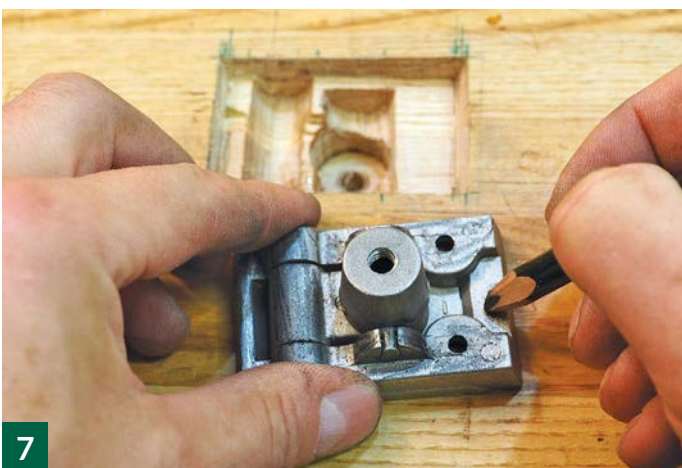
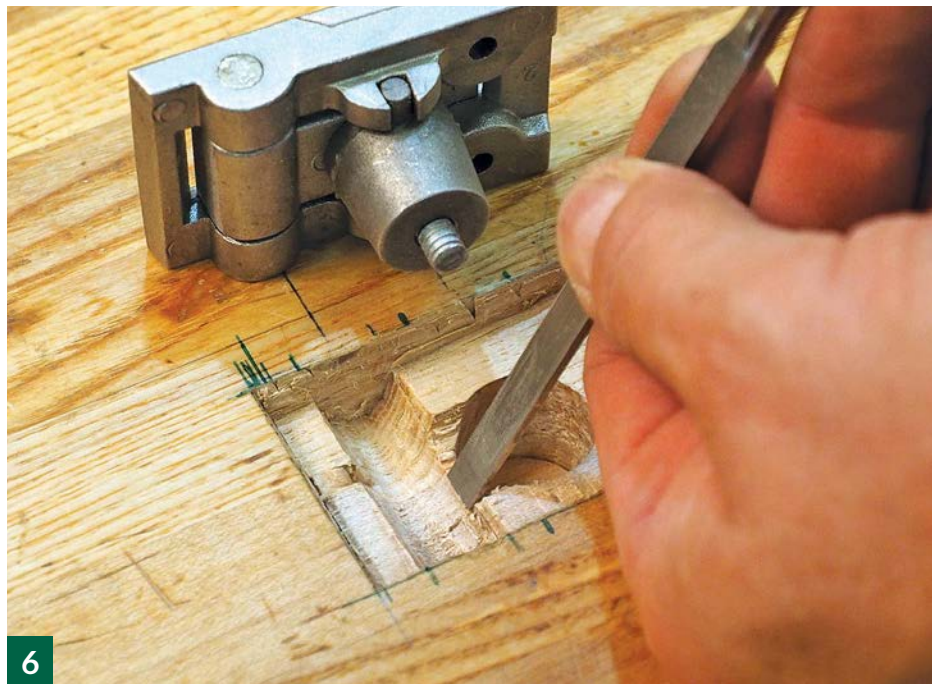


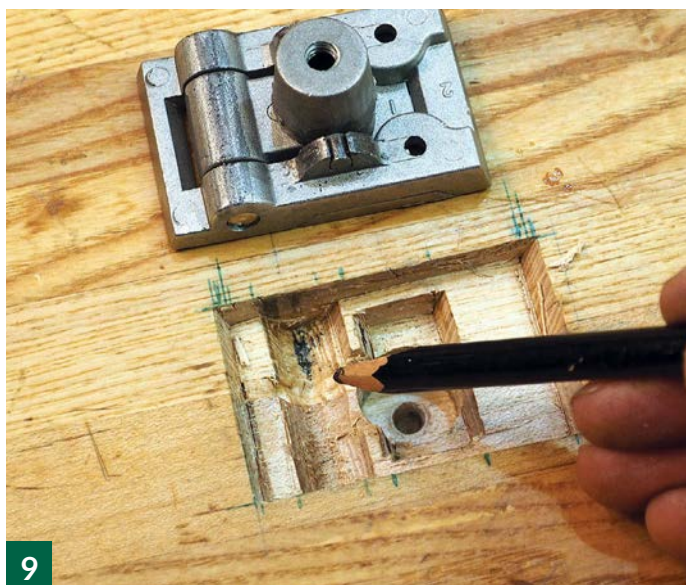
5 Work the section that will house the hinge. With the bevel down, make pivoting cuts from both sides.

6 Switch to a narrower chisel to fine tune the recess with a shallow paring action.

7 Using a 4B pencil, scribble all over the underside of the dog.

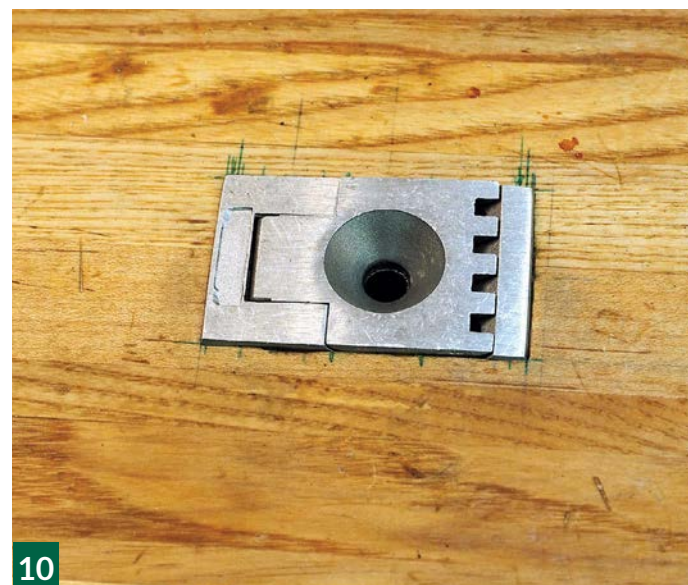
8 Place the dog in the mortise and gently tap it a couple of times with a wooden mallet, but don't pound. If your dog is made from cast metal, like mine, it can be quite brittle.





9

9 Remove the dog and look at where the graphite has been transferred in the mortise. These locations will indicate the proud locations and need to be pared away. Initially there will be lots of graphite deposits.



10

10 Repeat this process slowly until the dog fits snugly into the mortise. With the memory of 'bitten' knuckles, I wanted the dog to lay just slightly below the surface of the bench. I also didn't want this coming into contact with any workpiece slid across the bench. I used a small router plane to remove the last of the waste.

11 Place the dog in the mortise and mark the location of the screw holes. Drill pilot holes – the screws need to be small enough to fit into the counter sink holes, but long enough to stop them pulling out of the bench (there will be a lot of force pushing against this dog). I opted for stainless steel screws. Finally, clean up the surface of the bench and reapply any finish you might want to use on your bench.



11

12 Now you have a tried and tested method of securing wood to the bench for planing, but remember to let sleeping dogs lie and watch out for their bite! ■



12

Supplier

Plane stops similar to the ones I bought can be obtained from:
www.leevalley.com

For other tricks 'n' tips, visit:
www.sawdustandwoodchips.com

White-washed birdhouse

In an extract from *Bird, Bee & Bug Houses*, Derek Jones makes a birdhouse for the garden

PHOTOGRAPH BY GMC/ANTHONY BAILEY



Bird, Bee & Bug Houses

By Derek Jones

ISBN: 9781861086440

Price: £14.99

Web: www.gmcbooks.com

Box-building variation

This small box is also an ideal size for birds that prefer an open-front box in which to nest. Follow these instructions, but assemble the front without the middle section. Obviously, there would be no need to hinge one side of the roof with this alternative design.

Species to expect

This birdhouse would make an ideal home for: UK species – with hole front: house sparrow, tree sparrow, tits (willow tit, *right*), wren, nuthatch, pied flycatcher; with open front: robin, wren, pied wagtail, spotted flycatcher.

US species – with hole front: nuthatch, titmouse, wren, warbler, chickadee, warblers; with open front: barn swallow, phoebe.



This little bird box is made out of 15mm exterior-grade plywood and some off-cuts of softwood tongue and groove. The roof uses up some leftover strips of roofing felt. This design can be adapted to make different types of nest box to attract different kinds of birds – a hole-fronted box for smaller birds, such as tits or sparrows, or an open-fronted design for robins or flycatchers, for instance. The opening roof in the hole-fronted box design enables you to clean out the box thoroughly in the winter to reduce the chances of disease or infestation, but do not be tempted to inspect the box during nesting through spring and summer. The hook on the roof protects the young from predators such as crows, squirrels or rats.

1 Line up your pieces of tongue and groove for the front and carefully mark a centreline down the middle.

2 If you are using very small pieces you might want to adjust the angle slightly, but don't reduce the floor size too much. Cut the angles on the individual components and use the centre line and a straight edge to make sure everything lines up.

3 With a closed-front box, you should provide some footholds on the interior to aid young birds in reaching the entrance hole. Some grooves like this would be fine; alternatively, glue some small strips of wood up to the hole.

4 Nail and glue together the lower part of the box, using the front as a template for the back. Create the angles for the roof and fix one half in place with glue and pins.

5 Drill the entrance hole 32mm in diameter and trim the edges of the bottom so that they match the slope of the sides.

6 Remove any sharp edges or splinters around the hole inside and out with some 150 grit abrasion paper.

7 Drill a couple of small holes in the bottom of the box to allow any water that might collect inside the box to drain out.

8 Using a craft knife, cut some strips of roofing felt 63mm wide to lay across the top.

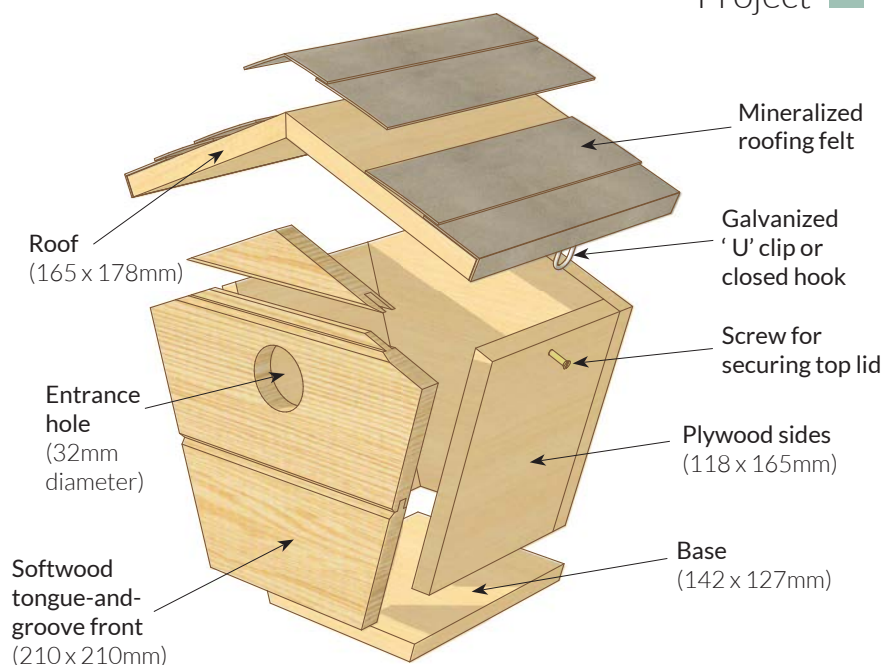
Things you will need

Materials

- 15mm external plywood
- 15mm softwood tongue and groove
- Mineralized roofing felt
- Brass hook
- Polyurethane glue

Cutting list

- Front and back 228 x 228mm and trim
- Sides 118 x 165mm and trim
- Base 142 x 127mm and trim
- Roof 165 x 178mm and trim
- Top 228 x 210mm



9 Start at the base of the roof. With the loose roof piece in place, glue the strips of felt in place using either silicone adhesive or hot-melt glue. Allow an overlap of at least 13mm on each strip. The last strip to be glued along the ridge acts as a hinge, allowing the loose part of the roof to be lifted so you have access to clean out the box.

10 A closed hook fitted to the underside of the roof can be used to fix the lid closed and keep out predators. ■



PHOTOGRAPHS BY GMC/DEREK JONES, UNLESS OTHERWISE STATED

Coming next month in
Woodworking
CRAFTS

ISSUE 23
ON SALE
19 JAN

Woven top stool – *part 2*

- Traditional style coffee table
– Michael T Collins
- Using a router mortise box
– Louise Biggs
- Clock case fakery
– Louise Biggs



PLUS:

- Turning basics: sharpening • Coppicing with Gary Marshall • Reader group test



It was a beautiful day in Wisconsin so we took our new SCOUT lathe outside for a few photos.

Made almost 100% in America, including the motor, inverter and castings, SCOUT is Robust's "big-little" lathe. With a 14" swing and 26" spindle capacity, it nicely bridges the gap between under powered mini-lathes and our full size offerings.

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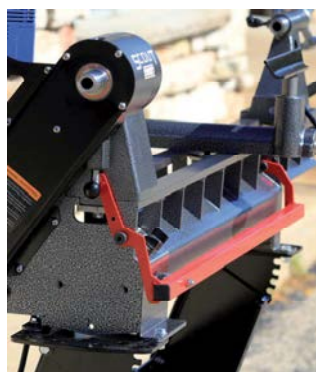
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KITTED OUT

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

New Bosch hammers

The GBH 2-28 Professional and the 2-28 F Professional with 830 and 880 watts of power are the first rotary hammers to have a function that offers better control in heavy duty applications. Featuring a built in sensor, the hammers are designed to stop in the event of sudden and unpredictable rotations, so the risk of injury is reduced. They have variable speed controls, a rotating brush plate, rotation-stop, SDS-plus tool holder and a ball grommet to prevent cable breaks, in an L-Boxx.

Contact: Bosch

Web: www.bosch-pt.com



LXT and 14.4V 100 staplers

The new Makita DST112 18v 3.0Ah version generates 6000 shots while the DST111 14.4v version delivers 5000 shots from a 3.0Ah battery. Both staplers have a magazine capacity for 150 staples of 10mm width, either 7mm or 10mm depth and 0.5 x 0.7mm wire size.

These new compact cordless staplers have selectable firing modes which offer either bump firing and triggered sequential control. The anti-dry-fire safety mechanism requires the nose tip to be pressured against the material for firing to take place when the trigger is pressed. A trigger lock must be applied when the machine is put down. The moulded plastic magazine reduces the overall machine weight and has a viewing window to check remaining staple stock. They come with a LED job light, belt-hook and soft grip handle. Both staplers are available as 'bare' units.

Contact: Makita UK

Web: www.makitauk.com

From
\$93.60

Tapered dovetail spline system

The tapered dovetail spline system provides the woodworker with a quick and easy way to add decorative details and joint reinforcement for box projects. It creates a unique, tapered dovetail groove that accommodates a matching tapered dovetail spline. This system is perfect for small projects like jewellery boxes and humidors to larger projects such as blanket chests and fine cabinetry. It consists of an extruded, anodised aluminum router jig for creating tapered dovetail grooves in boxes. The router jig can be used with a hand-held router or on a router table. The router is guided by a brass guide bushing between the tapered fingers of the router jig. Available in three, money-saving value packages, and replacement parts are also available separately.

Contact: Infinity Tools

Web: www.infinitytools.com





New Jet pillar drills

The Jet JDP-15B bench mounted pillar drill and Jet JDP-15F floor standing pillar drill have many features in common, including a 80mm of quill travel with one turn of the handle and an integrated depth stop for repeat accuracy of drilling depth. Poly-V drive belts give smooth, vibration free running with maximum power transmission. They have a one-handed, tool-free belt tensioning system for simple and easy speed changing. The ABS top belt guard is held magnetically and interlocks with the switch for safety.

Contact: BriMarc

Web: www.brimarc.com

Autumn/winter catalogue

Whether you're winter proofing or need to do some general maintenance, Machine Mart's new catalogue is packed full of all the tools and equipment any garage or workshop may need this winter. Featuring over 1600 price cuts and new products, the 516-page autumn/winter catalogue is a 'must have' for anyone seeking a huge choice at unbeatable value.

Machine Mart offers a superb range of tools and machinery, including a range of space heaters, generators, specialist hand and power tools, jacks, tool chests and much more.

Contact: Machine Mart

Web: www.machinemart.co.uk



BOOKS

Taunton's New Kitchen Idea Book

By Heather J Paper

From the publishers of Fine Homebuilding, the *New Kitchen Ideas Book* provides design options for cabinets, countertops, sinks and appliances, from flooring to all kinds of finish details. The book contains over 325 bright and high quality photographs, and is full to the brim with expert advice on kitchen design, inspiration and practical information. The guide looks at layout, lighting and storage solutions, which can make your dream kitchen a reality.

ISBN: 9781631864063

Price: £16.99

Web: www.thehmcgroup.com



Taunton's Complete Illustrated Guide to Bandsaws

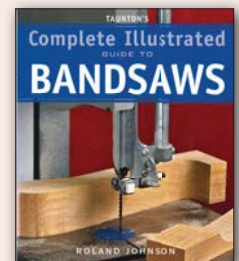
By Roland Johnson

The *Complete Illustrated Guide to Bandsaws* covers all you need to know about working with bandsaws. It looks at the basic uses of the machine to some of the most advanced techniques, including shaping operations and sophisticated joinery.

ISBN: 9781600850967

Price: £17.99

Web: www.thehmcgroup.com



Classic American Furniture: 20 Elegant Shaker and Arts & Crafts Projects

By Christopher Schwarz & the Editors of *Woodworking Magazine*

Classic American Furniture features 20 classic Shaker and Arts & Crafts projects for your enjoyment. Fully equipped with a detailed guide to create advanced, and simple, projects such as an 18th century dry sink and each project helps you improve on specific woodworking techniques such as wood movement. Each project is provided with photographs of the author, Christopher Schwarz, showing you how to complete each step. Alongside these images and detailed text about how to make these projects, drawings have been provided with the exact measurements so you won't be wasting any wood. Use this book to transform your home with new and exciting projects such as the Shaker hanging cabinet and stub-tenon doors.

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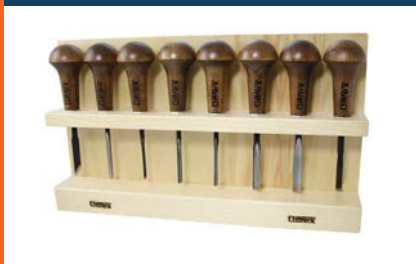
New Products



This new carving drawknife is just one of the many new products from Narex.

The Narex range is regularly increasing to make it one of the worldwide market leaders in carving and woodworking tools.

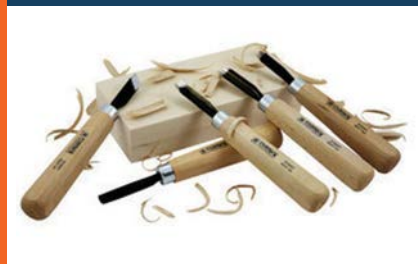
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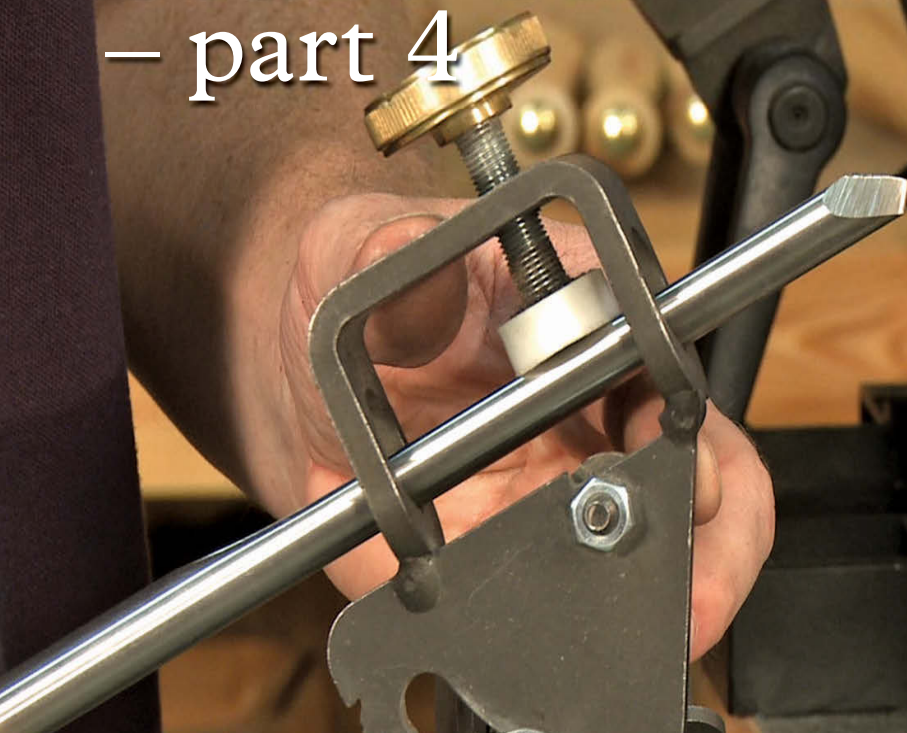
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What you need to know to start turning – part 4



Using a turning tool grinding jig

This month, **Mark Baker** looks at sharpening machine options for turners

When turning it is essential that we have sharp cutting edges on the tools we use. There are various options as far as kit to help you to do this, but they break down into three distinct types of machine to sharpen turning tools that we typically use.

BENCH GRINDER

This type of sharpening system usually comprises two wheels: one coarse and one fine grit grade of wheel. The coarse wheel, typically 36–60 grit, is used to rough shape a tool and the fine wheel, typically 80–240 grit, is used to create and refine the cutting edge. They come in two sizes – dictated by the diameter of wheels they take – and that is 150mm and 200mm. They are also available in slow speed, typically about 1400rpm and at a faster speed of about 2000rpm. The wheel widths that can be accommodated on bench grinders vary from make to make. Typically 25–40mm wheels are the



PHOTOGRAPH BY RECORD POWER

Coarse and fine abrasive wheels on a standard dry grinder

most common and many turners have a 25mm wheel for the coarse grit and due to more options of where to place the cutting edge on the wheel, a wider wheel for the finer grip.

There are various types of materials used for the grinding wheels, but the most commonly used by turners are aluminium oxide, and they come in

various colours.

Bench grinders do not normally come with fully integrated adjustable toolrest platforms suitable for turners – these usually count as accessories – but one is needed in order to make sharpening simple and easy, however I will look at those later on. ➤

BELT LINISHER SHARPENING SYSTEM

Belts have been used to shape and sharpen tools for a very long while, but only relatively recently have we seen purpose-built belt sharpening systems being made. Quite simply these are systems that have an adjustable table, which allow access to the belt more comfortably to sharpen tools than on a disc/belt sander combo we often see used in woodworking shops. These systems may or may not have an integral adjustable toolrest. If they do not have one, a separate unit will need to be made or bought to get the best from them. Like the wheels on a bench grinder, various types of abrasive belts can be bought grit-wise and material-wise (aluminium oxide being the most common one used by turners). Coarse and finer grit grades similar to those for the wheels are the most commonly used by turners. These systems run at a lot slower speed than the bench grinders.



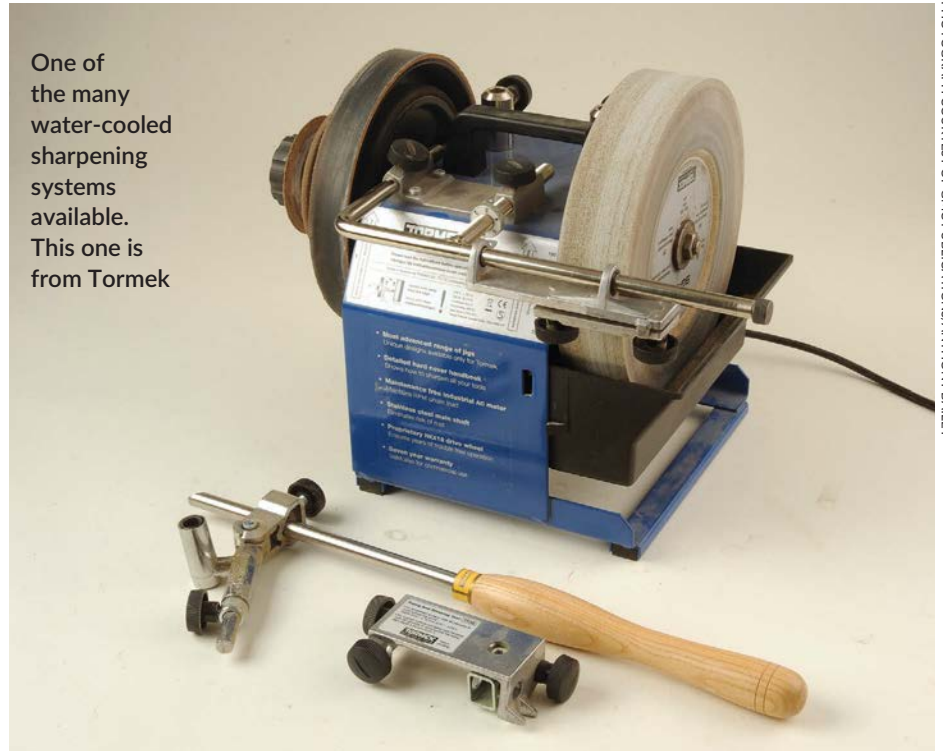
Dedicated belt sharpening system from Robert Sorby

Safety

Follow at all times the manufacturer instructions as far as operation procedures, maintenance and safety. Always wear safety goggles or glasses.

WATER-COOLED SHARPENERS

One of the many water-cooled sharpening systems available. This one is from Tormek



Water-cooled sharpening systems have a wheel that runs slowly in a water bath. The wheels are either orientated vertically so you sharpen on the edge of the wheel, or horizontally so you sharpen on the flat side/face of the wheel. Invariably there is some form of tool platform to sharpen your turning tools. Modern units provide many tool holding/rest options, to suit sharpening all types of products and tools other than turning tools. There are various sized units that have different wheel diameters. The most

common wheel diameters are 200mm and 250mm. Many water-cooled systems have an extra wheel on the other end of the unit that is typically a leather-faced wheel used for honing tools. The premise behind water-cooled units is that since the wheel runs in water they do not generate the heat that grinding wheels and belts potentially do when shaping and sharpening tools. You will find many opinions as to what is the best for turners, but the simple fact is each type – with the correct accessories – can work well.

ESSENTIALS FOR SHARPENING EFFECTIVELY

The best option to buy, or have as an integral part of the sharpening unit that you buy, is an adjustable rest which is often an adjustable table. This allows you to adjust the table angle close to the sharpening wheel or belt to enable you to grind bevels on the tools to the correct angle. You can see from the previous pictures of the sharpening units that some are integral, but others are optional extras. These come in various sizes, but it is essential to have a big enough table to properly support the tools without moving or flexing as you shape and sharpen them.

Adjustable tables come in various shapes and sizes. This is from Veritas



The other commonly available option is an extendable arm. This allows you to extend an arm in or outwards and support the end of a handle or blade while you shape or sharpen a tool. How far in or out from the grinding wheel you have the arm adjusts the grind angle you can put on tools. These types of sharpening tables and arms allow you to sharpen all of the basic set of turning tools mentioned in previous articles.

There is, however, one type of grind used on bowl gouges and spindle gouges – the swept back grind or fingernail profiles – that while they can be created using a table, many find it easier to use a specific jig and that comes in the form of an adjustable rolling armature system. Such systems are available for all the three types of sharpening units mentioned.

Multi-functional grinder system from Oneway. A fingernail/swept back profiling arm are also available



PHOTOGRAPH COURTESY OF THE TOOLPOST

This is a fingernail/swept back grind profiling jig woodcut. They also offer optional table platforms as well



PHOTOGRAPH COURTESY OF AXMINSTER TOOLS AND MACHINERY



PHOTOGRAPH COURTESY OF BRIMARC TOOLS

Fingernail/swept back grind profiling jig from Tormek for their water-cooled sharpening unit

Multi-function rise and tilt table and fingernail/swept back grind combination unit from Robert Sorby



PHOTOGRAPH COURTESY OF ROBERT SORBY

For further information about the products featured go to:

Robert Sorby

Web: www.robert-sorby.co.uk

Record Power

Web: www.recordpower.co.uk

Brimarc Tools & Machinery

Web: www.brimarc.com

Axminster Tools & Machinery

Web: www.axminster.co.uk

The Toolpost

Web: www.toolpost.co.uk

Next time...

I look at how to sharpen the basic turning tool set. ■

Issue 22 January 2017

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KITCHEN UNITS

James Hatter shows us how to fit new kitchen units

Kitchens get a pretty hard life, so it is not surprising that they can soon get tired looking.

There are many ways that a kitchen can be uplifted, including new decoration, and replacement door and drawer fronts. Existing doors and drawers can be painted with specialised paints for melamine-faced surfaces. Worktops can also be replaced. But if a completely new kitchen is preferred, together with

a change of layout, then hopefully this piece will help you. I want to look into installing new kitchen units.

Unpacking

Typically, new units are supplied as flat packs. Open up the box, and remove the contents including the instruction sheet. Check all items are present. The unit illustrated (*below centre*) is a drawer unit, so the runners

are installed prior to assembly of the item. Start by screwing in the posts that will be used to join the sides. There may also be dowels. Cam screws are positioned as required in the adjoining panels.

Assembly

The first step in the carcass assembly is to feed the panels over the posts. Tighten the cam screws that will grip



Do read and understand the instructions – it saves time!



Attach all fittings before assembly



Cam screws make for fast assembly



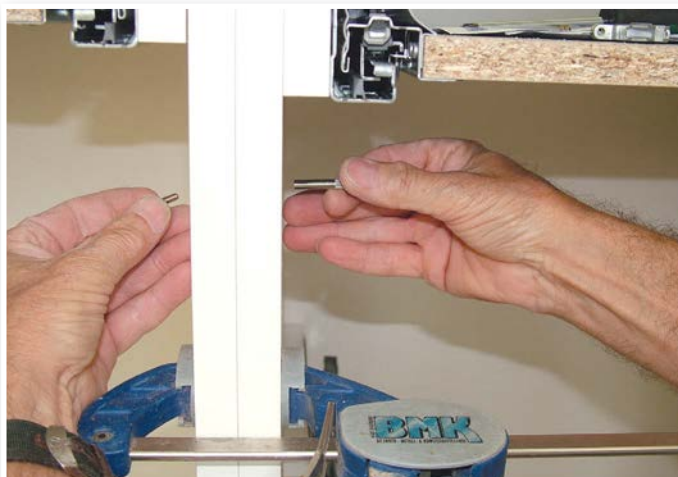
The back panel makes it strong



Take care when turning over so the feet stay on!



All units must be secured to the wall



Now tighten adjoining units together



A spirit level is essential for a good result

onto the posts, and pull the joint together. Slide the back panel into the rebates in the sides. Use the supplied screws to attach the back panel in place. Stand the carcass upside down and insert the supplied feet. Screw in each foot to the value given in the instructions, these will be finely adjusted later, when the unit is in position.

Installation

Start by placing the first unit in a

corner, then line up the next unit. Continue along the line. Check if you need to make any out-cuts for plumbing or electric socket access, or to overcome any obstructions. Use a spirit level to ensure the units are plumb and level.

Attach 'L' brackets to the top rear of the carcass units; mark the position for the wall attaching screw. Temporarily pull the units forward to drill the wall for a wall plug. Move the units back, ensuring they are still plumb and level.

The units are joined to each other with screw inserts. First clamp the sides together, then drill a hole through, feed the screw insert through and engage and tighten with the matching screw. It is advisable to ensure you have the correct space for any built-in units, by temporarily fitting them in place.

Further decoration

Further units are added including the wall mounted ones. Attach decorative end panels if these are included. ■

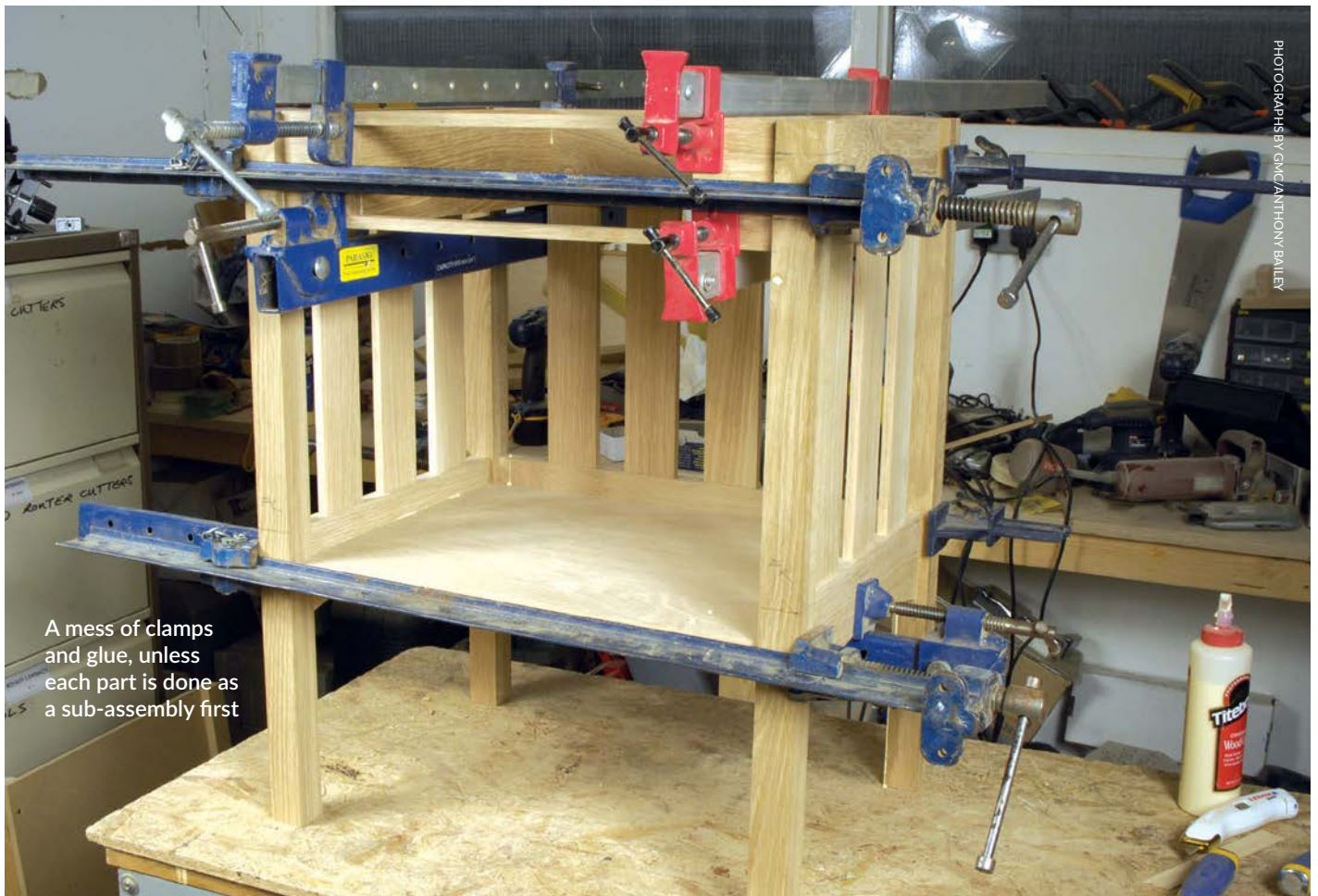


Check the fit of the appliances



You will need help to lift the wall cupboards up

Work smarter



How often do you wish there was a better way to do something?
In this brand new series we show you easier ways to get things done

Sub-assemblies

If you are trying to put a project together, you start with a design – maybe just a sketch – then make all the components, a dry assembly after that – hopefully you don't skip that all important step and finally glue up. That is the most stressful time of all especially if it is a complicated piece of work. It is the time to be left alone, unless you need another pair of hands with absolutely no interruptions. Unfortunately, with glue oozing out, an assortment of parts and a lack of enough clamps of the right size, it can all go horribly wrong.

So, let's go through the process to get it better. At the design stage, try and consider how your great project will finally go together. If it is possible make it so it goes together as several sub-assemblies. Granted this isn't always possible, but by modifying the design at the outset it may allow this to happen. Let's take, for instance, a table. If two legs, top skirt and a lower rail are jointed and glued together that is one side. Do the other side and you then have two sub-assemblies, which can be made nice and square and all surplus glue wiped away, ready for fitting the two remaining in-between skirt and rail sections the next day.



A dry assembly of the overall table minus various infill components to check it goes together properly



A neat method of making corner leg tenons using Domino components, but being in-line may cause sub-assembly problems



A test joint with mortises offset using split Dominos so they are easy to remove



The first sub-assembly, with stub mortises so glue cannot harden at the bottom of the unfilled mortises



Another sub-assembly, this is the lower shelf

The trick is to ensure the second lot of joints are either offset from the first ones, i.e. you don't have tenons meeting in the leg because glue would harden and ruin the sockets for the final assembly, or cut the final joints after the sub-assemblies have dried. Dowels are an example of a joint that can be done later so as long as you have an accurate jig to guide the drill. Likewise, a router could be used if the sub-assembly can be held precisely while machining. Of course, if you want to chop mortises by hand the second set can be done that way so long as the workpiece is properly supported. In other words, by all means prepare as many components to completion as possible, but maybe consider doing a secondary lot of joint cutting if it helps make subassemblies easier to do.

What you avoid is a kind of 3D mess of legs and rails, which have to be checked and corrected in all planes while applying and reapplying clamping pressure until all is square, and using a glue that promises to be 'quick setting' (and how often have we been there?) – only enough clamps to effectively hold part of an unwieldy 'scaffold' of components.

So next time you are planning a project, bear in mind how you could make it better, more satisfying and importantly – make it less stressful by employing the strategy of using subassemblies... ■

Next month... screws versus nails



The whole table minus the top. For a small project is has quite a complex set of joints

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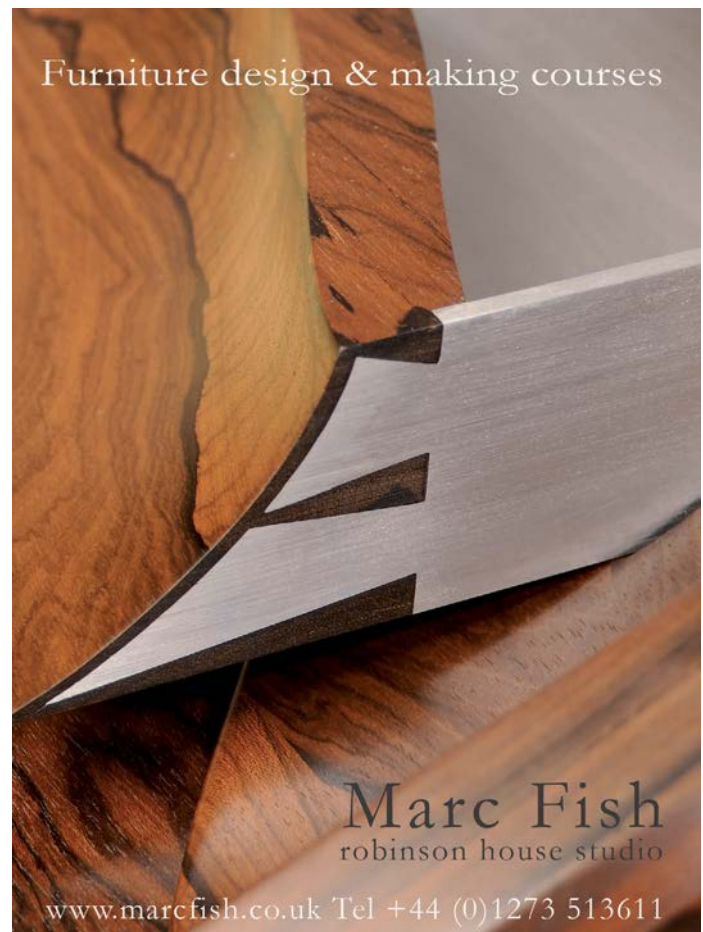
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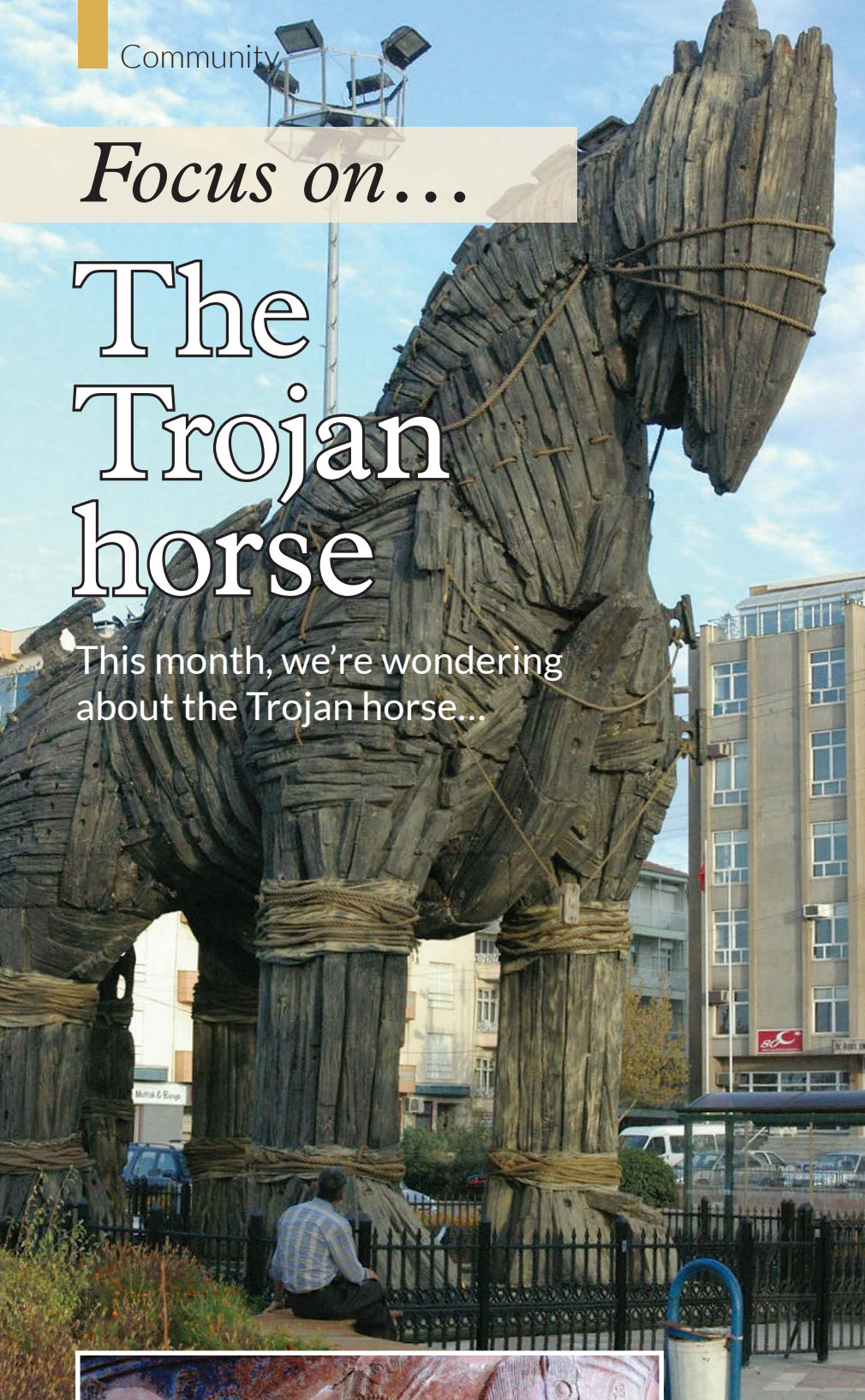
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Focus on...

The Trojan horse

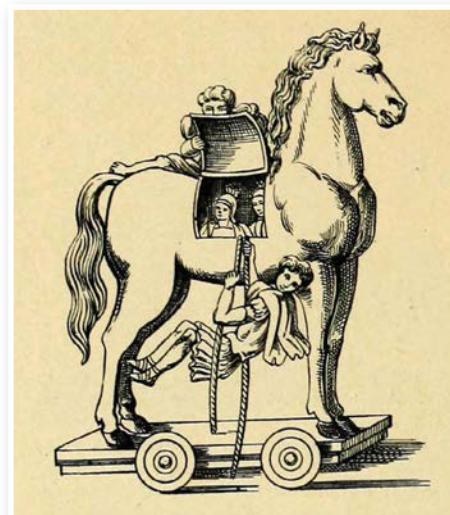
This month, we're wondering about the Trojan horse...



Main image:
A replica of the Trojan Horse, used in the film *Troy*

Top right:
Trojan horse after the Vergilius Vaticanus

Left:
The Mykonos vase, with one of the earliest known renditions of the Trojan horse



PHOTOGRAPHS COURTESY OF WIKIPEDIA COMMONS

A classic tale set in the Trojan war, a giant wooden horse built by the Greeks carried a number of their soldiers into the walls of the city of Troy. Upon nightfall, the Greeks climbed out, opened the gates to the city letting in the remaining Greek army, who then destroyed the city and ended a 10-year war. Since its first mention, the Trojan horse has become something of a legend, but what's the truth behind it?

The horse was first mentioned in Homer's *Odyssey* and is from the Latin epic poem, the *Aeneid* of Virgil. It was supposedly left as an offering to the goddess Athena, or most commonly it was thought to have been left as a victory gift to the Trojans, which they accepted. As a result of its first mention, the entire Trojan War is full of myth and it is difficult to ascertain how much of it actually happened. Modern historians have speculated the origin of the Trojan horse myth. But, was this concept actually a reality?

The most likely explanation to its existence is that the horse, was actually a battering ram used by the Greeks, which resembled a horse. It is also thought to have perhaps been a siege machine, often given animal names, or even suggested the gift was instead a boat carrying a peace envoy.

The most unusual, but least connected belief is that it was actually an earthquake which weakened the walls of Troy, of which the horse represents. This can be backed up with the simple fact that Poseidon was seen as the god of earthquakes, and a god of the horses.

It is unlikely that we will ever know the origin of the Trojan horse, but it will continue to fascinate us for generations to come. ■

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