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The Glastonbury chair

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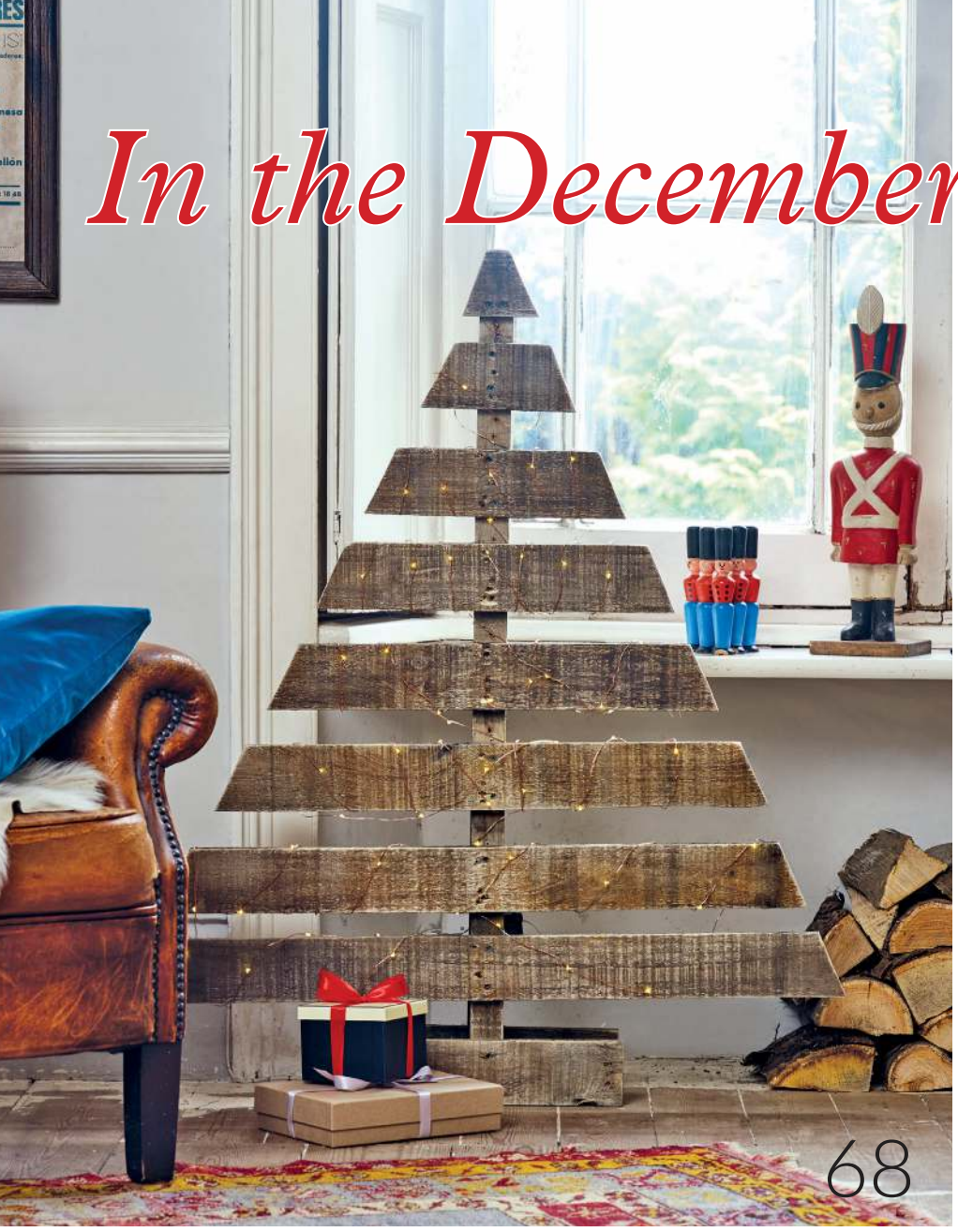

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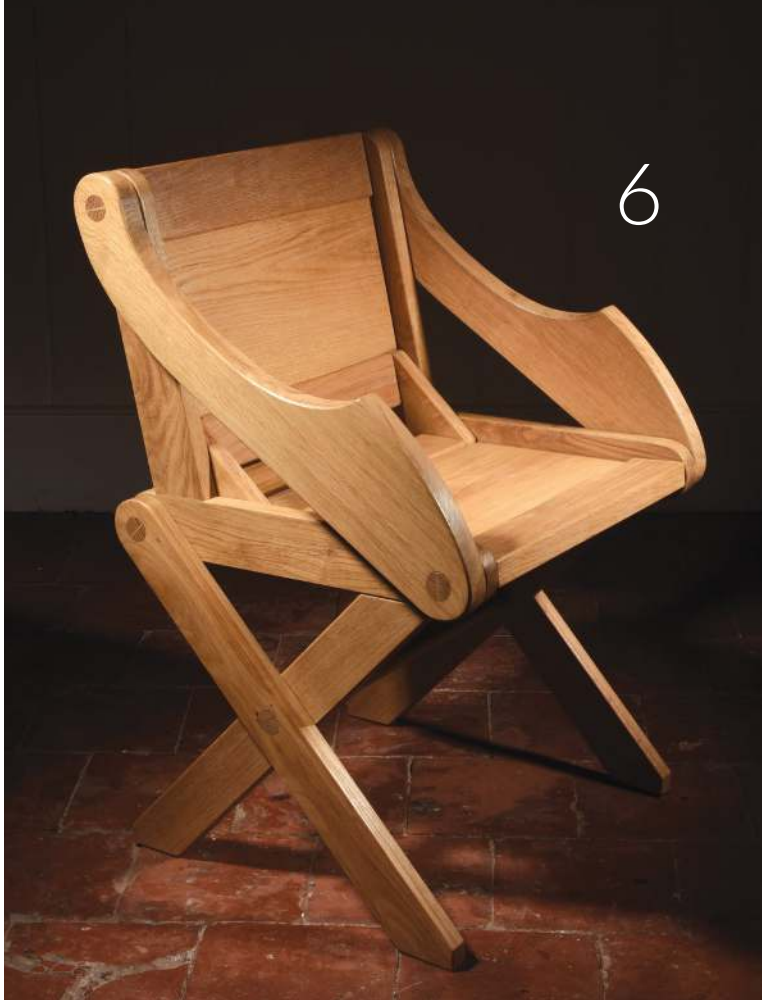


Hello everyone and welcome to the December issue of Woodworking Crafts

It's that time of year again. With 2018 drawing to a close and the festive break approaching we must get ready to welcome the new year in. 2018 seems to have galloped by – we had a blisteringly hot, lengthy summer, do you remember that? I vaguely do, a distant memory at best. Hopefully we are tucked up warm in our cosy nests when not out braving the usual assortment of chill, damp weather – and possibly snow.

Now is not the time to be brave and making things out in the workshop or wherever you practise your craft. So we have put together another interesting assortment of articles for you to read and hopefully put some of that fund of information to good use in the new year to come, once the weather improves and the days lengthen.

I've been particularly busy both making and restoring furniture. It's been good for the brain cells, certainly a lot of head scratching and calculations as well as creating or improving the very tools I work with. One thing that doesn't need a lot of space or resources and can be done on the kitchen table, is cleaning up and restoring the tools we normally use but don't take enough care with. They can end up looking careworn, but a bit of TLC and sharpening up your sharpening skills is a great winter evening hobby.

Well, the *Woodworking Crafts* team will be taking a well-earned break too – so on behalf of everyone here, I'd like to wish you all a very Happy Christmas and a prosperous New Year.

Anthony Bailey, Editor
Email: anthonyb@thegmcgroup.com

Jan Morgan – Designer

Simon Rodway – Illustrator

Jaq Bayles – Sub Editor

Karen Scott – Senior Editorial Assistant

Reimagining a medieval marvel

The **Editor**'s brave new design

Divine inspiration

I mentioned in my leader column in issue 46 that I was inspired by a visit to Chichester Cathedral to revisit a project which I built in my teens, a traditional Glastonbury chair. It's been a bit of a pilgrimage working out how I did it then and how I wanted it to be now. Even at a young age I didn't want to make it in the traditional way and I certainly didn't want to now. That created problems, unnecessarily so, but considering this is only the second prototype in a mere 46 years – the result isn't at all bad. The domestic vetting committee approved strongly. Daughter Lucy sagely commented 'it's kind of medieval with a modern twist' – that's just what I wanted to hear...

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

The origins of the Glastonbury chair

The term Glastonbury chair dates to the 19th century, based on an earlier design of chair made of oak, perhaps for the last Abbot of Glastonbury, Richard Whiting. The design has been known to have existed since the Middle Ages, later to reappear in Italy by the 15th century AD and its description brought back to England. Both the commissioner of the design, a monk named John Arthur Thorne, and the Abbott who sat on the chair during his trial at the time of the dissolution of the monasteries, met a ghastly end, perishing on Glastonbury Tor after being hung, drawn and quartered. Its Gothic design has been copied both at that time and more recently. It had been thought the chair which once belonged to Horace Walpole who lived in a Gothic pile in Strawberry Hill, Twickenham, was the original and then bought at auction by the vicar of Glastonbury in 1842, but it is now believed to be a copy. Both it and other chairs of the period can still be viewed at the Bishop's Palace, Wells in Somerset. It is not believed that this design of chair was particularly portable.

Design

I imposed several constraints on the design, of which I did as rough sketch to get me started. There are many copies and variants of the 'Glasto' chair, but two things I don't like because they look ugly are the ridiculously upswept arms, great for the praying position but not stylish. The other matter is the round tusk tenons that hold all the components together. Allegedly, this was done so the chair could be taken apart and transported so the holy eminence in question would always have his chair wherever he might travel. Think about it though – 10 small wedges plus spares and a mallet need to be kept safely in a pouch and the rather heavy components need careful lashing to a mule or two. If a horse and cart were available it could stay in one piece. I think it was more a case that tusk tenoning held the chair components together efficiently. I made a big, heavy refectory table for our kitchen years ago with a tusk-tenoned stretcher and that isn't going anywhere.

In my youthful original, made at age 18, I had fox-wedged mortise and tenons holding the back and seat side rails together. That is totally mad because, instead of all the components overlapping each other, there would be a leg in line with the seat side rail, meaning another type of joint would be needed. It just made construction awkward and I cannot remember how I resolved it. So, glutton for punishment, I decided to try making it like that all over again… ➤

Making a Glastonbury chair

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

If you like a challenge and want to make a chair that is more comfortable than it looks – read on

Basic preparation

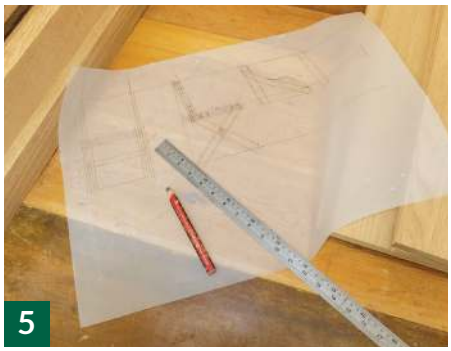
I had two big baulks of European oak waiting for something, but as this was a prototype design I didn't want to cut into them. Instead I used up pre-cut sections originally intended for a marquetry donkey requested by my daughter, Amber, plus various reclaimed boards of oak.

1 Some of the basic chunks of oak I had to work with. There was waste involved but still, oak burns well in the woodstove.

2 Some of my late father-in-law's old oak boards, cut up, minus the worm holes and run through the thicknesser like everything else.

3 One of the stretchers would need to be made from three boards glued together with Titebond Original. The other came from an old church fitment.

4 After thicknessing, the boards were squared on the tablesaw, then run through the thicknesser on edge, to final size.

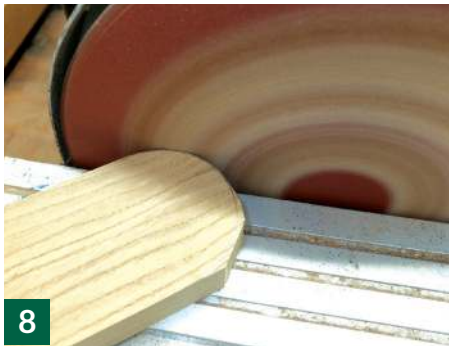


5 I was working from the most basic sketch with a scale rule to check sizes, plus information online about typical dimensions for this chair type.

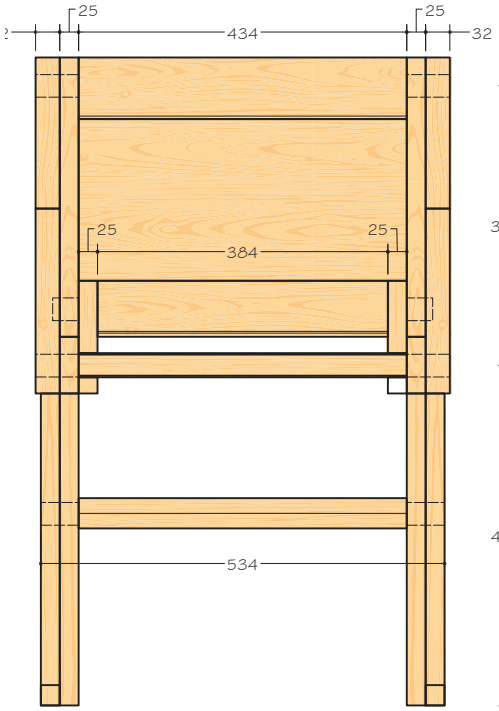
Side rails

6 Once the side rails were marked to length, the curved ends were created by drawing around a tin filled with brushes soaking in white spirit.

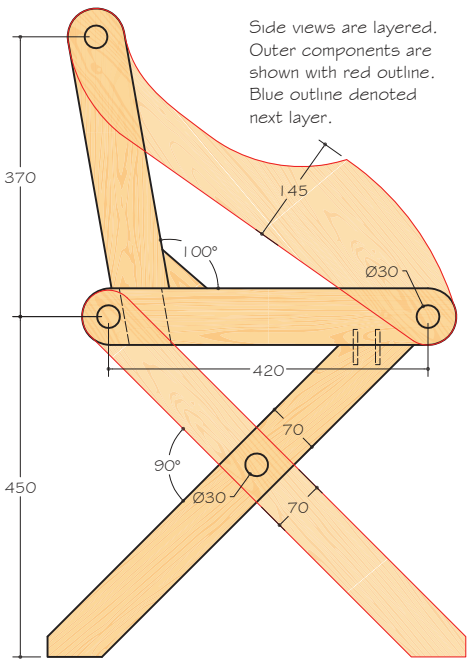
7 Next a close-ish cut on the bandsaw, this oak was mighty tough so I didn't want to wear out the abrasive on the disc sander too quickly.



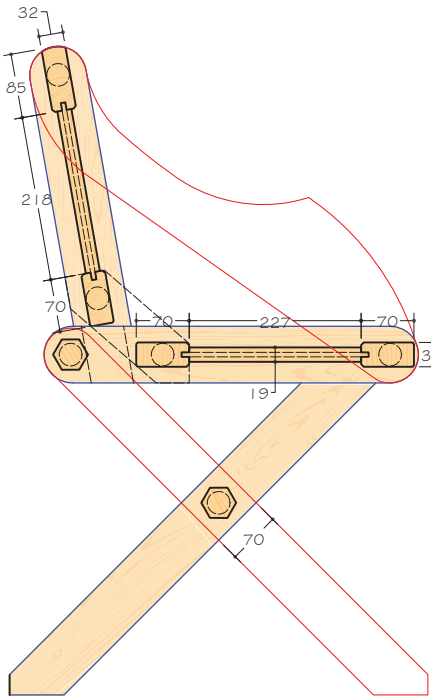
8 Nice even curves achieved very quickly with a fresh disc. ➤



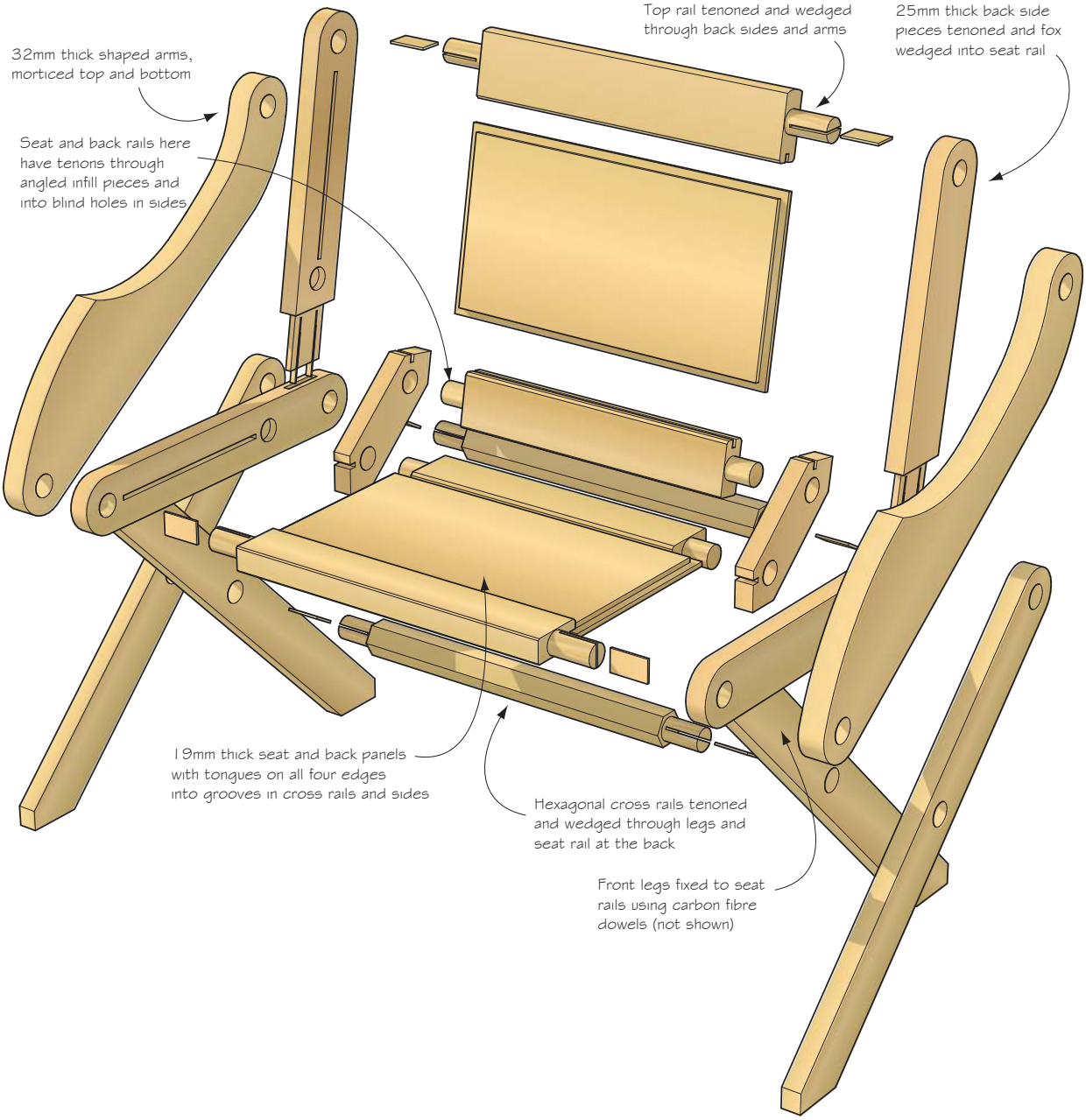
FRONT ELEVATION



SIDE ELEVATION



SECTION



9 The sides that hold the chair back needed to plug into the seat sides. I opted for a 10° rake on the back. The mortise and tenon would be angled to match.

10 The tenons were cut by hand to the correct size and angle. I did these before the mortises because these needed to be right. The mortises could always be opened out a bit.

11 To cut the shoulders the lines were knife marked and pared down with a chisel for the saw blade to sit neatly.

12 I tried using a mortise gauge to mark out the mortises but the grain of the oak was quite open and hard. It was easier with a pencil gauge. A 10mm 3D bit proved ideal for taking out the bulk of the waste. It had to stop short at one end where the mortise was angled inwards.

13 Narrow and wide chisels were used to chop the mortise perpendicular at the sides and angled at each end to account for the fox wedging that would spread the tenon in a dovetail shape.

14 A dry test fit. Note the confusion of drawn lines – at least I know what they mean.

15 Returning to the round ends, the tenon holes were cut with a 30mm Forstner bit, the second one is only there to be surface marked as the bit breaks through, so each pair will match.

16 Now the panel grooves were done with a 6.4mm straight cutter, stopping short of the tenon holes – should that be mortise? I suppose so.

17 The tenons were kerfed on the bandsaw and slim wedges that are no longer than the tenons cut and tried in place. A gap for glue and wedges at the bottom of each mortise should ensure the joint closes fully. Well, hopefully….

18 A nervous moment – would the joints actually close and lock tight? If they didn't I would be making new components all over again.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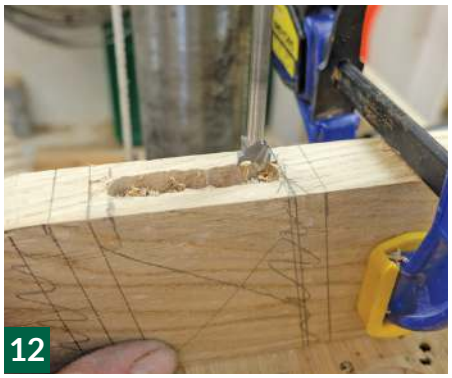
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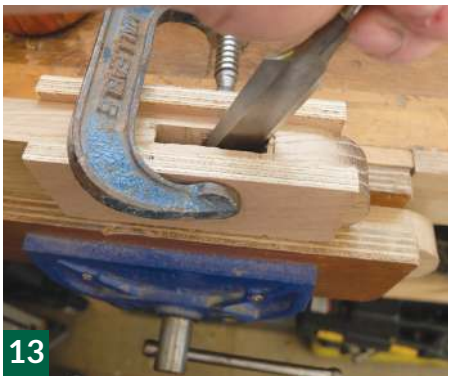
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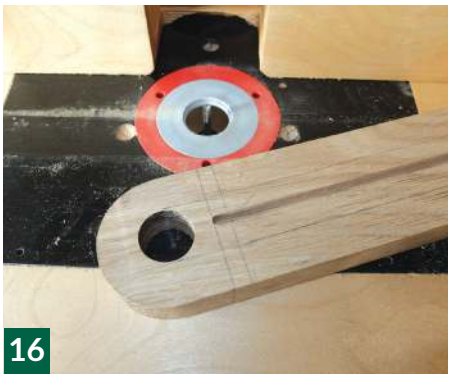
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19 Phew! A tight fit and they match angles with each other.

20 Look at the two lines on the front component. I slotted to the first line by mistake. No worry, I used a rail as a packer behind as the seat side projects, and just extended the slot – simples.

21 The sides of the chair seat and back have a very small 2mm-wide bevel done using a Dewalt trim router and bearing-guided bevel cutter. All components in this project have bevelled arrises.

22 I hate routed, rounded corners – they look cheap and not 'trad' at all, so I applied a 'mason's mitre' cut to the internal corners (check out Victorian stonework around windows to see how the bevelled surface runs over the adjoining stone block to understand the term).

Seat and back rails

23 The cutting gauge wasn't faring much better than a marking gauge due to the coarse, hard grain of the oak.

24 Cutting the tenon for the wider top back rail. If I had a lathe it would be possible to cut the tenons on there after bandsawing out. If you do try that, don't get 'batted' by the flat section spinning round – watch the shadow as it is turning fast.

25 The mitre gauge used to cut the shoulders prior to shaping.

26 The stock was 32mm thick so a big Wealden tenoning cutter reduced the thickness of the tenon to match the bandsawn cuts, leaving it 30mm square.

27 My fiendish trick was to use a large bead cutter to remove most of the waste – without accidentally cutting into the tenon shoulders.

28 A fine-tooth Japanese pullsaw was used to get rid of the 'neck' left behind.

29 A coarse rasp made quick work of creating a nice, round shape which was checked by inserting in a 30mm hole. A loose fit would not be a problem as it would finally be wedged in place. ➤


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30 Each rail needed a panel slot. This was done with a light pre-scoring cut to prevent breakout caused by too deep a pass.

31 The completed rail with a 10mm deep panel slot.

32 The tenon kerfed so the slot would lie across the grain of the component it would be wedged into, thus preventing a split occurring.

33 Cleaning up around a tenon base for a tight fit.

Infill pieces

34 Hands up. I made an early error of choosing too narrow a seat width. Although correct, for larger people today it would be a tight fit. I had already cut two rails short, so I needed a creative solution, being a block at each side to fill the gaps.

35 The start of the block, marking out rail and tenon centres. I once worked for a furniture designer who used to say 'always highlight a fault', which was exactly what I was doing. I gathered he had plenty of experience…

36 Impossible to exactly locate where the blind mortises were. No problem, I just enlarged the holes slightly as they wouldn't be seen.

37 All shaped and sanded ready for a fit. As each set of components was finished they were sanded using Mirka 120 mesh Abranet attached to its funky new little Deos sander with its variable-speed paddle switch.

Panels

38 Dry fit of the upper components to make sure they went together well and to work out the panel sizes.

39 The 19mm panels were given a 6.4mm-thick tongue, 9mm long and centred on the board. However, this tongue length was worked up to, in several passes in case the panels might be too loose a fit.

40 Checking the fit between the clamped up arms. It fitted nicely.

41 The tiny bevel was added using a No.4 smoothing plane as a router bevel cutter would catch on the tongue.


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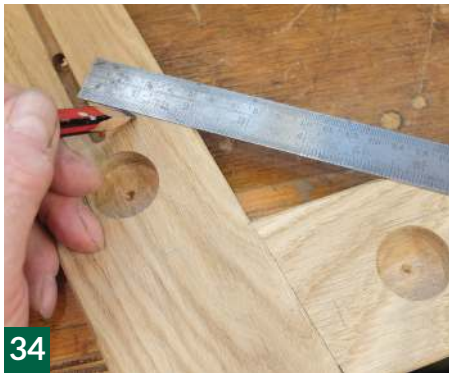
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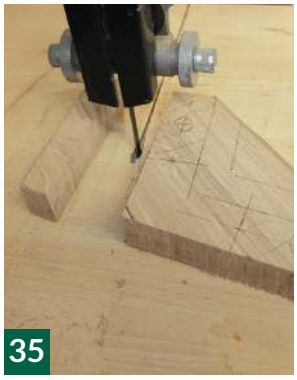
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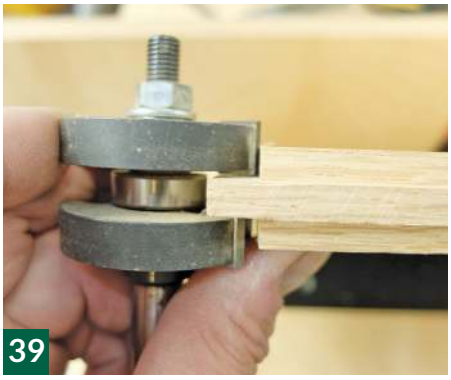
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Arms

42 The arm shape was critical to the design. I transferred key points from my sketch as a starting point and used a nail gun to create pivots for a steel rule to be bent against.

43 This swept curve was the most punishing for my steel rule, which I'm glad to say it has recovered from.

44 The template design showing the seat side rail projecting to the rear, which avoids the fixed mortise and tenon.

45 The edges were rasped and sanded to an even curve and finish after bandsawing.

46 Now the oak could be roughly split to a width and, turned on edge, would go under the bandsaw guides.

47 Using a pencil gauge to mark over width for freehanding through the bandsaw.

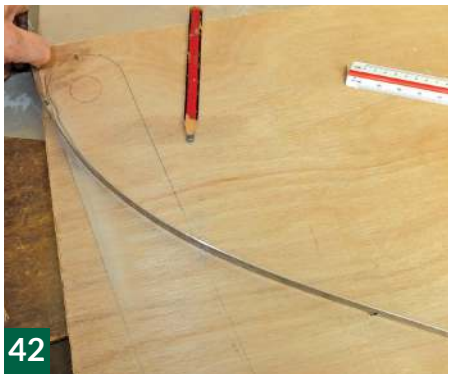
48 Cutting down saved weight and wood, and created usable offcuts.

49 A simple case of thicknessing to 32mm using the sawmill's sawn face as the starting datum as it was flatter than the bandsawn faces.

50 The template being marked around for the first arm piece.

51 Many relief cuts so the blade could escape easily when going around the tight internal curve.

52 Using an 18 gauge nailer to pin the template in place for profile routing. ➤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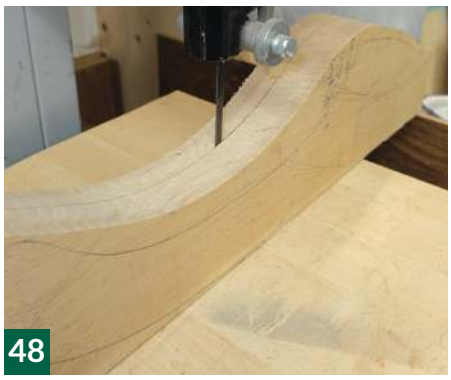
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53 Running against a bottom bearing-guided straight cutter. Note the lead-in pin for safe cut starting.

54 Prising the template off ready to machine the other arm.

55 Finally a bevel 3.5mm wide on all the arm edges for looks and comfort.

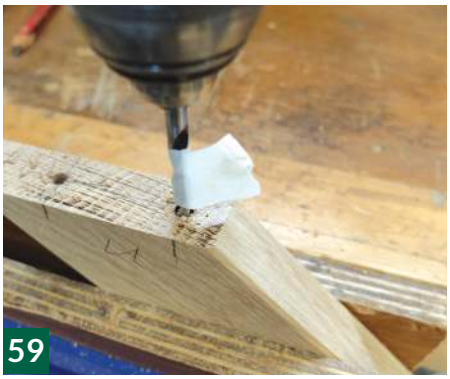
Legs

56 The legs involved the same shaping procedure as the seat side, except both feet needed to be cut at 45° at the bottom end to sit on the floor. Then there was the tricky matter of the front leg joint, seen here marking where it would meet the seat side rail.

57 Two rear legs on the left, two front legs on the right with assumed butt-jointed ends. Note the bottom ends of the legs are nipped off vertically.

58 Using a trial assembly after cutting the front legs to mark where they sit on the seat side rail.

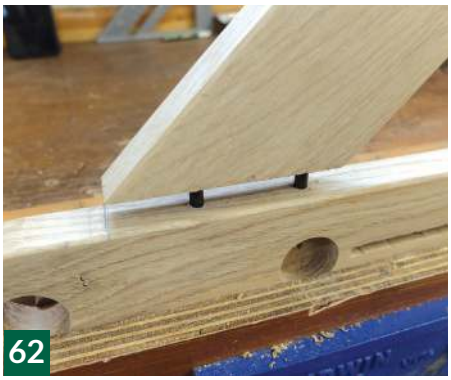
59 These look like very small 6mm-dia. dowel holes, considering the huge downward force on the joints. The end grain was drilled first as the drill bit can wander in end grain.



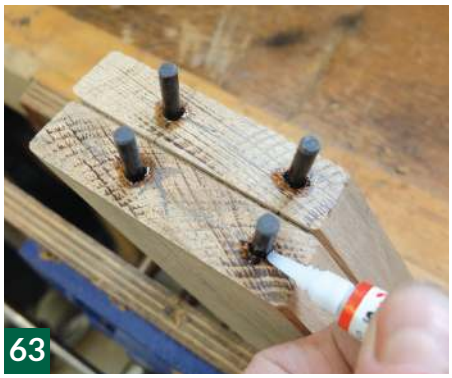
60 Using copper dowel spikes to mark the receiving positions.

61 No panic, I've chosen to be high-tech and use carbon fibre rod in the holes – massively strong but easy to trim.

62 A test fit is just fine. I'm hopeful it will work out.



63 CA glue used to set the dowels in place as they won't absorb water-based wood glues.

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Stretchers

64 Square stock for the stretchers being bevel cut on the tablesaw before feeding through the thicknesser to create an even, smooth, octagon profile.

65 Cutting the tenons, running up to an end stop.

66 Shouldering each tenon before shaping with a rasp as before and making kerfs for wedges.


67

Assembly

67 Quite literally knocking the upper assembly into shape. Very much a kit of parts.

68 Now for Titebond glue and slim wedges tapped home until there is a solid sound, then wipe away all surplus glue.


68

69 It's done…at last.


69

70 Trimming the tenons off flush prior to sanding.

71 Drilling and tapping in a 6mm dowel underneath will lock the joint together.


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Finishing

72 Using a water-based varnish to seal the oak and prevent it getting grubby.

73 Mirlon webbing abrasive for final flattening before applying a clear hardening wax. ■


72


73

Although this design would suit a stylish domestic setting, the vicar of our local church has agreed that its resting place should be in the church itself.

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8/510	2HP	7.5	50ltr	£119.98	£143.98
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16/510*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke 4" BELT/ 8" DISC SANDER

- Includes two tables • 550W 230V motor

£159.98 EXC.VAT £191.98 INC.VAT

CS4-8

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

CDE7B

CWVE1

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

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

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

Clarke MORTISING MACHINE

£174.99 EXC.VAT £209.99 INC.VAT

CBM1B

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

CHISELS AVAILABLE FROM £8.39 INC VAT

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

Einhell BISCUIT JOINTER

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

2 YEAR GUARANTEE

£54.99 EXC.VAT £65.99 INC.VAT

TC-BJ900

Clarke HARDWOOD WORKBENCH

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

CHB1500

£149.98 EXC.VAT £179.98 INC.VAT

Clarke BELT SANDERS

- Ideal for surface removal, sanding and finishing

Makita

BS1

ABRASIVE SANDING BELTS IN STOCK

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

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

Clarke DETAIL SANDERS

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

CDS-1V

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

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

ALL MODELS INC. SANDING SHEETS

Clarke DISC SANDER (305MM)

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

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

CBS1-5B

Clarke RANDOM ORBITAL SANDER

- Adjustable front handle improves control • 7000-14000rpm

£32.99 EXC.VAT £39.59 INC.VAT

CROS3

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

Clarke ELECTRIC POWER FILE

CPF13

- Variable belt speed • Tilting head

*Black & Decker

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

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

Clarke CIRCULAR SAWS

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

CON185

*Includes laser guide

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

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC.VAT	INC.VAT
CCS185B	1200W	65/44	£41.99	£50.39
CCS2	1300W	60/45	£59.98	£71.98
CON185*	1600W	60/40	£62.99	£75.59

VAC KING WET & DRY VACUUM CLEANERS

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

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* SS = Stainless Steel

MODEL	MOTOR	CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC25SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR*	1400W	24/21ltr	£89.98	£107.98

Clarke SHEET SANDERS

- Ergonomic design for optimum comfort

*was £39.59 inc.VAT

CON300

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

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

Clarke CORDLESS STAPLE/ NAIL GUN

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

ONLY £109.98 EXC.VAT £131.98 INC.VAT

CONSN18LIC

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

Clarke CONTRACTOR 18V BRUSHLESS COMBI DRILLS

- 2 forward and reverse gears

powered by Li-ion

CON180LI

FROM ONLY £109.98 EXC.VAT £131.92 INC.VAT

*was £203.98 inc. VAT

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

Clarke OSCILLATING BOBBIN SANDER

COBS1

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

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

Clarke BOLTLESS SHELVING/BENCHES

- Simple fast assembly in minutes using only a hammer

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CHOICE OF 5 COLOURS RED, BLUE, GREY, SILVER & GALVANISED STEEL

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

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

CWS200B

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Clarke PLANERS & THICKNESSERS

CPT800

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

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

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

Clarke OSCILLATING BELT & BOBBIN SANDER

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

£179.98 EXC.VAT £215.98 INC.VAT

COEBS1

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BEST SELLER

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

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CMS10S2

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

Clarke MITRE SAWS

CMS210

Einhell

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

Laser Guide ‡ Sliding Compound

- Quality Range of Mitre saws and blades in stock

* was £71.98 inc.VAT

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

Clarke DRILL PRESSES

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

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

CDP152B

B = Bench mounted F = Floor standing

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

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- 250W motor
- Variable speed

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CMFT250

Clarke ELECTRIC HEATERS

BEST SELLER

DEVIL 7003

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

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

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating

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

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

PROPANE GAS FIRED

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

Clarke DIESEL/PARAFFIN HEATERS

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

Ideal for fast efficient heating

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

XR80

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

Clarke CONTRACTOR Clarke JIGSAWS

BEST SELLER

CON750 *DIY #Professional

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

Clarke SCROLL SAWS

CSS400C

BEST SELLER

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

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

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

Clarke BENCH BANDSAWS

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

£129.98 EXC.VAT £155.98 INC.VAT

CBS190B

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

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

REMOVABLE DUST TRAY

CBS225

Clarke STATIC PHASE CONVERTERS

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

ROTARY PHASE CONVERTERS ALSO IN STOCK

PC60

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

CONVERT 230V 1PH TO 400V 3PH

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

Clarke 12" DOVETAIL JIG

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

£57.99 EXC.VAT £69.59 INC.VAT

CDTJ12

FROM ONLY £219.98 EXC.VAT £263.98 INC.VAT

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

MODELS ALSO FEATURE:

MULTI-STEP DUST EXTRACTION OUTLET

FLEXIBLE LED WORKLIGHT

REMOVABLE DUST TRAY

BLADE TENSIONING CONTROL

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

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

Clarke CONTRACTOR ROUTERS

BOSCH

- Powerful heavy duty machines ideal for trade and DIY use

CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

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

CR1200

NEW

*DIY

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

Clarke ROUTER TABLE

CRT-1

Router not included

BEST SELLER

£69.98 EX.VAT £83.98 INC.VAT

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

Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

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

STANDS FROM ONLY £47.98 INC.VAT

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

With sanding belt *8" whetstone & 6" drystone

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

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PHOTOGRAPHS BY MICHAEL T COLLINS

Maple camper box

Michael T Collins creates on the move storage

Cutting list

- 2 pieces of ply for left and right sides
- 2 pieces of ply for the back and front
- 2 pieces of ply for the top and bottom
- 1 additional bottom insert piece

Supplies

- 4 of 25mm rubber fixed wheels
- 1 of 60cm piano hinge
- 1 short length of sturdy leather

A couple of weeks ago, a friend called to say she wanted a simple, no-frills box made for her teardrop camper, and would be round to talk details. A couple of hours later Louise appeared with trailer in tow.

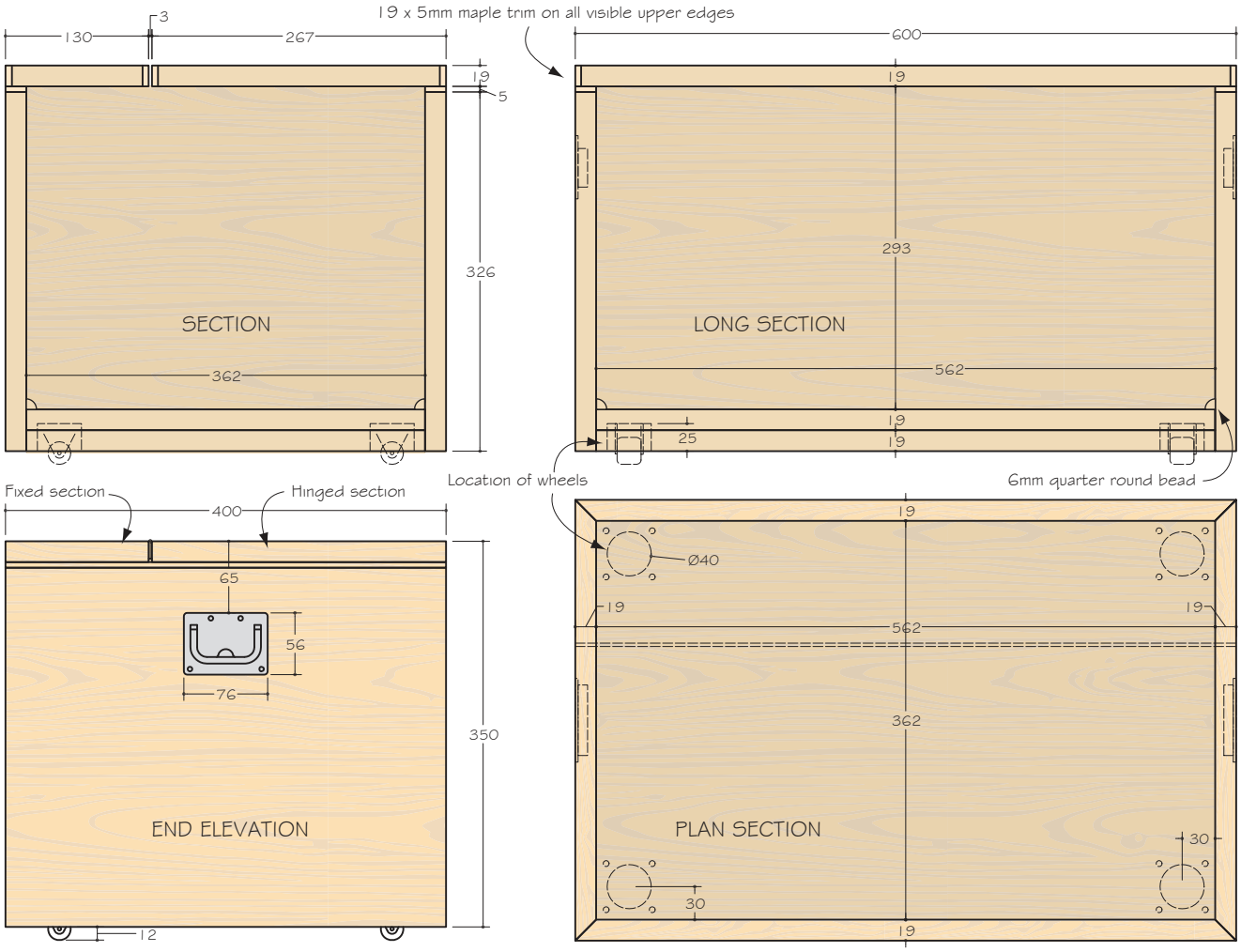
The box was going to be for storing clothes and had to fit within the under-shelf area, be easy to slide in and out and have a lid.

Since the entire inside of the trailer is beautiful maple plywood, I decided to use 19mm furniture-grade ply. When cutting ply on a tablesaw it is important to have the face side facing up and use a zero-clearance insert. To lessen the tear-out effect, score the saw line.

1

1 Next all the mitres were cut – there was no need to add any additional mechanical holding as the ply had enough long-grain glue surfaces. However, if in doubt, you can use biscuits or splines. It was carefully cleaned up, including the edges that needed it and I applied glue to all mitres and then put the box together around a base that had previously been cut to size. I used a cheap piece of 19mm ply as it was unlikely to be seen. **Note:** when cutting mitres, it is always safer to use a sled. Never try to do this against the fence.

2 I applied clamping pressure and checked for square, allowing the glue to dry. While the glue was drying, I cut a second piece of the furniture-



grade ply for the inside bottom, glued and dropped into place.

Four holes were drilled in the corners of the base – these would house the wheels.

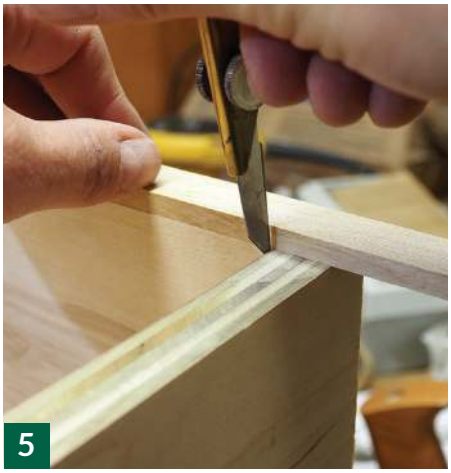
3 Once the glue was dry, any irregularities were planed flush from the outside in.

The wheels

4 The wheels were inserted into the holes created by the inner bottom as these would take all the weight. I decided it would be prudent to add countersunk screws around the wheel holes. The wheels were screwed in place, protruding approximately 12mm below the box.

Finishing off the base of the chest

5 All upper edges of the chest were trimmed with 19mm x 5mm solid maple – this was primarily to hide the ugly visible ply edge, and secondarily it provided a more robust edge. The pieces were cut and mitred. As the box had already been made, the trim needed to be flush with the inside of the box, as planing would be difficult. ➤



6 The trim was glued into place and secured with tape. There was enough long-grain surface so I wouldn't need to use any nails or screws.

Ideally I would have trimmed the ply before cut and assembly, but when I started making the box, the maximum height was not yet known and I had a hard time finding wheels with a low profile. This way, once the maximum height was known, I cut the base to the required height on the tablesaw.

7 I planed the edging flush with the sides. I always do this by planing from the lower surface (the sides) over the trim – this way the result will be flat and the plane less likely to cut into the side. **Note:** an alternative is to use a flush-trim router, but in my opinion it is quicker and more satisfying to use a block plane.

Making the lid

Owing to the location of the chest in the teardrop a full-size hinged top was not possible, so the top was divided into one-third fixed and two-thirds hinged. This would allow the chest to be rolled out a little way and the lid would have space above to lean back slightly without hitting the overhang.

8 The two parts of the lid were cut to size and the visible edges given the same treatment as the sides.

9 I glued the fixed lid section into place.

10 While the glue was drying, I temporarily installed the piano hinge, making sure of alignment and that the knuckle of the hinge was just flush, or slightly below the top of the lid.

11 I gave all surfaces a light sanding with 180 followed by 220 grit. I had to be careful sanding as some ply surfaces are only paper-thin veneer.

12 To protect the surface I gave the whole chest a coat of amber shellac to match the interior of the teardrop trailer.

Handles

The client wanted rope handles, but this would have increased the external space taken up by the chest and limited the internal space with ugly rope knots. Instead, I opted for flush handles. This is not the first time I have given myself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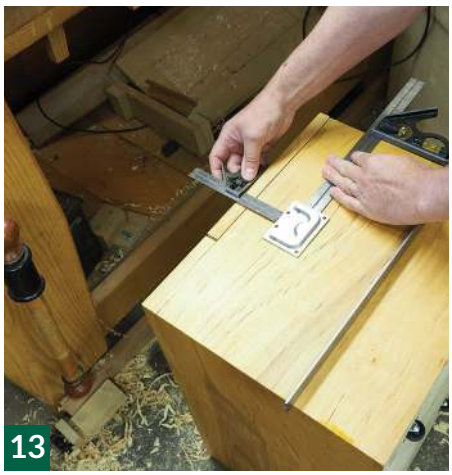
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more work for a client and probably won't be the last.

13-15 First I positioned the handles in the desired location. Then, deeply scoring the location, I created a profile of the back side of the hinge.

16 I transferred the profile to the chest, making sure to flip the drawing in case there are any anomalies in the shape.

17 With a palm router, in a couple of passes I removed all the waste to the deepest area, making sure to avoid a 5mm buffer zone around the edge of the handle's flange. I raised the router enough to remove all the waste to the thickness of the flange, paying particular attention to stay within the scored lines.

18 Any remaining waste along the score line was removed with a chisel first…

19 … then with a router plane. Because one of the hinges had some unevenness, I had to test-fit the hinge a couple of times, paring away additional waste to get it to seat firmly. **Note:** a simple technique to see what areas need to be removed, is to simply rub the back of the handle with a pencil and push firmly into the cavity – the pencil will be deposited on the high spots.

Finishing up

20 Just to finish off the inside bottom corners of the chest, I pin-nailed a 6mm, quarter-round bead, mitring into the corners.

21 The box was given a final sanding all over with 320 grit and a final couple of coats of amber shellac.

22 The handles were secured in place.

23 A leather strap was positioned to stop the lid going too far back on itself.

24 The chest was delivered to the client who was delighted and drove off a 'very happy camper'. ■


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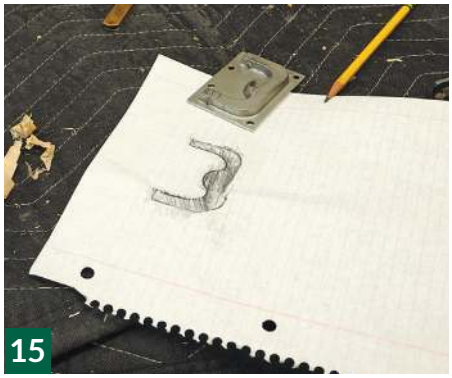
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Hand planes

Mouthwatering treats for tool junkies don't come cheap, but buy one of these beauties and it's a hand plane for life

The No.5 Jack plane is the staple tool for any bench work, be it cabinetmaking or joinery. It is light enough yet long enough to tackle most tasks you can ask of it. All the planes shown here have features that make them interesting choices which are not just down to price. The Clifton, for instance, goes against the grain by being massively heavy and both it and the Lie-Nielsen have high manufacturing production values. On the other hand the Quangsheng, Rider and Wood River are economically priced while still turned out to a much better standard than a cheap DIY-type No.5 plane. Subtle differences between all these featured planes, such as blade alloy and heat treatment and good quality wooden handles show a high degree of care in the manufacturing process.

Lie-Nielsen

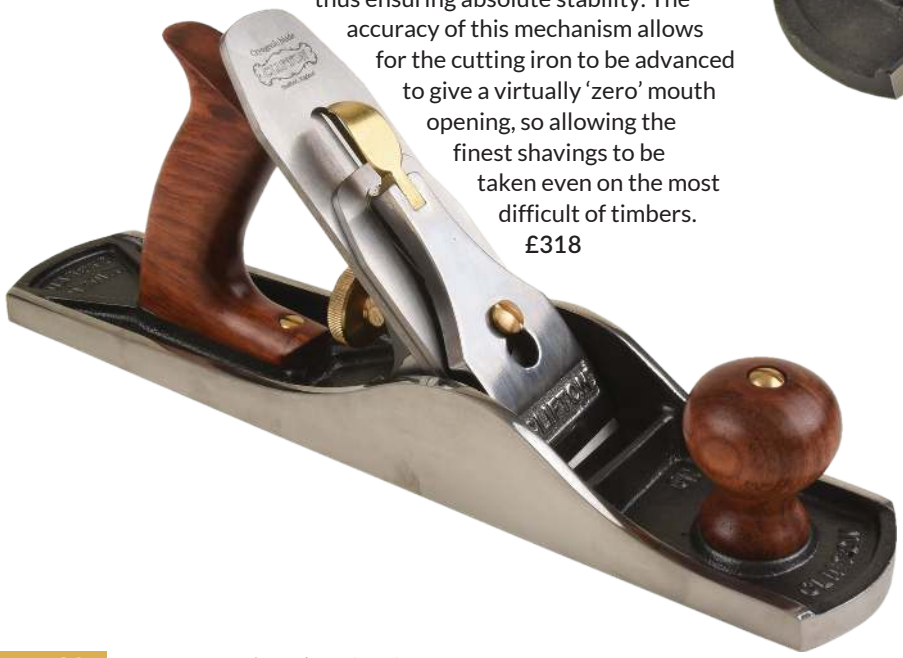
The standard bench planes are based on the Stanley Bedrock design, last produced in 1943. They feature a fully machined mating fit between the frog and body, and the ability to adjust the mouth opening from the rear without removing the cap and blade. Lie-Nielsen bench planes include these features and a spinwheel blade adjuster. The optional high angle frog converts the blade angle from 45° to 50° (York Pitch) and 55° (Middle Pitch). This makes smoothing in difficult woods easier.

£322.96

Clifton

The body and frog are made from accurately machined grey cast iron with their sides and sole fully ground. The knob and handle are bubinga hardwood. The cutting iron is made from cryogenically treated 01 steel, hardened and tempered to 60-62 Rockwell C, the precision ground blade is 0.120in thick (3mm). The frog and frog seating in the body of these planes are based on the Bedrock design, first seen on early Stanley planes, meaning the seating pad in the bode is full face, fully machined to mate with the underside of the frog, thus ensuring absolute stability. The accuracy of this mechanism allows for the cutting iron to be advanced to give a virtually 'zero' mouth opening, so allowing the finest shavings to be taken even on the most difficult of timbers.

£318



Rider

When the machining process has been completed, all Axminster Rider planes will have soles ground to 0.04mm or ± 1.6 thou tolerance. The bench planes have oil-finished selected hardwood handles from a sustainably managed source. The cap iron and other quality fittings on the planes are solid brass, an ideal material for moving parts. The most important feature of all Axminster Rider planes is the blade. The bench plane blades are finished to a minimum of 2.8mm thick, surface-ground on the reverse to ensure flatness. Each blade is oil quenched, high carbon spring steel, hardened and tempered to HRC 63.

£105.50

Quangsheng

Made to British Standards, Quangsheng planes offer outstanding quality and value for money. Now recommended by several of Britain's top cabinetmaking instructors, Quangsheng planes are precision ground to better than +/-1.5 thou tolerance and fitted with superb water-hardened T10 carbon steel cutting irons hardened to RC63. Quangsheng planes use the Bedrock design, which provides maximum stability and support for the cutting iron. It also allows the frog to be adjusted with the irons in place. Every Quangsheng plane is warranted against material and manufacturing defects for the rest of the customer's life.

£149.50

Wood River

Wood River bench hand planes are based on the reliable Bedrock design and feature heavy, stress-relieved ductile iron castings, fully machined adjustable frogs and T10 blades. Wood River has changed the shape of the rear handle and increased the diameter of the blade adjustment wheel to make advancing the blade a bit easier. It has improved the lateral adjustment lever and added a traditional style bearing for better control of the blade and made numerous changes to the castings that result in better 'feedback' and a solid feel to the user.

£149.95

We would like to thank the following tool suppliers for participating in this feature. Please do visit all their websites or premises to discover more about the featured hand planes and many other premium quality hand tools.

www.flinn-garlick-saws.co.uk
www.workshopheaven.com
www.classichandtools.com
https://woodworkersworkshop.co.uk
www.axminster.co.uk

Meet the contributors...

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

Michael T Collins

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

Peter Benson

Peter has been carving since he was 11, making planes with his pocket knife. He became a PE teacher before teaching children with special educational needs. Since retiring, Peter has set up the Essex School of Woodcarving in his studio home, tailoring his courses to the requirements of the individual.

Nigel Neill

Nigel lives in Northern Ireland. He has an NVQ Level 3 in Wood Occupations and has been a site joiner for 16 years. He runs his own business, mainly undertaking second-fix joinery and other aspects of the trade. He has experience of coach building and light engineering work and in his free time enjoys undertaking projects ranging from scroll work to bespoke furnishings.

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.

Louise Biggs

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

Benjamin Beddows

Ben has always had an interest in art. It wasn't until he started working at the skill centre in Axminster that his passion for woodwork began. Pyrography, scrollsawing and woodturning are a few of the subjects he tutors, although it is watching the students learn and create pieces to be proud of that he finds most satisfying.
Web: **www.facebook.com/BenjaminBeddowsPyrography**

Gareth Irwin

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

Simon Rodway

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

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

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Bushcraft skills

Tying knots

Knowing how to tie a range of basic knots is a really useful bushcraft skill that will help you in all manner of tasks, from assembling a shelter to making an emergency stretcher. Here we explain how to do some of the most useful knots ➤

GLOSSARY OF KNOT TERMS

Bight A bight of rope refers to a bend in the rope.

Quick release A quick-release knot is where a bight of rope has been pulled through while tying the knot. This is a safety feature that allows the knot to be untied quickly.

Frapping turn If you make a lashing, a frapping turn can be used to make it tight. You wrap the rope around and around and then pull the rope tight before tying off.

Hitch Attaches a rope to something. There are different types but the most commonly used is a double half hitch.

Loop A loop is made when a rope forms a partial circle with the ends crossing each other.

Working end The end of the rope you are using to tie the knot.

Standing end The end of the rope that stays still while tying the knot.

Clove hitch

The clove hitch is useful for starting or finishing a lashing such as a square lashing.

1 Pass the end of the rope around the pole.

2 Cross over the standing end.

3 Loop it back around the pole.

4 Thread it back under itself and pull tight.

Double half hitch

More secure than a single hitch, this is mainly used for finishing and tying off.

1 Form a loop around your object with the rope.

2 Pass the working end up through the loop.

3 Pull the working end tight against the object. Take the working end under the standing rope and pass it back through the loop.

4 Pull the knot tight.

Timber hitch

The timber hitch knot is great for pulling a log or a stack of sticks. This knot locks when you apply pressure by pulling an object, but practically falls apart when you release the rope.

Tip

The timber hitch is especially good for putting up a tarpaulin shelter or hammock. You can attach one side to a tree and know that it is secure. It is particularly good as it is self-tightening and easy to undo.

1 Pass the rope around the log.

2 Pass the working end over the standing end (the non-moving piece).

3 Bring the working end up on the log.

4 Loop the working end around itself once.

5 Loop the working end around itself once more.

6 Then a third time. The friction of the knot will hold it tight.

Slippery guyline knot

This knot is great for securing tarps and is adjustable under load. It can be undone under load, too. It is also known as a taut line.

1 Bring the rope from your object (tarp) down around your peg to form a loop.

2 Pass the working end through the loop and around the tight line.

3 Repeat Step 2 twice. You will have three turns around the rope.

4 Pass the working end behind the ropes, leaving a bight of rope.

5 Form a new bight of rope with the working end and pass it through the first bight to form the quick release.

6 Tighten your knot and slide it upwards to tighten and downwards to release the pressure. ➤

Canadian jam knot

This knot is useful for wrapping up and tying down sleeping bags and big loads, and uses little rope. It is also known as an arbor knot.

1 Form a loop in the rope.

2 Pass the working end behind and through the loop to form an overhand knot.

3 Follow Steps 1 and 2 to tie a second overhand knot next to the first.

4 Pass the standing end of the rope around your object and through the first overhand knot.

5 Pull the knots tight against your object.

Square lashing

This knot is used to secure poles into a rectangle that can be used for a raft, tabletop and many other bushcraft items.

1 Start by tying a clove hitch on the pole underneath, next to where the two poles form a cross.

2 Wrap the working end over and under the poles, alternating either side of the pole underneath. Do this three times, pulling tight as you go.

3 When the wrapping has been done, bring the working end back around between the two logs and wrap three times round, pulling tight as you go. This is called a frapping turn.

4 With the working end, tie another clove hitch to finish.

Sledge knot

The sledge knot is a great alternative to tying a square lashing as it uses far less rope and is just as strong. Unlike the square lashing, it cannot be undone.

1 Wrap the rope twice around the pieces you want to bind together.

2 Cross the rope over the standing end to form a cross.

3 Form a loop over the standing rope.

4 Wrap the working end around both ropes three times.

5 Bring the working end up between the ropes. Tuck it under the first and second wraps.

6 Bring the working end down through the loop and tighten. Slide up to the poles and pull tight. ■

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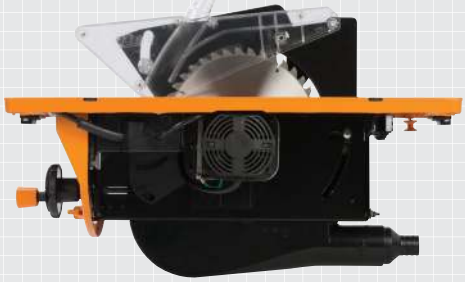
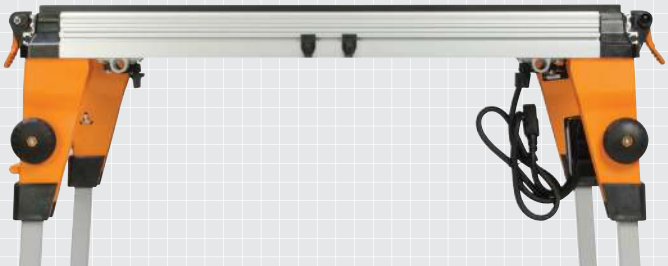
TWX7 CS001

TWX7 CONTRACTOR SAW MODULE

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





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Make light work of sawing with a precision Japanese pullsaw. Fine-toothed saw without back for trimming and deep cuts. The flexible blade also makes it extremely suitable for work in hard-to-reach areas.

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www.classichandtools.com

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Item number KGLTN

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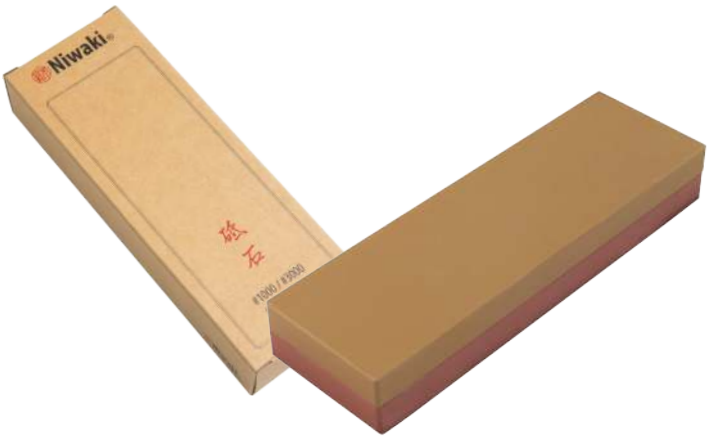

NIWAKI 1000/3000 COMBINATION WATERSTONE

A cracking all-rounder Japanese whetstone. The red ochre face #1000 is for general use, then finish off with the yellowish brown #3000. Soak for five minutes before use and splash with water during use to keep wet. Ideal for everyday sharpening of knives and blades. Size 185 x 65 x 30 mm.

£36

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Learn to Burn

PHOTOGRAPHS BY SNOOKS PHOTOGRAPHY

There's a lot to learn if you want to burn wood and other materials for decorative effect. Ben Beddows gives you an overview

Pyrography is the art of burning designs or patterns into wood and other materials. In this issue we are going to look at the basic tools and techniques you will need to get started. You don't have to be an artist or great at drawing to achieve positive and satisfying results in this craft. There are plenty of ways to transfer designs and use templates to get creating your very own projects.

1 Let's start by comparing the differences in the variety of pyrography units and the pros and cons of each. First off is the solid-point pen. Very affordable and durable, these types of pyrography pen can be a great entry-level unit, as they have solid tips that are generally interchangeable. ➤


1

2 Because of the larger tip it can take a long time to come up to temperature, likewise it takes time to cool down which can be frustrating when you want to change tips. The hand piece tends to have a long barrel – this is to protect your fingers from getting too close to the hot element but consequently forces your hand back from the workpiece.

3 These come in both fixed and variable-temperature versions. Great for beginners or those just wanting to dip their toes into the wood-burning world. I like using the patterned tips to build up quick textures and repeating patterns. Used like a brand these tips are usually an optional extra.

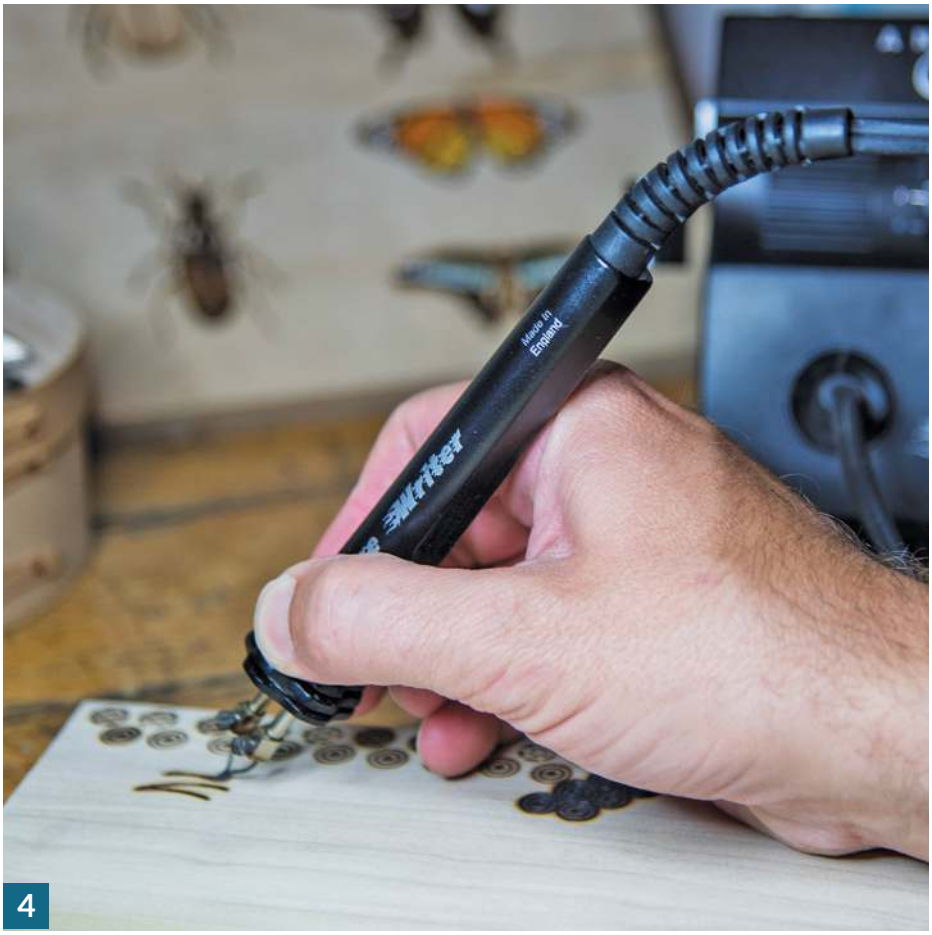
4 A much more versatile pyrography unit is the hot wire variety. This type takes Nichrome wire tips that have much less material in them compared to the solid-point pen. The basic ones are fixed temperature but, to my mind, it's worth spending a little extra for the variable-temperature unit.

5 There is plenty of choice when it comes to the hot wire type with Antex, Peter Childs, Razortip and Janik all making great versions. My advice when choosing between them would be to look at reviews and consider the hand piece. I use the Antex Firewriter, which has a fairly chunky pen.

6 A few other essentials you may want are: a wire brush for scrubbing away any carbon build up on the tips; a small screwdriver to suit the screws in the clamps that hold the wires; and a sharp pencil or a way to transfer your designs on to your chosen project blank.


2


3



4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7

Three top tips

- Eliminate blobbing. Blobbing occurs when the tip dips into soft grain or skips across hard grain. Try using a sharp tip to cut through.
- Have a scrap piece of timber nearby to take away the initial heat or gently blow on the tip to reduce scorching when you first touch on.
- Avoid soft and resinous timbers – these will prove difficult to burn on and give your work a patchy, uneven look.

7 Over the past few years I've filled a whole tool chest with bits and bobs to do with pyrography, but the beauty is that you really don't need much kit to get started. Just put the radio on, sit down and get comfortable with your chosen piece of timber and your pyrography pen… perhaps a cup of tea?

Sourcing timber and project blanks

It can be difficult at first finding wood to burn on to. Most areas will have a local sawmill so it would be worthwhile researching what is around you. Timber merchants will often supply a variety of woods but these are more often than not construction materials rather that wooden boards/planks.

8


9

8 Some project blanks can be easily picked up in town. Try the local cook shop for the likes of chopping boards, wooden spoons/spatulas and salt & pepper mills. It's worth looking in the arts and craft shops as they quite often carry items suitable for burning, such as wooden beads and wooden picture frames.

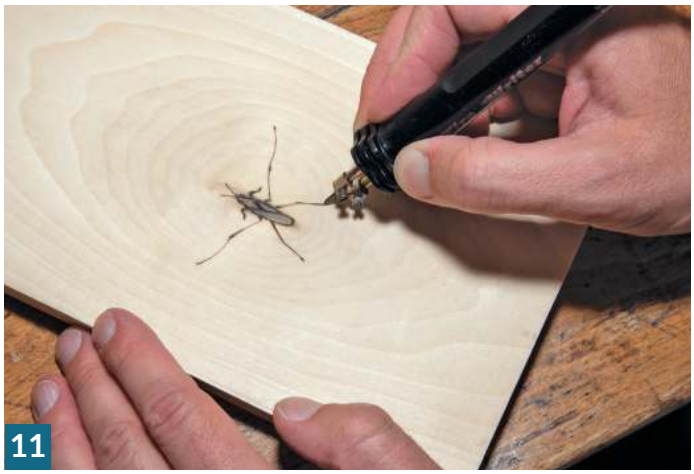
9 It is important to sand back any finished items brought in a shop. They will usually have an oiled or lacquered surface and these can produce a toxic smoke which isn't pleasant. It will also affect the burning, allowing the burn to blush across the surface. Rub down and wipe off any residue dust before you start work.


10

10-11 For illustrative projects I prefer natural-edged planks. They have a beauty of their own with grain patterns, knots, bark insertions and sometimes things such as spalting and water stains, all of which can be incorporated into your project. No two pieces are ever the same and you are never working on a blank canvas.

When choosing suitable wood to burn on look for close-grain woods such as sycamore, lime, maple and the fruit woods – apple, cherry and pear. Generally woods that are good for carving are also great for pyrography. Avoid timber with a high resin content, such as pine and cedar.

Most sawmills will offer a planing and sizing service for an additional cost that will save a lot of time, effort and mess sanding out the marks left behind from the bandsaw, leaving you with more time to enjoy the process of creating your new piece of art. ■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Christmas fun

PHOTOGRAPHS BY PETER BENSON

Peter Benson shares some fun ideas for Christmas carving projects

Sometimes carvers can take themselves a little too seriously and run the risk of losing the very reason that we carve – to have fun and to achieve something. If we are not enjoying the process, are not achieving what we want to achieve and are not giving anyone else any pleasure, then why are we carving at all? So here is an unashamedly fun Christmas-themed project.

Christmas workshop

While most of my students take their carving very seriously and strive to do better, this doesn't apply to all of them. Many attend classes for the companionship and pleasure they get from sharing their hobby. With this in mind we have developed a custom in all the classes that once a year, in preparation for Christmas, we carve something purely for fun. I am required to produce different patterns each year for them to work from. Some will copy, some will make their own variations and others will simply use the blank or block as a basis for their own design. For a few weeks the classroom or workshop resembles a sweatshop as they are trying to produce enough of these to satisfy the demands of their friends and families. We now have family gatherings where all the children and grandchildren meet around Christmas time to paint the carvings that Grandpa or Grandma have carved.

What is very evident with these sessions is that much of the stress that trying to carve a 'masterpiece' usually produces is totally lacking. The carvers still set themselves high standards but in a very different way. ➤

One of the carved Santas

Two different views of the snowman

Tools and timber

I have included a selection of some of these projects that have been made over the last few years and you may find them worth trying or not, depending on your viewpoint. If they are not for you, that is fine but don't dismiss them out of hand. If you are a member of a club, then show them to your fellow members, particularly the beginners as they may well like to give them a try. Each piece has been carved using little more than a knife and maybe a small gouge and 'V'-tool. I have used jelutong (*Dyera costulata*) as this is generally not too difficult to get hold of, is much cheaper than lime (*Tilia vulgaris*) and will take fine detail, as long as your tools are sharp. The standards of work can be what you wish, as long as the fun element is not compromised.

Making the pieces

There are three main ways you can set about carving Christmas characters:

1 You can sort out a basic pattern by carving or modelling a prototype then cutting it out with a bandsaw or coping saw. You then carve as near as you can to your original, making any adjustments as you go along.

2 The second method is to start with a fixed-shape block from which many different subjects will be carved. This was done with the nativity set and has advantages in that you don't have to stick to a set design – it just has to fit into the basic block. The 'copy carvers' find this a little more difficult, but it is a very good way to wean them off copying and produces some good results quite quickly. If they are really reluctant to change, I show them a variety of options that are possible from the basic block and they can go from there. Sometimes it is better to just go with the flow.

3 The third option is to use random shaped pieces of wood and get them to make up their own subjects. This can be a bit scary at first but if the block has come from the waste bin, the carvers don't see it as much of a disaster if it all goes pear shaped. They don't have to know that you probably cut out the random shape in the first place.

As all these pieces tend not to be carved in isolation – the design process is ongoing. Each carving is a development of the one before, with new skills and additions acquired as you go along. Once you start with your designs you will be amazed how your mind starts to get carried away, adding new elements to each successive carving. We have had carol singers with mobile phones, bottles of drink, snowballs, lanterns, catapults, bells, trees… and the list goes on. As a result, one problem with carving small pieces like these is that you get tempted to include too much detail. The design should be kept as simple as possible with detail kept to a minimum. Much can be shown by body language or even by painting, if that is what you want to do.

Cut out from pattern

The snowmen, elves – or Santas – on the first page and the small carol singers have been cut out from a pattern, as in option 1. This I cut out from one side view or front only and it does give the carver a rough idea of the basic shape, but doesn't prevent simple changes from being added. The choristers and penguins come from a very basic rectangular block and the nativity set came from a simple curved cone shape cut from a block measuring roughly 100 x 50 x 50mm, with even the pieces cut from the sides being used to make small hanging Santa heads – see photo. The choristers came from a block measuring 125 x 38 x 38mm or thereabouts, and the penguins and other small pieces came from whatever was lying around. Very little wood was ever wasted with these projects.

The carol-singing kids are roughly 75mm high and can be freestanding or used as hangers

Basic block with waste pieces shown. These will be used for hangers

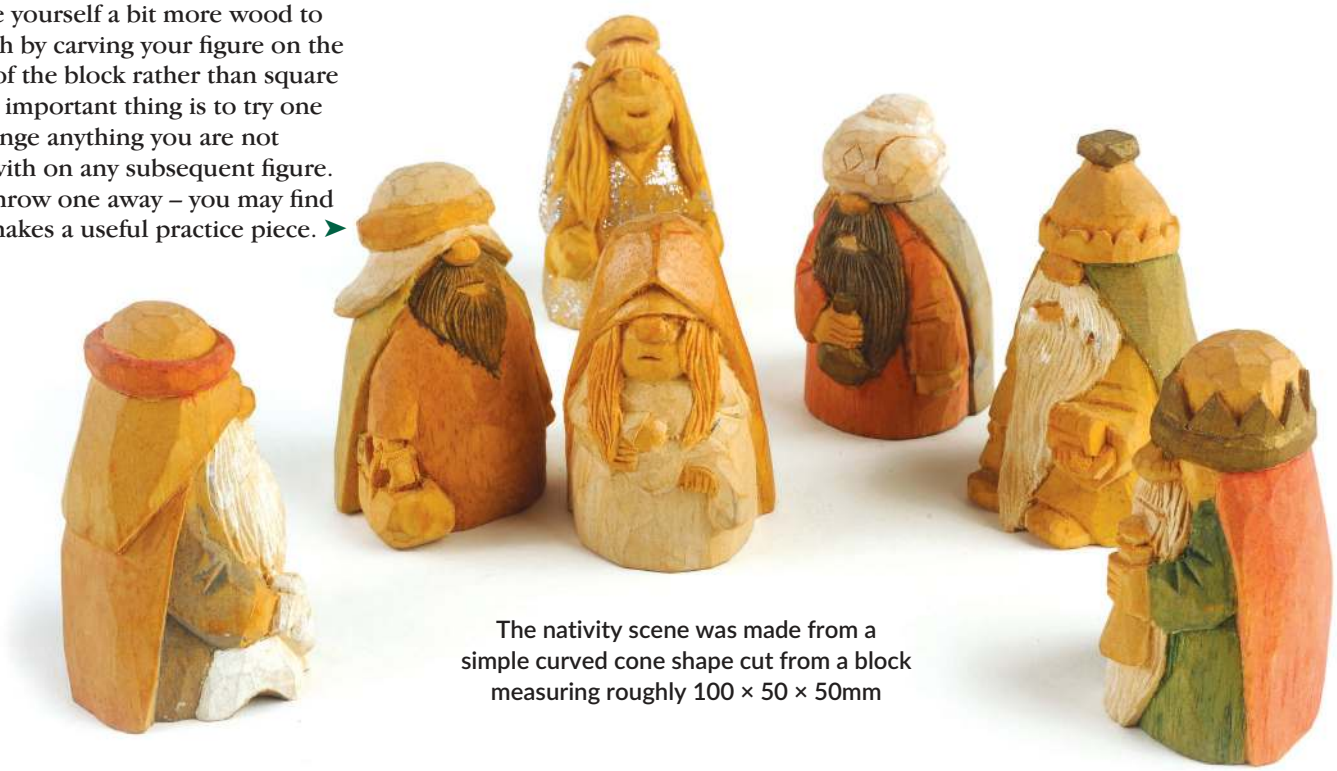
Adding design and character

The actual carving process is much the same for all the different designs I have shown here. I recommend that, once you have decided roughly where the arms, legs, hands, etc. are to be placed, you then start by carving the head. This will set the character of the carving. As it is likely to be the most difficult and important part of the carving, if it goes wrong then you haven't wasted a lot of time doing the rest of the body. You may find that you give yourself a bit more wood to play with by carving your figure on the corner of the block rather than square on. The important thing is to try one and change anything you are not happy with on any subsequent figure. Never throw one away – you may find that it makes a useful practice piece. ➤

Basic block marked out, together with Santa head hangers made from waste

The figure carved diagonally across the corners to give more bulk

These four steps show the first stages of the carvings – in this case the shepherd – working on the head first



The nativity scene was made from a simple curved cone shape cut from a block measuring roughly 100 × 50 × 50mm

These are no more than 50mm high but can be any size or shape you wish – they don't even have to be an accurate penguin shape. The colour will do the trick

All these carvings have been painted with acrylic water-based paint. I tend to coat the carving with boiled linseed oil, to which I add a small amount of raw sienna oil paint and then paint with very diluted paint, giving the carving a tint rather than a bright colour. For Christmas you might prefer brighter colours, in which case apply the paint undiluted to the bare wood – the choice is yours.

These carvings will certainly not change your life, they may not even be right for you, but they should at least make you or someone else smile and I think they are worth trying just for that reason. ■

When it comes to choosing the individual designs, let your imagination run wild. After all, carving is all about having fun

These figures are infinitely variable – the cassocks can be any design or colour and the character of each piece can be what you make it. If you don't fancy carving eyes, then give your figure a long fringe. As they are all supposed to be singing, a round mouth is ideal. Again, as with the nativity figures, I advise you to get the head carved to your satisfaction before you start the body. Keep in mind that choristers appear to be little angels but there is mischief lurking underneath – so try to incorporate that in your carving

Trees for life

Holly

'The holly and the ivy...'

The evergreen Christmas carol which sings the praises of a spiky but very special tree

Holly (*Ilex aquifolium*) is a familiar sight almost everywhere. Our very own Gary Marshall notes: 'There are many ancient woodlands in Britain that have holly in the understorey – or occasionally, in the canopy. Needwood in Staffordshire was once a prime example, but it was deforested following the Inclosures Act of 1803. More than 100,000 mature hollies were felled in Needwood in the 1800s in order to make bobbins for cotton mills.

'Where animals still browse freely, as in the New Forest, extensive areas of low holly undergrowth, like stunted natural topiary, can occur. Where trees do grow larger these provide good shelter for stock. Some stockmen still lop off limbs or pollard holly to provide winter feed for their animals.'

The tree

Lower branches and outgrowths near the ground will be covered in spiny leaves. As you look further up, the leaves lose their prickles and can become perfectly ovoid. When not grown as a hedge holly has smooth, grey bark, with old branch whorls like an elephant's eyes. The branches and wood are tough, with a pleasing smell when cut. Holly spreads by seed with avian helpers, and by vigorous suckering and layering, particularly in shady woodland, with a clay or sand and clay soil. A high holly hedge has prickly leaves all over because it reacts to hedgecutting as if we were giant herbivores. It can even be used successfully as a 'laid' hedge.

Variegated holly

Holly flowers

Seeds are spread with the help of birds

The familiar spiky lower leaves

The smooth leaves found higher up

The timber

The very wide sapwood is usually whiter than the heartwood, which varies from very white to ivory-white in colour. It has a very close, irregular grain with a fine, even texture, normally without any figure. It is better cut in winter so the white wood will not discolour. It has little or no resistance to insect or fungi attack.

PHOTOGRAPH BY GMC/ANTHONY BAILEY

Right: A neatly manicured holly bush

A lone holly in a rural hedge

PHOTOGRAPH BY GARY MARSHALL

Working characteristics

Holly is tough, heavy and hard and it is not normally used for steam bending because of the small sections available. The irregular grain makes sawing and planing difficult. Cutting edges must be very sharp and set at a reduced angle. The wood has a moderate blunting effect on tools. It turns, carves, sands, glues, screws, stains and polishes well.

Satinwood cabinet with holly drawers, by Andrew Varah

Teardrop box

Uses

Holly wood is considered to be the whitest of woods and thus used in veneer form for marquetry and in small sections for white chess pieces, furniture making and bobbins. This includes fine turnery, inlay lines and piano and organ keys. It may be dyed black to substitute for ebony. It burns well even when green.

Myth and legend

It is common to see lone holly trees in country hedges – many a hedgecutter deemed it bad luck to cut a holly down. It was believed to ward off malevolent faeries, or even to stop the devil running along the hedge.

Hunter's Fleet

Broads vessels that have survived against the odds. By Richard Johnston-Bryden

Hunter's Fleet has survived to become a symbol of the golden era of sailing holidays on the Norfolk and Suffolk Broads at the turn of the 20th century. The fleet was founded by Percy Hunter together with his sons, Cyril and Stanley, who chose a plot of open marshland at the end of Ludham's Horsefen Road in 1931 as the base for their new venture.

Building the fleet

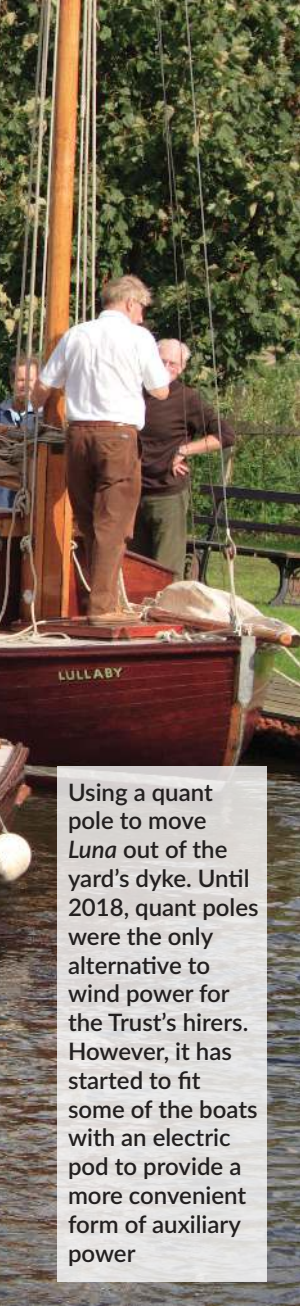
The Hunters set themselves some ambitious targets for their first year, beginning with the arduous task of excavating a dyke by hand to link Womack Water to the site of the proposed boatsheds in February 1932. In addition to developing the Ludham site, they also committed to building their first three yachts – *Lustre*, *Lullaby* and *Woodruff* – which were marketed within the 1932 Blakes brochure. Realising they could not complete all three boats themselves, Percy Hunter negotiated a deal with Alfred Pegg of Wroxham to build the three-berth yacht *Woodruff*. Before the outbreak of WWII the Hunters built a further nine yachts and two half-deckers to form the backbone of their hire fleet.

Outbreak of war

Amid the gathering clouds of war, rumours began to circulate in August 1939 that, in the event of war, the government would seize as many boats as possible on the Broads to moor on open stretches of water to prevent German seaplanes landing. Fearing for the future of the fleet he had worked so hard to establish, Percy took the bold decision to suspend his business at the height of the hire season and haul out his boats before they could be seized. It proved to be an inspired move because the government began commandeering large numbers of boats on the Broads shortly after the outbreak of WWII. By the end of the war many of these boats were in need of extensive refits or reconstruction before they could be used again. When the government officials visited Hunter's Yard they allowed the fleet to remain at Ludham providing a motor launch was sunk at the entrance to the dyke to prevent the rapid relaunching and use of the fleet in the event of an invasion. Once the threat of a German invasion had passed in 1944, Percy Hunter was given the go-ahead by the government to resume his business.

Sale of the fleet

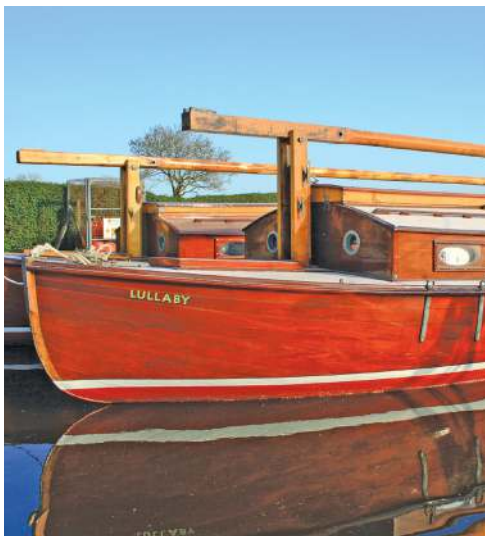
During the 1950s and 1960s motor cruisers progressively replaced many sailing craft within hire fleets around the Broads, which created the next major threat to the future of Hunter's Fleet. Following the death of Percy Hunter in January 1964, Cyril and Stanley continued to run the



Using a quant pole to move *Luna* out of the yard's dyke. Until 2018, quant poles were the only alternative to wind power for the Trust's hirers. However, it has started to fit some of the boats with an electric pod to provide a more convenient form of auxiliary power

The yachts operated by Hunter's Fleet head off towards Thurne Mouth in company during a weekend event organised by The Friends of the Hunter Fleet

Launching *Lucent* for the start of her first season in hire in 2007



Note the unusual folding masts

PHOTOGRAPHS BY RICHARD JOHNSTONE-BRYDEN

business, but it was becoming an increasingly difficult task for them. The brothers were ultimately left with no alternative but to sell the fleet due to the combination of Stanley's deteriorating health, Cyril's desire to reduce his workload and the absence of Percy's leadership. Fortunately, the sale of the fleet coincided with Norfolk County Council's (NCC) desire to establish a sailing base on the main Broadland network to build upon the experience offered by its facilities at the nearby Filby Sailing Base.

Learning life skills

Under the leadership of NCC's chief education officer Dr Frederic (later Sir Lincoln) Ralphs NCC's Education Authority purchased a number of extra curricular facilities to offer Norfolk schoolchildren the chance to gain a rounded education. Dr Ralphs was a strong supporter of sailing within Norfolk's schools, not least because it taught children important life skills, such as discipline, tolerance and team work. When he was informed that Hunter's Fleet was for sale Dr Ralphs could see the fleet's potential to provide teachers with the chance to take parties of children for prolonged periods afloat and enable them to learn more about the Broadland environment as well as sailing. NCC formally purchased the fleet on 1 January 1968 and renamed Hunter's Yard The Norfolk County Sailing Base. ➤

Rigging *Lucent* for the start of the season

The Heritage Fleet Trust

During the council's ownership the fleet was enlarged through the addition of the half-deckers *Brown Bess* and *Sundew* in 1968 and 1973 respectively. As the number of Norfolk schools using the fleet fell to an all-time low in 1994, some of Norfolk's county councillors thought it could be used as a pawn in their game of political brinkmanship with John Major's government. In February 1995, NCC's decision to sell the fleet as an economy measure became front page news. Unimpressed by such a crude attempt to use an important piece of Broadland history to score cheap political points, the people of Norfolk reacted strongly against this decision. Their support quickly led to the foundation of the Norfolk Heritage Fleet Trust (NHFT), which completed its purchase of the fleet in September 1996.

Last yacht build

Since its acquisition by the Trust, the fleet has undergone further expansion with the addition of the half-deckers *Rebel Reveller*, which was restored at the Yard, *Buff Tip* and most recently *Valiant Rebel*. The Trust's most ambitious project came to fruition in 2007 when the 29ft *Lucent* joined the fleet, thereby fulfilling a pledge by NHFT's founding members to build a new wooden yacht to one of Percy Hunter's original designs. Sadly, it seems as though *Lucent* will be the last yacht to be completed by the Yard. The present facilities are unable to cope with further boats and the construction of another building would radically alter the character of the site, thus going against the whole spirit of the Trust. These constraints may be a blessing in disguise for the Yard's team of craftsmen as the task of maintaining the fleet's ageing sailing craft will inevitably increase in the coming years.

A wire strop is attached below the stem on to which the wire from the winch will be attached

A bassine brush is used to scrub all the hard-to-reach places under the toe rails etc.

Moving the safety stools forward to a new position in front of the hull to ensure there is no risk of the boat falling

Lining up one of the yachts on the slip in readiness for the greased way and slider plank to be pushed below the keel. The keel sits on the slider, which slides along the wooden channel on solidified fat commonly used by fish and chip shops

Winter maintenance

Under the Trust's ownership, the maintenance team have continued to observe the proven routines first established by Percy Hunter in the 1930s. As the season draws to a close each year, the team start planning the winter programme. Inevitably, the boats incur a certain amount of damage during the season. When accidents occur the damage is usually sorted out with a running repair to keep the boat operational for the rest of the season, and rectified by a permanent repair during the winter maintenance programme.

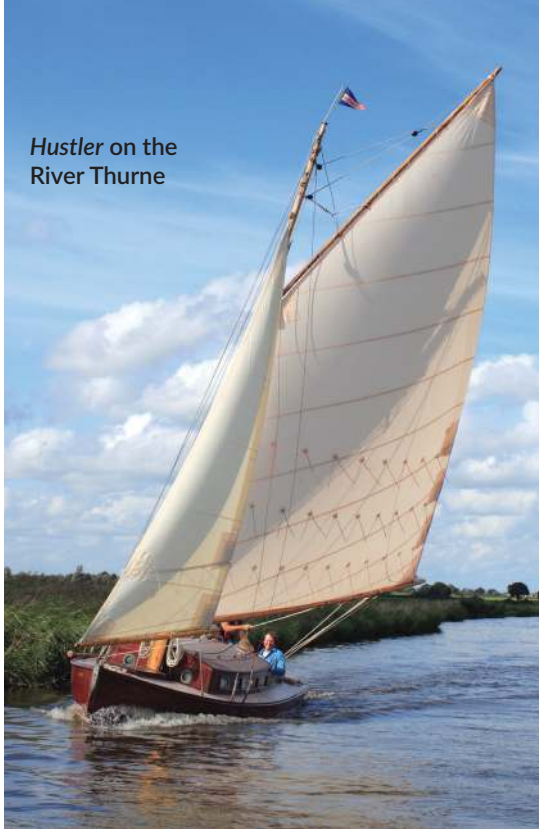
Hull replanking

Wherever possible the team try to anticipate potential problems with the boats and take preventive measures to ensure that each boat is kept to the high standards that people have come to expect of the fleet. As the boats get older the scope of this programme will progressively increase. For example, some of the older boats have had to be re-planked above the waterline as a direct result of repeated sanding, which has worn down the thickness of the hull planks to the point where they are likely to be stove in by minor bumps incurred when coming alongside quay heading etc.

Strip and varnish

Obviously, it is not possible, or necessary, to strip all of the boats back to bare wood each winter, so the team focus their main efforts on one boat every winter, while conducting

The process of steam bending the ribs to be installed in the hull



Hustler on the River Thurne

Hustler 4's decks stripped back ready for new lino to be fitted

Hunter's Fleet laid up ashore for the annual programme of maintenance during the winter months with rooves lifted

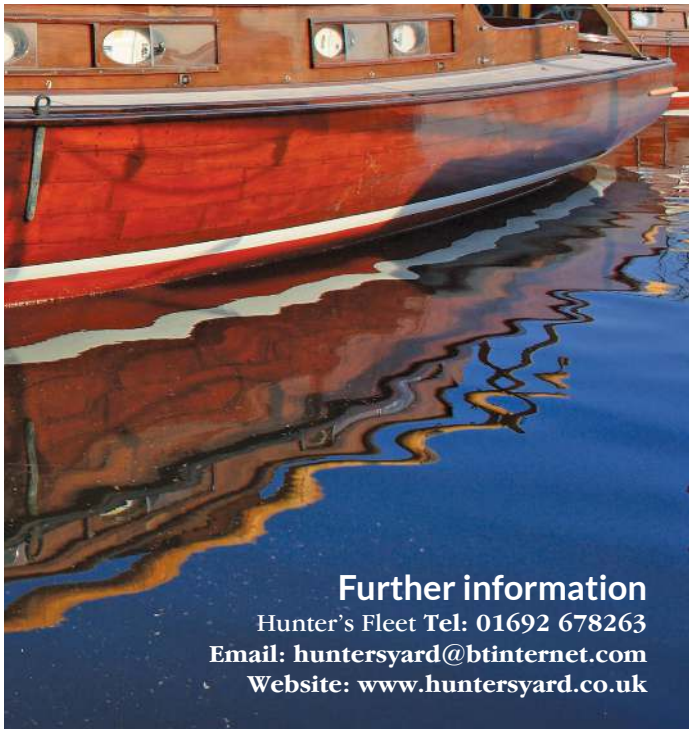
routine maintenance on the rest of the fleet. The work on the boat selected for 'intensive care' begins with the removal of the varnish to reveal all of the hull's blemishes, which are then eradicated either by routing out the damaged wood, or replacing an entire plank of wood. When all of the woodwork is completed, the stain can be applied followed by seven coats of varnish.

Working from the top down

Elsewhere in the sheds, the work on the other boats is split into manageable chunks, beginning with the cabin tops, rails and blocks, followed by cabin sides, toe rails, and then the hull, before concluding with the application of the white line and the anti-foul. The logic behind this approach is that all of the muck and debris flows downwards. Providing all is well, the high level work is finished by Christmas and the hulls are on their way to ensure the fleet is ready in time for the arrival of the first hirers during the Easter weekend.

A rosy future

By adhering to these proven routines, the Trust has managed to uphold the 'Hunter standard' for the past 20 years which, combined with its ongoing commercial success, means that the fleet's future prospects have never looked better. ■



Further information

Hunter's Fleet **Tel: 01692 678263**
Email: huntersyard@btinternet.com
Website: www.huntersyard.co.uk

Christmas bookshelf

It's that time of year when we going looking for the interesting, wacky and unusual book titles which we think you will enjoy reading – perfect presents of course…

Paris Picnic Club – more than 100 recipes to savour and share

Shaheen Peerbhai & Jennie Levitt

A good, thick tome between kitchen demolition-proof covers, this one is definitely for the epicureans among us. It says more than 100 recipes and it isn't joking – suffice it to say it is hard to give a fully rounded flavour of all the treats within. Small plate items such as Breton artichokes or marinated sea scallops or potage d'hiver (potato and leak soup with garlic chicken). Let's move on to sharing dishes such as apple, fennel and kohlrabi salad, or maybe coconut fish stew? Roast beef and Escoffier potatoes are on the menu and there are tartines galore – turkey and English cheddar sounds interesting. Desserts, take me away please – raspberry and geranium tart, chocolate and hazelnut butter cakes. You get the idea – tons of lovely things to make and eat with your guests.

Sterling Epicure
ISBN 978-1-4549-2036-6
£19.99

Hasselblad & The Moon Landing

Deborah Ireland

Once, back in the '70s, I worked at a big west London photographic studio as second assistant to a fashion photographer using a Hasselblad camera – this brought it all back to me. Hasselblads are truly iconic and still selling today. The stunning images the specially built 'Hassels' brought back to earth record the unimaginable – stepping on the moon and looking back to our very own terra firma. There is a lot of technical detail and the human story of those brave extra-terrestrial pioneers. The cameras didn't lie, they prove beyond doubt those landings were very real by recording those momentous events in the 1960s.

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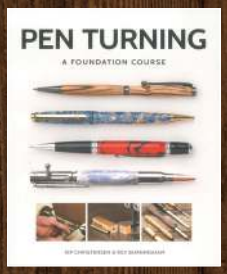

Pen Turning – a foundation course

Kip Christensen & Rex Burningham

You don't need a big lathe or lots of space – you can create stunning results with care and knowledge. The authors give us the information we need in spades. Setting up your workshop, the materials to choose, be it wood, acrylics etc. Chapter 2 is an overview of the pen-making process followed by project chapters: Slimline pen, Twist pen, Single-barrel pen and Bolt-action pen in deer antler. Plenty of very clear illustrations, tips, tricks and jigs.

GMC Publications
ISBN 978-1-78494-368-4
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Homebrew World – discover the secrets of the world's leading homebrewers

Joshua M Berstein

Homebrewing is, as the book says 'a delicious act of drinking disobedience refuting the fermented status quo, in order to fashion new flavours and take beer in unexpected new directions'. The author has written a real winning beer drinker's travel guide. Get to know the stylists who hammer home perfect takes on time-honoured beers – the Hop Pack who boldly push IPAs and other hop-forward brews into fragrant new territory; the Wild Ones who are harvesting ambient yeast, unleashing rowdy microbes and experimenting with souring bacteria to extend the boundaries of good taste; and the Creative Front, who follow one simple rule – no rules at all. You'll discover what triggered the homebrewing renaissance, learn how some of the greatest beers went from kitchen table to world domination and find out how to run your own homebrew tour

Sterling Epicure
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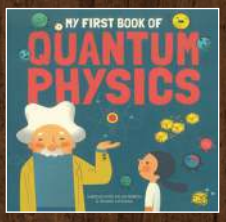

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Sheddad Kaid-Salah Ferrón & Eduard Altarriba

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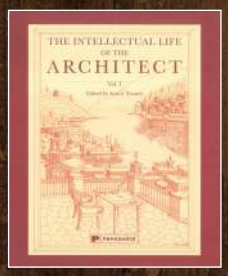

The Intellectual Life of the Architect Vol. I

Edited by Samir Younés

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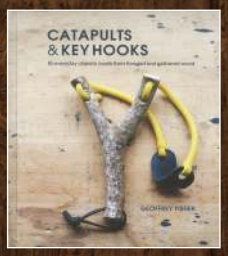

Catapults & Key Hooks – 15 objects made from foraged and gathered wood

Geoffrey Fisher

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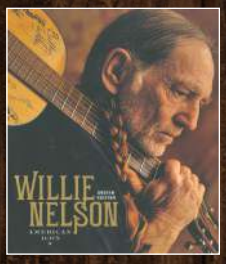

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Andrew Vaughan

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Welsh stick chairs - *Part 1*

Gareth Irwin introduces us to a style of chair with ancient roots, which is appreciated by modern-day enthusiasts

The term 'stick chair' can be used to describe a huge range of chair designs, made in many different places and over a very long period of time. Broadly speaking, if a solid board is used for the chair seat and the legs and backrest are joined into it, it is a stick chair. If it is made in Wales, it is a Welsh stick chair.

The earliest evidence of a stick chair appears in the mid-12th century Welsh manuscript, *The Laws of Hywel Dda*. A drawing shows a judge sitting at court on a three-legged chair. This chair clearly has a slab base with legs and backrest fitted in, as opposed to a framed construction.

A 12th-century image of a stick chair

PHOTOGRAPHS BY GARETH IRWIN

An early chair with one-piece carved armrest

A stick chair with ash seat and jointed armrest

An elm seat board with split-resistant interlocking grain

Evolution of the stick chair

Over the next several hundred years, stick chairs took on many different and evolving forms, from heavy, three-legged chairs with armrests carved from a single piece of curved timber to taller, elegant chairs with multiple thin back sticks and either steam-bent or jointed, sectional armrests. What all these chairs had in common was that each chair was made in its entirety by a single craftsman, who made each chair in their way, according to their own unique influences.

Stick chairs are sometimes mistakenly referred to as Windsor chairs. In contrast Windsor chairs were mass produced in the 19th century to furnish the new towns of the industrial revolution. They were made to patterns by specialist craftsmen who only made their component parts. 'Bodgers' worked in the beech woods of the Chilterns, pole lathe turning the legs, stretchers and spindles. 'Bottomers' adzed out seat slabs and 'framers' assembled and finished chairs in the factories of High Wycombe.

Timber

The timbers used for stick chair making varied according to geographical location. Most Welsh stick chairs featured parts cleft from the locally abundant oak and ash. Both of these timbers are long fibred and very strong – ideal for chair parts. They will readily split when green to yield all the chair parts needed including the seat slab. This readiness to split meant that the seat slab needed to be very thick to resist splitting in use and when the legs and upper parts were driven in.

Cleaving timber was much easier than sawing along the grain before the invention of mechanical sawing. Cleft timber is also very strong as the fibres of the wood run through the length of the pieces.

Later chairs feature sawn seat boards and sometimes, as with Windsor chairs, elm was used for the seat slab. Elm has interlocking grain so will not split. This feature makes it ideal in use but means it must be sawn from the log.

Making a stick chair

As we have seen, there are many different styles and many different ways to make a stick chair. This article will cover the making of a tall, comb-back stick chair with curved armrest but can be adapted to suit any style. My methods are roughly the same as those used in Wales over hundreds of years. The legs and upper parts are cleft and shaped from green ash. The curved armrest can either be made from joined sections or by steam bending. I do use sawn boards for the seat slabs, mostly in elm.

1 As green wood is being used for the legs and back sticks, it's important that they are fully dried before shaping any tenons on them. For this reason the first thing to do when making a chair is to cleave ash logs of about 600mm for the legs, 800mm for the long back sticks and 300mm for the short side sticks.

2 With axe and drawknife (see my Cleaving Green Logs article in issue 40), roughly shape five (it's a good idea to have a spare) leg billets to about

50mm diameter, six long sticks to about 25mm diameter and nine short stick to about 25mm diameter. Put these somewhere warm to season for a few weeks; we will return to these later. ➤


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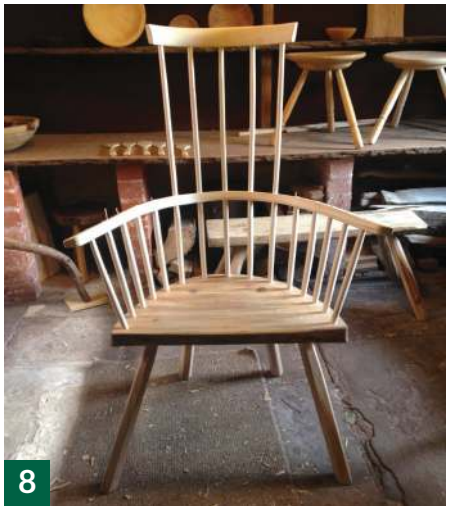
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3 The armrest can be made by either lap-joining sections together or by steam bending. Both methods can be seen in old Welsh chairs and the shape can be anything from a perfect 'C' to a 'three sides of a square with rounded corners' shape.

4 To make a lap-joined armrest, a template for one half can be made in card and used to saw out the two halves from a 30mm thick board, leaving plenty of length for the two sides to overlap. Half lap and glue the two sections together. When the chair is assembled later, one or more of the long sticks will go right through this overlap, making it inseparable.

5 A third piece can also be fixed on top of the joint, which all the long sticks will pass through. When selecting a board for this, look for any curved grain to follow, e.g. around a large knot. This will reduce the amount of 'short grain' running across the narrow arm.

6 Steam bending is a whole article in itself that is actually fairly straightforward but requires a bit of apparatus. If set up for this, it is probably the easiest way to make curved armrests. Whichever method is used, the finished arm can be anything from 600mm to 800mm wide and should be 450mm to 500mm from front to back.

Issue 26 has an article on making a steam bending box which readers can request – Ed)

7 The form and style of a chair are very much influenced by the relationship between the armrest and seat slab. If the armrest is the same width as the seat slab then the side sticks will appear vertical when viewed from the front, giving a sort of boxy, primitive feel.

8 If the armrest is wider than the seat it will have a more delicate, sweeping form. Neither of these is wrong, it is a matter of taste. With this in mind it's time to cut out the seat slab.

9 Select a board of 450mm to 500mm width, 600mm to 800mm length. If you are lucky enough to be using elm, it can be as little as 45mm thick. Oak should be 60mm or 70mm, 70mm to 80mm for ash. Using the curves of the armrest as a guide, the outline of the seat slab can be drawn and then cut out with a turning saw.

In the next issue the seat will be shaped and the chair spindles shaped, assembled and completed. ■

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PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Play the game!

Digital games are all the rage but even these games can be played with your digits...

None of these projects is difficult to make and playing the games can be a lot of fun with friends and family. Quite a few of the projects involve turning, so a lathe is an obvious must for these. If you don't have a lathe, then a project such as the bar skittles set could be made in other ways, by buying large-diameter dowels, for instance.

Diabolo

You will need

- 25 x 25 x 440mm timber for sticks
- 40 x 40 x 65mm timber for capping piece
- 70 x 70 x 80mm timber for spool
- Cord 600-120mm long
- Danish oil

The sticks and capping piece are made of European ash, and the spool is a piece of European oak. The stick and cap can be made from one piece of timber, it depends if you mind cutting away all the waste when turning them between centres. When turning the spool, make a spigot chuck from a piece of scrap timber and pre-drill the appropriate size hole on each end of the blank before fitting to the lathe for turning. Rough it down to 67mm diameter, then square up the ends with a skew chisel to give an overall length of 75mm. Mark a line at the exact centre point, and two more 10mm from each end. Use a parting tool to undercut the diameter on the centreline and a gouge to form the cone shapes on each side as symmetrically as possible. Reduce the diameter at the centre to 22mm and then round all corners. It is important the spool balances around its centre point as this helps beginners. To check this, balance it on a thin rod – if it tips over then drill out slightly more of the hole on the heavy side… then off you go.

Skittles

You will need

- Hardwood
- Nine pieces 75 x 75 x 275mm for pins
- Three pieces 75mm x 75mm x 95mm for balls
- Danish oil

Turning the skittles is all about having the right templates. First of all, make up a squared template with the required diameters of the head, neck and body of the skittles. Use a parting tool to cut each diameter to the correct size. Then make up a template for the actual curves of the skittle, and start to form the profile with a roughing gouge. The surface will be quite rough, but you can refine it with a light cut using a skew or spindle gouge. When finished, sand up and use three coats of Danish oil to finish it off.

The balls

Mount the blank between centres and turn down to 70mm. Again, this is all about having a decent template. Use the parting tool to cut the width of the blank to the required size. With a spindle gouge, start to turn the edges and use your template frequently to ensure you are keeping it perfectly spherical. Sand the ball down, reduce the waste to a safe size and remove from the lathe, then cut off the waste and sand down. Three coats of Danish Oil will finish it off.

Cribbage board

You will need

- 255 x 100 x 25mm softwood
- Pillar drill and 2mm bit
- Tung oil

The cribbage board was simplicity itself. Cut and plane the softwood, and then rout an edge on. The real trouble came trying to drill all the holes. You need four rows of 30 holes, made in groups of five. Marking them on required an awful lot of trial and error, and a very sharp pencil. Drilling the holes was even more of an issue. I used the pillar drill, and tried very hard to drill in exactly the right spots. Even so, I found quite a variation in the hole positions. The drill bit seemed to move slightly and, even with care, it was very hard to centre properly. In the end I clamped a fence to the pillar drill and then moved the board along to ensure the holes were spot on in one direction. The result was still a bit patchy, however. If you have any better ideas for getting it spot on, please log on to the forum and let me know.

Wooden maze

You will need

- Ball bearings
- Router and radius cutter
- 25 x 252 x 252mm hardwood
- Tung oil

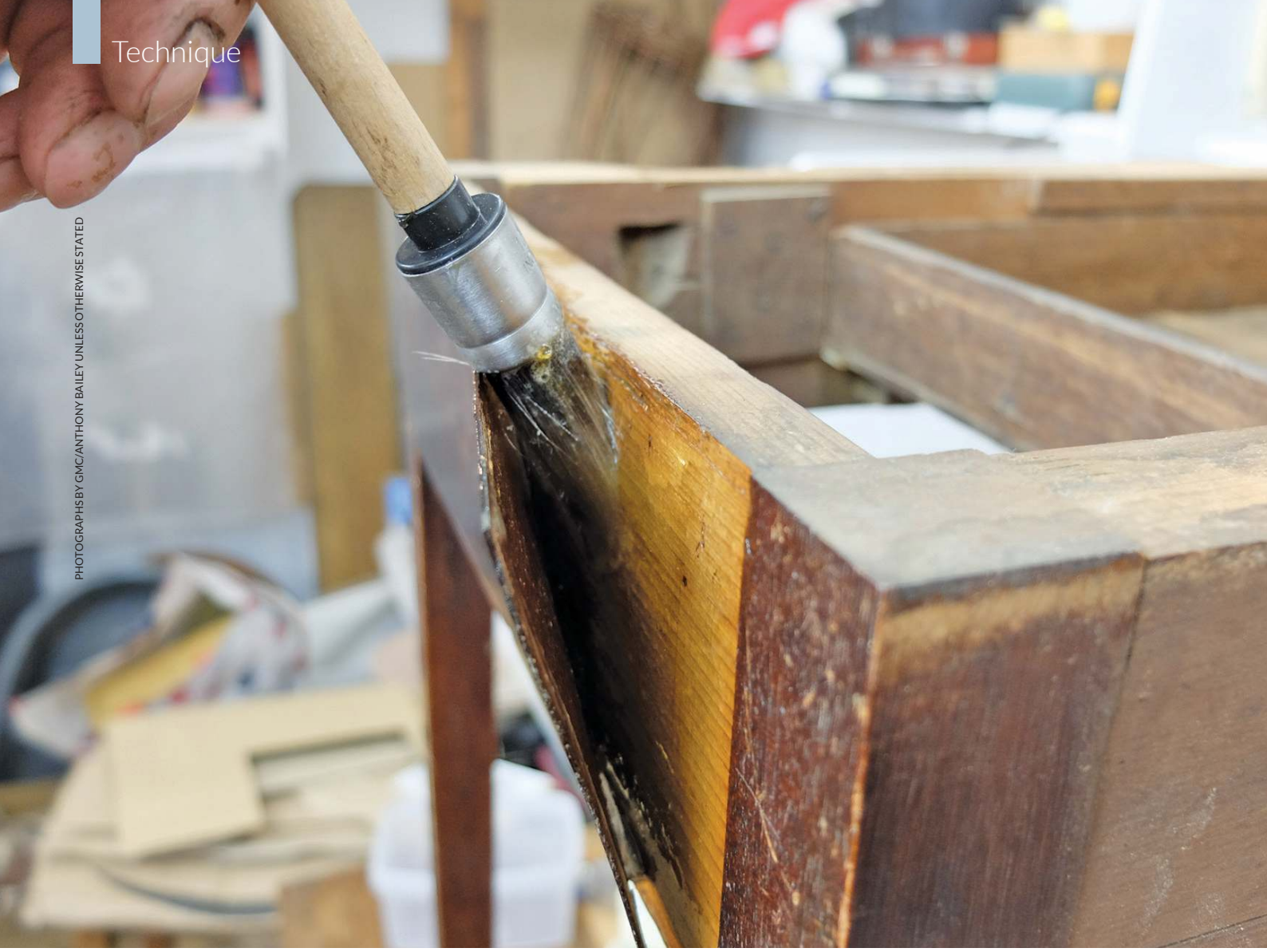
The maze itself was simply made by marking out a 250mm diameter circle on the blank and also the pathways for the maze. I decided to leave cutting out the circle maze until I had routed in the maze pathways, in case I messed up. This also provided more stability for the router. To cut the pathways, I made an inboard trammel jig – this is a jig attached to the router base with a pin to locate in the centre drilled in the workpiece. The jig is 'inboard', because the pin is located in the holes in the jig to give the correct diameter of maze pathway, which falls inside the radius of the router base. Using the jig, and radius cutter set to the required depth, I routed out the circular pathways. I cut the radial pathways between the circular pathways by using a straight-cut router jig for a 30mm guide bush, clamped from the centre hole of the maze. After routing the pathways, I cut out the maze itself, routed on an ovolo moulding to the edge, and then sanded up the piece. I had to use a very sharp gouge chisel to clear the edges of the joins between the concentric and radial pathways. After all was cleaned up, I used two coats of Tung oil, and off she went.

Bar skittles

You will need

- 2in square hardwood battens
- 305 x 305 x 25mm hardwood
- Bannister spindle, piano wire, 1in dowel, ⅜in dowel
- Screws, glue, wood stain
- Water based white undercoat

The bar skittles set was made quite a lot easier by the use of a banister spindle for the upright. I cut off the square section bottom of the spindle and lengthened the top part of it by dowel-jointing a larger section dowel on to the top of it, having cut off the top moulding on the spindle top, and recessing the moulding and gluing it on to the spindle. The skittles were all made with four pieces of 2 x 1in, 24in lengths of maple, glued together to form two square profiles. I turned four and five skittles from each length respectively on the lathe to the correct profile. I used a template for the three different diameters of top, middle and bottom of each skittle so I could get them to be fairly uniform. The base was made of elm, and is a circle with an additional outcrop of elm to take a square recess for the upright to be glued in. Holes were cut for the skittles to stand using a Forstner bit. With the varying timber types used, I thought I would stain the whole thing. One coat wasn't enough, two was a bit patchy, and three was too dark. I had the idea to paint the thing with white undercoat and then, when dry, I finished off with a good rub with wire wool. The end effect was pleasing, giving a worn, been-in-the-pub-for-years look. ■



PHOTOGRAPHS BY GMC/ANTHONY BAILEY UNLESS OTHERWISE STATED

Demystifying Animal hide & bone glue

Working with traditional glues may seem like a thing of the past – not so, says the **Editor**

I last did serious furniture restoration work as a business more than 25 years ago. In that time there have been various technical developments, including modern adhesives. However, when it came to restoring a Georgian drop-leaf table, I had to bite the bullet and start using old-fashioned glue again. The last time I did, it was just part of the job and I had forgotten just how effective it really is.

1 There are a number of different animal-derived glues – rabbit skin glue for things such as bookbinding; fish glue, the strongest of which is derived from the sturgeon and used for bonding metal to wood as used for Boulle furniture; and, lastly, animal hide/bone glue for general woodworking. If you are against the idea of working with animal-derived by-products these glues are not for you. Do remember, though, that all manufacturing processes are harmful in one way or another and not without cost.

2 This isn't a technical article, just a 'get you started' taster for working with such glues. Unless you obtain the

1

Replacement Boulle metalwork by Amber Bailey needs the strength of fish glue to hold it firmly to a wooden drawer front

ingredients from a specialist supplier, the type you will most readily find is known as 'pearl glue' on account of the dried, golden brown-coloured pearls that come in a sealed, moisture-proof packet. That, plus water and a means of heating without cooking the mixture, is all you need. There are proper electric glue pots which are very expensive and fine if you are in the restoration business.

3 For smaller domestic users there are two cheap options I know of. One is a digital-controlled wax heater for beauty work. Mine came with packs of coloured wax beads which I nearly threw away, but mixed together would behave a bit like dental wax and could be used for making impressions, so I'm keeping them. Cost? About £26 new on Ebay. The other type is a baby bottle warmer for about £20 from any baby goods supplier, either in town or online.

4 The critical thing is that the glue needs to be heated in a separate container from the heat source so it cannot burn or dry out. Old-fashioned glue pots sit in a water jacket. Temperature control is important – advice online suggests about 140°F or 60°C. My wax heater has digital temperature control so it heats to roughly the right temperature to melt the glue and keep it runny.

5 Having got glue, water and a heat source, you need to pour some pearls into the container. You can be scientific and weigh it first then add water by weight to get the correct ratio. There are various computations online.

6 My crude method is to just cover the pearls with water then add half as much fluid again. Experimentation will show what gives the optimum mix.

7 Leave the pearls to absorb the water for a couple of hours, then turn on the heat.

8 After a while and stirring occasionally, the glue should become evenly runny and drip easily off a stirrer. At this point it is ready to use. It may seem runny, but once it dries the glue will hold components fast and it does have a shrinkage effect so it pulls surfaces together. It acts almost like a sort of superglue and is very effective at bonding wood, leather, mother of pearl, etc.➤

2
L-R Liquid hide glue, traditional glue pot, glue brush, pearl glue, electric glue pot


3
A cheap wax heater with lift-out pot suitable for working with hide glue

4
Temperature control is important so the glue maintains its strength


5
It can help to develop a more precise repeatable method for glue/water ratio


6
Add enough water to cover the pearls, then add half as much again


7
Note how the glue pearls swell up and become jelly-like


8
The freshly made glue should be fairly thin and runny to be useable

9 For general application a mop-type brush is best. The real natural-hair sort are expensive, but I bought several packs of different size artificial bristle mops intended for chalk paint at my local discount supermarket. Small areas can be glued using smaller brushes or an injector if you are trying to repair joints without breaking them open.

10 Your glue compound will start off runny, but the more times you heat it the thicker and more gel-like it will become, so add water occasionally to regain a lower viscosity. When brushes or applicators need to be cleaned, use hot water to soften the glue and work them thoroughly until free of any glue. You will find the glue

A bag of pearl glue, an artificial mop brush and water are the simple ingredients

in your pot will go really stiff when cold, but heat will re-soften it. Don't leave it in the pot unused for too long as it can 'go off' and stink terribly – especially in a cold, damp workshop.

When the glue is cold it becomes a solidified gel lump, but heat melts it again

THINGS YOU CAN DO WITH GLUE

Already mentioned are joint repairs. The glue needs to be quite thin with low viscosity or you won't be able to use it in a glue injector with a tiny nozzle. Drill an access hole to pump the glue in while it is still warm enough to be runny.

Repairs on antique furniture are natural as they were put together with similar glue originally and therefore won't conflict, whereas modern glue can cause problems mixing with old hide glue. Everything from veneers to inlays and joints can all be dealt with. Care in application is helpful, otherwise you will spend quite a time scrubbing off excess glue with hot water. It isn't good practice to contaminate surfaces unnecessarily with glue.

Veneering whole panels with animal glue deserves an article all on its own, but suffice it to say that, with good preparation, choosing and cutting the veneer first and damping it, laying it on a quickly applied layer of glue on the groundwork, then using a veneer hammer to rub it down, you get a result. The great thing is that if it doesn't take completely you can then use a hot iron to press down any bumps in the veneer.

So there you have it, a much under-appreciated adhesive that is a lot simpler to use than you might think. ■


Holding a drawer slip while the glue sets. Hot water will remove any excess


Ironing a veneer after laying to remove any bumps and cockling

PHOTOGRAPH BY LOUISE BIGGS


A glue-filled injector can work again if it is placed in hot water first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Woodland ways

Champion trees

PHOTOGRAPHS BY GARY MARSHALL UNLESS OTHERWISE STATED

Gary and friends at Sheffield Park

To Gary Marshall every tree is a champion, but some are more so than others

Trees are always changing. As in sport, one record is often quickly superseded by another. So when reading this article bear in mind there may be other up-to-the-minute record breakers out there. The information here is the most up to date I could find in a hurry, and comes from many sources, including the Tree Register, Monumental Trees, Wikipedia and – perhaps less reliably – my memory.

A champion tree can be the tallest, oldest, largest spread, thickest girth of its kind – in the world, in a country or district, even down to your local parish or park. Here I'm mainly dealing with the tallest.

Although we have some pretty amazing trees in the British Isles, they are considerably dwarfed by many North American and Australian trees. Our tallest tree in 2014 was a Douglas fir (*Pseudotsuga menziesii*) in Reelig Glen near Inverness and then stood at 66.4m (217.10ft). Currently the tallest tree in the world is a coast redwood (*Sequoia sempervirens*), discovered to be the tallest in 2006, named Hyperion, standing at 115.92m (380.3ft) tall and situated in the Redwood National Park, California US. Other trees that have been discovered to be more than 300 feet tall are shown in the table opposite.

SPECIES	M	FT	NAME	LOCATION
Mountain ash *(Eucalyptus regnans)*	99.82	327.5	Centurion	Arve Valley, Tasmania, Australia
Coast Douglas-fir *(Pseudotsuga menziesii var. menziesii)*	99.7	327	Doerner Fir	Brummit Creek, Coos County, Oregon, United States
Sitka spruce *(Picea sitchensis)*	96.7	317		Prairie Creek Redwoods State Park, California, United States
Giant sequoia *(Sequoiadendron giganteum)*	95.7	314		Sequoia National Forest, California, United States
Yellow meranti *(Shorea faguetiana)*	93.0	305.1		Danum Valley Conservation Area, in Sabah on the island of Borneo

The Crowhurst Yew

A rare champion juniper at Borde Hill

My fascination with champion trees comes from several sources dating back to childhood. I was a keen fan of the *Guinness Book of Records*. I remember one edition had a separate section and chart of the biggest trees in the world and in the British Isles. I badgered my dad to take me to Bedgebury Pinetum in Kent where some of these champions grow. We also lived near to two remarkable old yew trees – the Crowhurst Yew and the Tandridge Yew, both in rural Surrey.

I remember that the tallest tree recorded back in the 1960s was a silver fir (*Abies alba*) that topped 42.6m (140ft) high. Now we have the Douglas fir mentioned above at over 61m(200ft). Is this due to better and more frequent measuring – or are our tallest trees getting taller?

Since the first redwoods from North America were only brought to Britain by William Lobb in 1853, we can expect many more record breaking trees in years to come since redwoods grow vigorously for many centuries.

The National Trust gardens in Bodnant nr Colwyn Bay in North Wales claim the tallest at 49m (161ft). Scotland is home to our four tallest trees. One, only 50m (164ft) from our tallest Douglas fir, was a previous record holder and is known as the Big Dark Stranger.

Woodland ways articles regularly champion our native species. Imagine my delight, when researching this article, to discover that our tallest native tree, discovered in 2015, grows fewer than 15 miles away on the National Trust's land at Newtimber Hill. It's a magnificent beech (*Fagus sylvatica*). It grows on a very steep, wooded scarp slope of the South Downs and, since it is among other tall beeches, it's tricky to find.

One thing I have found is that it's difficult to photograph tall trees when they're in a wood. You can nearly always see champion trees at your nearest show gardens or arboretum. Just some that come to mind are: Sheffield Park, East Sussex; Dunkeld, Perth and Kinross, Powys Castle in Wales; Tullynally Castle, Co. Westmeath, Eire; Florence Court, Co. Fermanagh; Westonbirt Arboretum in Gloucestershire. ■

For more information go to: **www.treeregister.org**

The tallest beech in Britain

Looking down from Centurion

The world's tallest tree, Hyperion

Kidney-shaped table restoration

Even the most ordinary of furniture can be a 'puzzlement' as the Editor discovered

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Every time I get handed a piece of furniture to bring back to life, it seems quite simple to do but… this little table had been in my wife's family for many years – not spectacular, rather old-fashioned in style – but as usual there was a bit of detective work involved.

Damaged goods

The finish was worn out. It had been fudged over with some streaky brown muck, odd bits of knife-cut veneer around the vulnerable edges had torn off and the legs were wobbly. It had the obligatory dark ring marks on the top, which spoke of its misuse over time.

A puzzlement

Turning it upside down the thick laminations of the kidney curves were visible, as was the aged hide glue around the leg support blocks, one of which was missing. In the middle was the 'two cheeses' symbol of the Commodities Committee 1941, which denoted it as a piece of 'Utility' furniture from World War II, which the family always accepted it to be. Except it couldn't be – why? It wasn't straight and square, it didn't eschew curves, Queen Anne legs in particular. It ran counter to the aims and objectives of the Committee, which was charged with bringing good-quality, economically produced new furniture, strictly rationed, to those who really needed it – to the newlywed and the bombed-out among the population – while also educating people about the need for good, modern taste. Unfortunately, neither the press nor the populace at the time that Utility furniture and household goods were introduced were enamoured of this brave new world of the straight, square and spare, even if it did save on precious timber and be of exemplary good design.

In a state, at the start of repairs

CC41 identification

So this funny little side table didn't make sense. The manufacturer whose identification label hasn't told me much, had taken the trouble to avoid masking the CC41 stamp – interesting… I decided to invest in a small hardback book, *Utility Furniture* by Jon Mills, Sabrestorm Publishing (price £9.99, www.sabrestorm.com). It is very informative and features a facsimile of the wartime Utility Catalogue. The answer to my 'puzzlement' lay on page 14: 'In June 1948 furniture rationing ended, although furniture makers could continue making CC41 Utility-marked furniture of their own design as evidence of quality of workmanship. Many did so until the Utility Furniture Scheme ended in 1952.' So, that was it. Whoever made it simply produced what most people craved after such austerity – back to the traditional and out with the square, in a postwar four-year time slot.

1 The ‘two cheeses’ symbol and the manufacturer’s own serial mark.

2 The missing leg bracket was quickly replaced and coloured to match.

3 Gaps in the laminated kidney-shaped frame had slips of veneer and glue added for strength and then trimmed flush.

4 Rather than attempting a series of angled cuts, a straight line was felt better with the rule clamped to fit the concave shape.

5 Now the ragged veneer could be carefully pared away back to the groundwork.

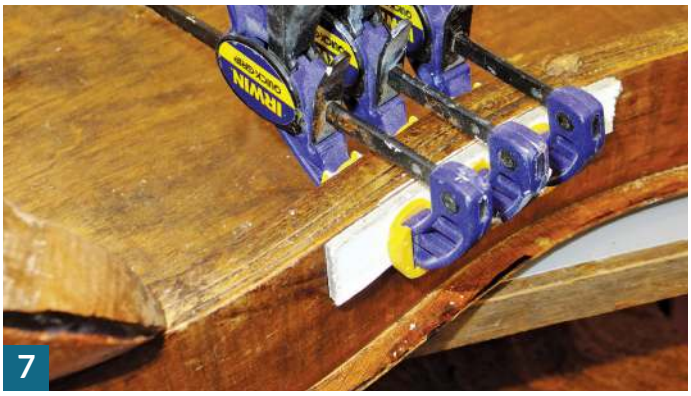
6 A check to make sure the new piece would fit, colouring in be done later on.

7 A piece of uPVC made a good flexible, non-stick clamping pad.

8 Even small broken edge pieces needed replacement with veneer, not filler.

9 A broken foot which was block planed level while still attached to the table.

10 A new piece of beech was marked around to get a rough profile. ➤



11 After rough shaping in the other plane it was glued and clamped in place.

12 It became apparent that the leg would have to be removed for shaping.

13 The new beech was incredibly hard, so it was easiest to shape on the disc sander.

14 The internal shaping was done with coarse abrasive bonded to a piece of plastic waste pipe.

15 This was followed by fine-grade foam-backed abrasives to sympathetically blend the repair.

16 A colour test to make sure the colour could be matched properly where the repair met the leg.

17 All the legs had their screws tightened but one needed its bracket glued. CA adhesive was the easiest method.

18 The many veneer repairs could now be sanded in, using finer-grade abrasives.

19 It was impossible to level this repair without removing the finish around it.

20 Now was the time to remove the gunky over-French polishing using spirit thinners. ➤


21


22

21 The very uneven top finish was rubbed back lightly with 320 grit to retain 'character'.

22 A coat of pale French polish all over helped to highlight the state of the existing finish.

23 What you shouldn't do – I used a dark coloured Danish oil over French polish to give a richer appearance, but it stayed in place.


23


24

24 Next garnet polish was applied with an artificial hair mop where there were lighter areas.

25 Acrylic paint was used sparingly to touch out filler and veil over veneer repairs.

26 Areas such as these fine bits of damage right on the edge that would be tricky to veneer.


25


26

27 Veiling paintwork to try to 'lose' the cross-grain join in the veneer before finishing work.

28 Now several coats of garnet polish were applied all over, with special attention to the top.

29 Once the garnet polish had hardened, the whole table was rubbed over with '0000' wirewool and waxed.

30 Finally, how this 'postwar hangover' of a side table should look. ■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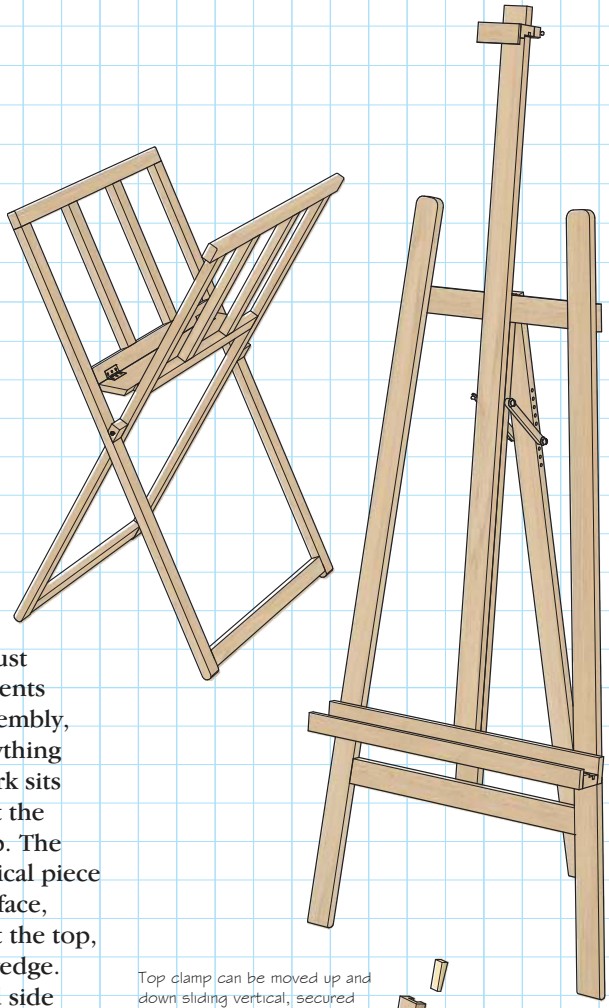
PLANS 4 YOU

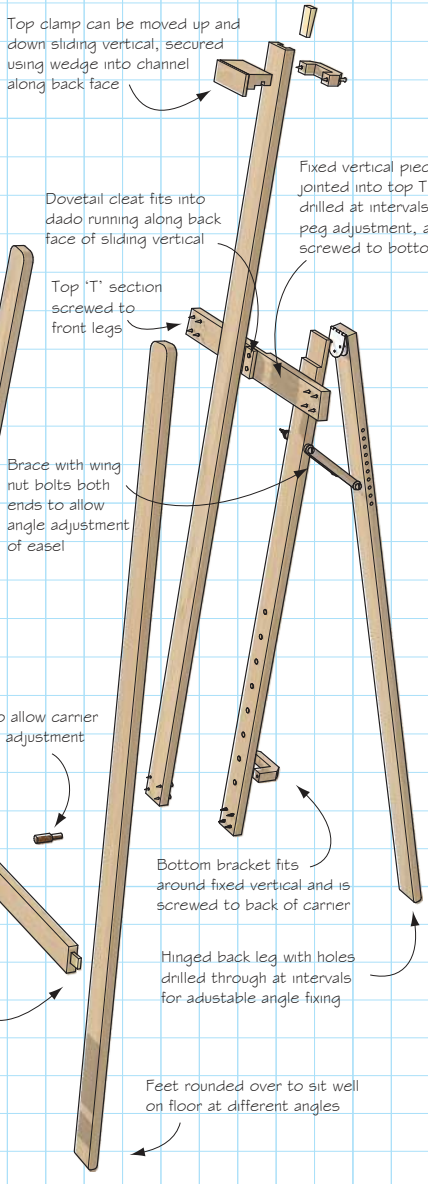
Artist's easel & print stand

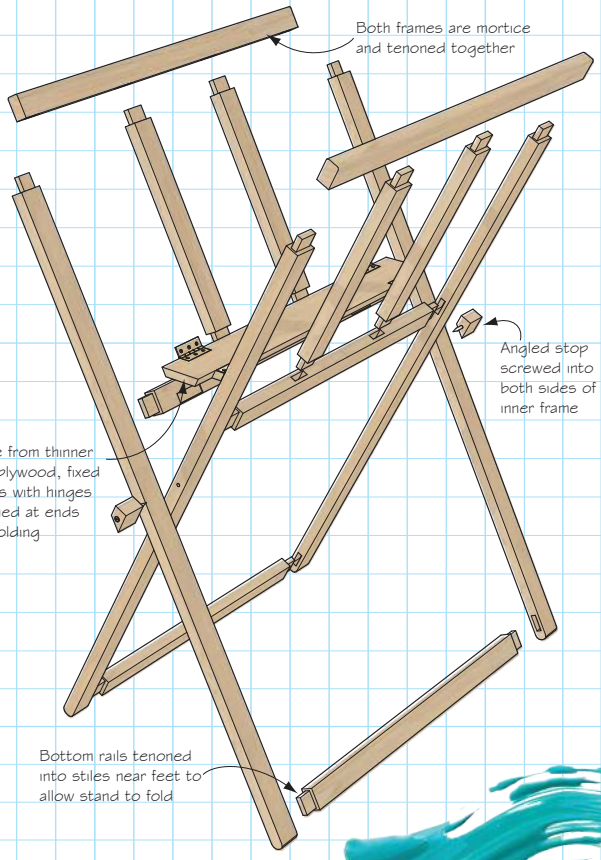
We are very drawn to 'old master' Simon Rodway's latest designs

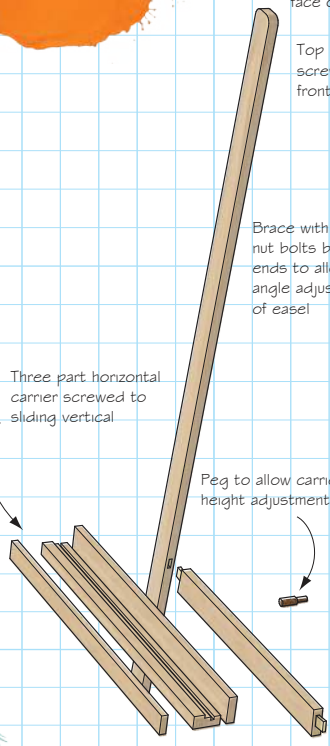
The beauty of making things yourself, apart from the satisfaction of seeing the finished object, is that you can often vary sizes to fit your purpose, and this month's projects are no exception. The easel should provide enough flexibility to fit most canvas sizes, but the print stand could easily be scaled up or down to suit.

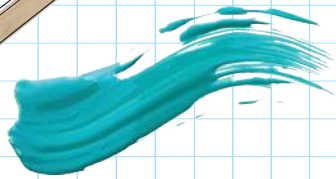
The easel construction can essentially be divided into three parts: the front structure, which carries the artwork itself; a sub-frame, which sits just behind and allows for adjustments in height; and the back leg assembly, which is needed to make everything stand up. The canvas or artwork sits between a horizontal carrier at the bottom, and a clamp at the top. The carrier has a long, sliding, vertical piece screwed through into its back face, with the clamp sliding freely at the top, secured in place by a timber wedge. The sliding vertical, the angled side legs and the bottom brace all sit in the











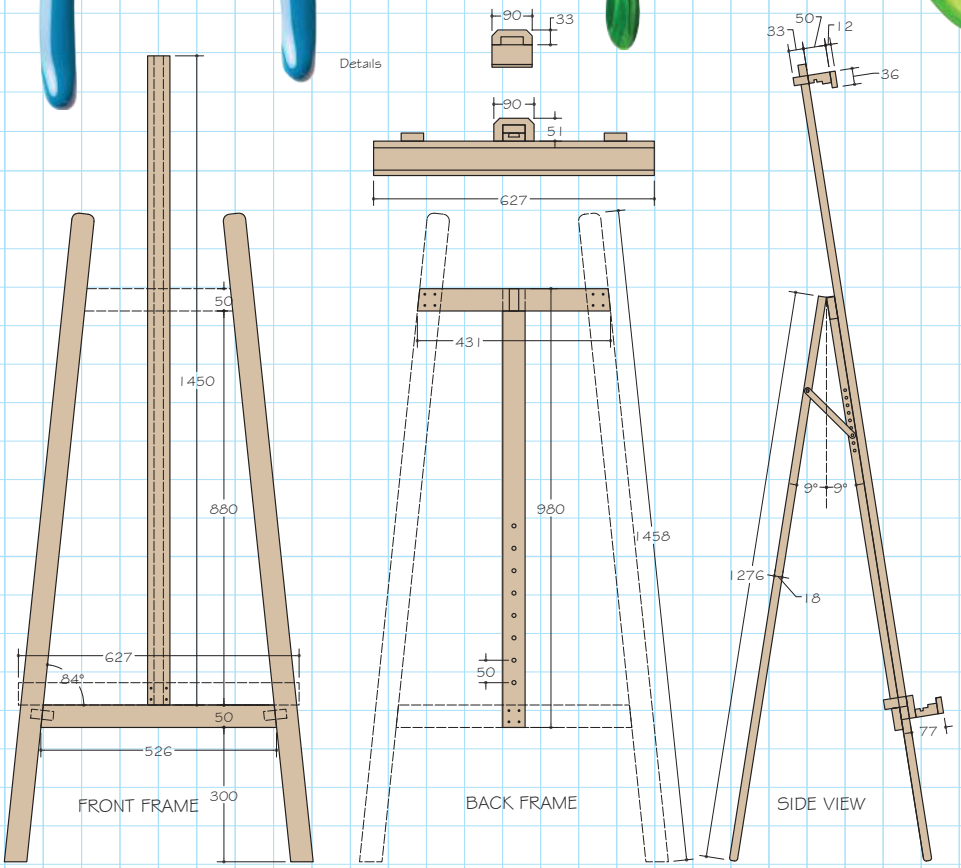
Cutting list

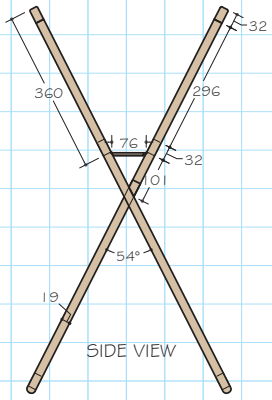
Artist's easel

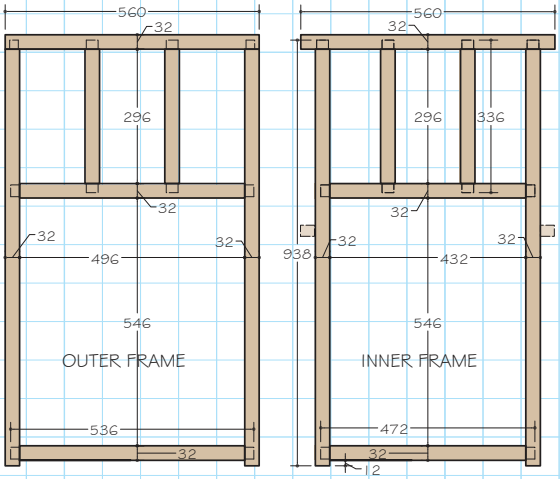
Front legs	2 @ 1450 x 50 x 18
Back leg	2 @ 1276 x 50 x 18
Sliding vertical	1 @ 1450 x 50 x 18
Bottom brace	1 @ 526 x 50 x 18
Top brace	1 @ 431 x 50 x 18
Back upright	1 @ 980 x 50 x 18
Carrier	1 @ 627 x 36 x 12
Carrier	1 @ 627 x 50 x 22
Carrier	1 @ 627 x 50 x 12
Clamp	1 @ 90 x 36 x 12
Clamp	1 @ 90 x 50 x 22
Bracket	1 @ 90 x 33 x 22
Bracket	1 @ 90 x 51 x 22
Wedge and peg	To fit

Print stand

Stiles	4 @ 938 x 32 x 19
Top rails	2 @ 560 x 32 x 19
Mid/bottom rails	2 @ 536 x 32 x 19
Mid/bottom rails	2 @ 472 x 32 x 19
Muntins	4 @ 336 x 32 x 19
Print bottom/support	1 @ 496 x 76 x 9







same plane. Behind these, a T-shaped frame sits, with the horizontal top brace screwed to the back faces of the legs, and the vertical part of the T half-lapped at the top and screwed into the back face of the bottom brace. At the top of the T, at the junction, a small dovetailed piece is screwed to the front face, and this fits inside a dovetail housing which runs the length of the long vertical, stopping it from flopping forwards. Two U-shaped brackets secure the clamp and the horizontal carrier, the top bracket being 18mm shallower as it only surrounds a single vertical, whereas the bottom bracket has to go around the fixed and sliding vertical pieces. Both are screwed into the back faces of the clamp and carrier respectively.

The bottom cross brace is fixed to the angled legs using dominos or loose tongues. The front and back legs are all rounded over at the feet to allow the easel to sit better on the ground. The vertical part of the back or T frame has holes drilled at regular intervals to allow a large peg to be inserted from the front to adjust the height of the carrier. Holes are also drilled at intervals in the sides of the back leg and at a single point in the T frame vertical and an adjustable brace with bolts at both ends is fitted here, located to suit. The back leg is fixed to the T at the top with a large hinge which allows the angle of the easel to be adjusted.

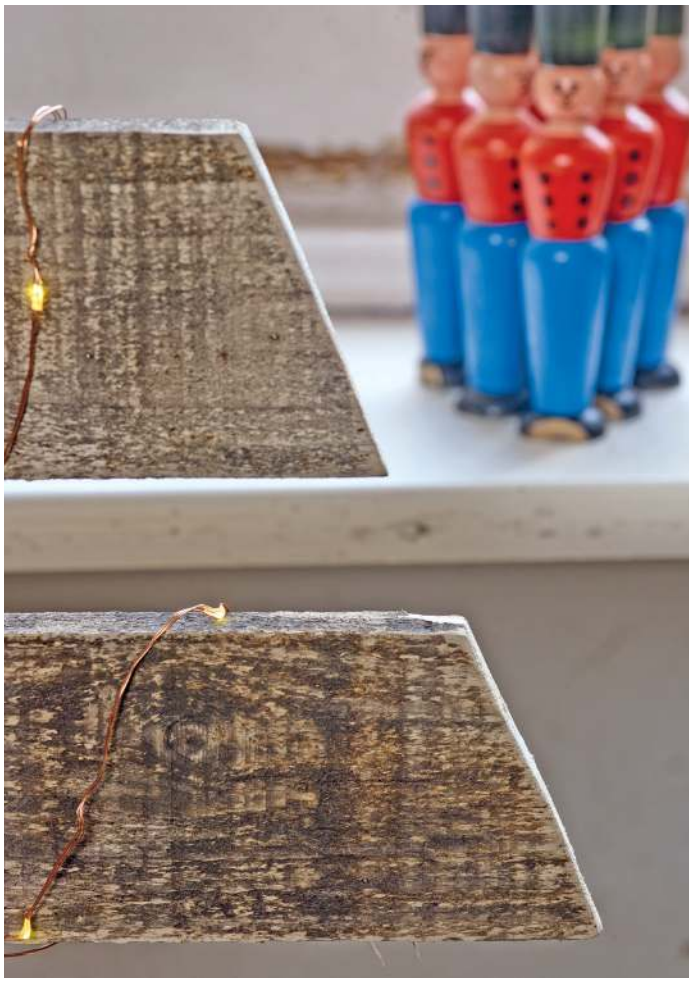
The print stand is a very simple construction, with almost identical frames, one inside the other and joined by the print support or bottom piece by hinges on both sides. The frames are both mortise and tenon construction. The only tricky part is making sure the inner frame will slide out between the stiles of the outer and clear the bottom rail,to allow it to be stored flat, so try this out before finally fixing the print support, which can be varied slightly in width and thickness to suit. Small cutouts are required at the ends of the print support where it passes over the stiles of the inner frame, to allow clearance as the stand is folded. Additionally, a small cleat or stop with one face angled is fixed on the outside face of the stiles of the inner frame, to brace the legs and prevent them spreading. For heavier loads, additional stops immediately below these on the outer frame will give greater strength. ■

Festive tree

You will need

- 1 x pallet (any type)
- Ruler or tape measure
- Pencil
- Handsaw or jigsaw
- Hammer
- Sander and sandpaper (120 grit)
- Drill
- 1¼in (30mm) wood screws
- Fairy lights (optional)

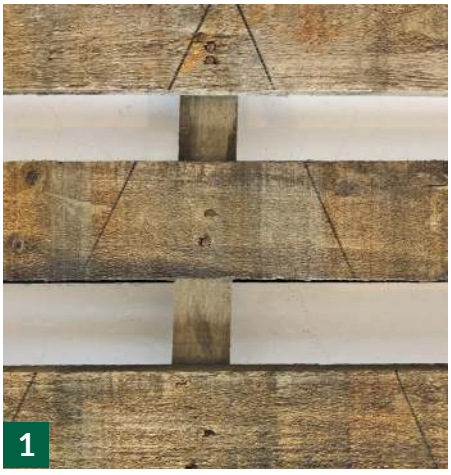
Rather than chopping down a fir tree to use for a single season, why not make a sustainable pallet tree that you can use time and again? Adorn it with lights, hang baubles from it or keep it simple. Whichever way, this tree adds a touch of Nordic style to the festive season



1 Take a pallet and lay it down on an even surface. With a ruler and a pencil mark the top of your tree in the middle of the support post that will hold your tree together (acting as the trunk). Mark two points at the bottom of the pallet to the far left and right. Draw your two cut lines from the centre point outwards to the two points, giving you a triangular tree shape.

2 With a jigsaw or hand saw, cut along the lines through the pallet slats. If there are any slats attached to the rear of the support post, knock them off with a hammer.

3 You should now have a tree shape. Remove the bottom plank to create the base of the tree. You will attach the stand to this in the next step. Sand the tree down so that all the edges are smooth. ➤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4 Cut two pieces of the excess planks to around 12in (30cm) in length, sand them down and, using your drill and 1¼in (30mm) wood screws, attach them either side of the bottom of the tree to the support post. Your tree should now stand up.

5 The final step, if you choose to do so, is to dress the tree with fairy lights. I used copper wire fairy lights here, as the wire is discreet and keeps the tree looking clean and simple.


4


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Coming next month in
Woodworking CRAFTS

ISSUE 48 ON SALE 20 DEC

PHOTOGRAPH BY MICHAEL T COLLINS

Make your own marking gauge

PHOTOGRAPH BY FRED & JULIE BYRNE

- Scrollsawn maple leaf trivets
- Learn to carve linenfold panels
- Make a magazine rack

PHOTOGRAPH BY GMC/ANTHONY BAILEY

PLUS: *The Editor plays furniture detective to uncover the truth about his latest restoration project...*

KITTED OUT

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

GSR 12V-15 FC Flexi Click drill driver
RRP £137.90 inc. VAT

GHO 12V-20 cordless planer
RRP £360.67 inc. VAT

GKF 12V-8 cordless edge router
RRP £137.47 inc. VAT

The Bosch Professional 12v cordless tools

Music to the ears of instrument maker Leo Binetti

Leo Binetti's universe revolves around restoring, repairing and replicating antique string instruments – lutes, mandolins and guitars. Since his youth, the instrument maker from the city of Prato in Tuscany has been pursuing a dream to devote himself to this traditional craft. He first attended a vocational school, enabling him to open his own workshop afterwards. 'What I like about my job is the manual element. I have the chance to create something with my own hands,' Leo says.

'I love to work with a material as wonderful as wood, and to see an object grow from it that has a sound, a soul.' However, Leo does not see practising this ancient craft as a reason for only using traditional tools. He uses cordless tools, which enable him to meet his high standards for precision, speed and efficiency. 'When I choose a power tool, it needs to be precise because precision is essential in a craft such as mine.'

The tools

It takes one to two months and different work steps to build an instrument such as a guitar, mandolin or lute. Leo completes this process using Bosch Professional tools: the GSR 12V-15 FC Professional FlexiClick drill driver, GHO 12V-20 Professional cordless planer and GKF 12V-8 Professional cordless edge router. All three tools use high-performance 12 volt lithium-ion batteries, choosing from seven different battery sizes from 1.5 to 6.0Ah depending on the application, the 'flexible power system' means they are compatible with all Bosch tools and chargers in this voltage class.

The GSR 12V-15 FC Professional FlexiClick drill driver is the shortest cordless drill/driver in its class, designed for precision work in tight spaces with four adapters, a lockable bit holder plus a drill chuck, offset angle and angle screw adapter. Leo uses it for screwing the instrument's body together, securing the neck, winding up the strings. 'The different adapters make every work step easier, from fine work such as fitting the tuning pegs through to tensioning the strings, even in areas that are hard to reach.'

The GHO 12V-20 Professional cordless planer and the GKF 12V-8 Professional cordless edge router are in constant use in Leo's workshop. The cordless planer is needed for rounding the neck of the instrument. Its weight and size are comparable to a traditional hand-held planer. He also uses the cordless edge router to fashion the sound box. The edge router has a particularly narrow handle, meaning it can be easily controlled with one hand. From the first rough milling mark to the tiniest final details, Leo's work is effortless as he follows the instrument's curved lines with ease. 'These tools enable me to be extremely precise. And that is what my craft is all about,' so says instrument maker Leo Binetti.

Leo Binetti, instrument maker
www.leobinetti.com
Bosch Powertools
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Dremel 4300

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Kitchen chair repair

PHOTOGRAPHS BY LOUISE BIGGS

A tricky repair on an everyday chair for Louise Biggs

Having purchased a set of four secondhand pine kitchen chairs, the customer approached me to sort out the one chair which had some problems. The legs and stretchers were all loose and some screws had been fitted by the previous owners through the seat and one back leg to try to stabilise the chair. The four legs had also been re-glued with something (again by the previous owners). Both attempts had failed.

Assessment

The first thing that became evident was that one back leg was not loose but broken. This was the leg where the screw had been fitted through the seat, but it had a ragged break level with the underside of the seat.

The chair with its loose legs and stretchers and previous repairs

Legs removed and the broken leg evident

Stages of restoration

1 Having labelled the sections and knocked apart all the joints using a rubber mallet, the next stage was to clean up the turned sections and the holes into which they fitted. The 'glue' had been spread around each hole and up the turned sections. The holes in the seat seemed as good a place to start as any and quickly revealed, by the smell, that the grey stuff was not glue but car body filler.

2 I have seen car body filler used before on so called restorations and I can only advise that old tools are used if available, as it seriously damages the edges of chisels etc. The other problem is that it gets into the grain of the wood – whether it is an open-grained timber or not – and, once in, is difficult to clean out completely. For cleaning out the holes I used an old carving chisel, which is kept for this purpose.

3 Having cleaned out all the holes, the ends of the turned sections were cleaned off using a chisel. Next the screw hole through the leg was drilled out in order to take the full depth of a pine plug. The plugs were cut using a plug cutter set up in the pillar drill. The screw hole through the seat was treated in the same way. Suitable pieces of pine were used so that the grain pattern lined up as closely as possible.

4 The top of the broken leg was cut across square using a dovetail saw, just below the ragged break, to create a clean, flat surface to join the new section to. Allowing for the shape of the leg, a Forstner bit was used in an electric drill to drill a 20mm hole down the centre of the leg. The hole needed to be as deep as possible, the diameter had to be large enough while leaving enough of the leg timber to prevent the new section breaking out the sides. The aim was to create a strong joint that will take the punishment dealt to a chair leg.

5 A section of pine was mounted on the lathe between a steb centre drive and a revolving centre in the tailstock. With the toolrest set just below the centreline the pine was turned down to a spindle using a spindle roughing gouge, rubbing the bevel to support the tool.

6 The length of the dowel to go within the leg was marked and


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cut just to the right of the line. The Verniers were set to the required diameter from the fortsner bit which had been used, the corners of the jaws having been rounded off to prevent them catching. Holding the Verniers against the timber and with the parting tool's bevel rubbing on the timber, the diameter of the dowel was reduced. If at any time you do not feel happy using a tool and Verniers together, stop the lathe and then measure the turning.

7 A similar cut was placed at the end of the timber using the same tool. This gave a depth guide either end then the timber in the centre was reduced using the spindle roughing gouge until a straight dowel was formed which would fit into the leg.

8 The Verniers were then set to the diameter of the leg and an allowance made so the new leg end would be slightly larger than required. This was due to the leg being slightly bowed and the final shaping would be done by hand as opposed to mounting the whole leg on the lathe to re-shape the end. As before, the length of the new section was marked. This left enough of the timber to be supported by the steb centre drive. ➤

9 As with the peg a depth guide was cut to the right of the line and to the left of the dowel. The same beading/parting tool was used in combination with the Verniers set in the previous stage.

10 Using the spindle roughing gouge the timber between the two depth marks was reduced until a straight section was achieved. This left the turning looking like it had three sections, but the one nearest the headstock would be removed later.

11 While the section still had the registration marks of the steb and revolving centres the timber was removed and the dowel test-fitted into the leg. At this point the fit was a little tight and it was decided to reduce the dowel slightly to prevent the leg splitting when the piece was glued and clamped into the leg. The timber was remounted on to the lathe and the peg section reduced slightly.

12 The thicker end used for the steb drive was removed and some grooves were cut along the dowel using the corners of a chisel. This would help any air trapped down the hole to be expelled as the dowel was glued. A sash clamp was used to push the new leg end firmly into the leg.

13 Once dry the end of the new leg was gradually reduced in size, using a spokeshave, until the joint line was blended in with the shape of the leg while keeping the end of the leg straight.

14 The leg was test-fitted into the chair seat throughout the shaping process to ensure a tight fit while allowing for the glue. Once again the corner of a chisel was used to cut grooves along the end section to allow air to be expelled. This can also help to give a better keyed surface for the glue.

15 With the leg fitting as required, the stretchers and legs were glued up in one go. Sash cramps were used to pull the side stretchers up tight, while the legs were hammered into the seat using a rubber mallet. Once dry the chair was checked to make sure the legs were level – happily this time they were. An explanation by the Editor for this process can be found in issue 45, page 54.


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16 The customer had explained that they were going to paint the chairs to give them a more modern look. I still stained and finished the repairs, just so they were not so obvious and because I felt better about sending the job out completed. ■


16

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Ask the experts

ANTHONY BAILEY
Editor,
Woodworking Crafts magazine

Another batch of awkward questions for the Editor to answer

HOOKED ON ABRASIVES

I recently converted my 300mm static disc sander to hook-and-loop abrasives, which seemed like a great idea because it should be a quick, non-messy changeover of discs. Unfortunately, it is really tiresome trying to mount or remove a disc because the two parts stick together so easily. It wouldn't be a problem if the tilting sanding table wasn't fixed in place but that keeps the disc and the platen in too close a contact to separate them easily. Any handy tips please?

Jenny Halton

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Anthony replies: Velcro and the other hook-and-loop products are amazing but they can have a downside because they do exactly what is intended and stick together very easily – often when you don't want them to. You have no doubt tried sliding something between to separate them, but this is how I deal with the problem.

1 First of all, tilt the table down to make the job easier. Use something like a slim steel rule to separate the disc down to halfway.

2 Now push the replacement disc right down behind the existing disc – importantly with the new disc facing backwards so it cannot stick to the hook surface on the platen. Remove the old disc as well as the new one.

3 Now switch the discs around so the old one is facing backwards. Grip the edge of the new one and withdraw the old one so the new disc is now connected to the hook surface. Press it down firmly all over.

4 Make sure the table surface is set correctly at 90°, unless you are doing bevel sanding. In use you may find the surface can compress slightly compared to stick-on discs, but I haven't found it to be problem creating flat surfaces on a workpiece.

5 Before you do ditch a clogged disc, it is always worth using an abrasive cleaner, or even a piece of hosepipe, to remove the stuck-on wood dust.

To the left a small reservoir without an overflow and to the right, beyond the banking and spillway channel, a mixed stand of trees, mainly eucalyptus planting

A QUESTION OF SPECIES

This is a bit of an odd question but maybe you can shed some light on it. We often go for long walks and have taken to walking around reservoirs because of the views, the countryside and the wildlife. I've noticed that there are often what seem to be deliberately planted eucalyptus trees around some reservoirs. Is there a reason why they have been chosen?

Ben Newman

Anthony replies: I've tried researching this and not yet got a definitive answer. It really needs to come from a water company or whoever designed the reservoir scheme. However, what we can say is that eucalyptus is the common name for a genus of a vast family of hundreds of tree species. They have very different characteristics and are not easy to work with as a timber, but they use water in a more extreme way than other types of tree. The trunk can act like a water tank and soak up enormous quantities of water and, during drought conditions, will shed leaves to conserve whatever water it is holding. Planted near a reservoir or in a marshy area they would control the amount of ground water and cope with any unexpected deluge, while stabilising the soil. So they are probably planted to help cope with unexpected conditions such as 'over-topping' if a reservoir doesn't have an overflow outfall, and to keep the earth banking from collapsing after heavy downpours and help cope if the river supplying the reservoir breaks its banks. I will probably look at the eucalyptus in a future *Trees for life* article as it is such an unusual tree.

THE GLOVES ARE ON

I'm not so young anymore but still love doing woodworking. With the winter coming on it can be a bit cold in the workshop and my fingers suffer. Are there suitable gloves that you can use to still do fine work, rather than the thick construction gloves that are sold everywhere?

Den Harkness

Anthony replies: A cold workshop isn't pleasant for anyone, but circulation problems make it worse. There are thinner, fingerless gloves available, but often from industrial suppliers rather than high street shops. What you can do is find a lightweight pair of stretch-fitting gloves, such as the one in the photo, which is a gardening glove. They need to be partially rubberised on the palm and undersides of the fingers, then you can cut off the tips of the thumb and first two fingers as these are the ones that do the work. Being rubberised prevents the glove material unravelling. You will find you still have good dexterity and no risk of gloved fingers catching on screws while using a cordless drill (I've had that problem with theatre setbuilding) and you can still use a phone or tablet device.

STAR QUESTION PRIZE

The Tool Marketing Company, or TOMACO, as it is known, which sells a variety of tool brands, including COLT, Sharp Edge and Narex Tools, is pleased to be sponsoring the Ask the Experts section in collaboration with GMC Publications. Each issue's Star Question prize-winner will receive a Narex six-piece chisel set worth £79.95 and all other published questions will receive a 20mm half-round fine cut Narex rasp worth £20.95. For more information see **www.tomaco.co.uk**

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

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Tricks *of the* trade...

Neat skirting

Perfect cuts every time, no excuses.
By Nigel Neill

When doing second fix joinery I always came across the same occurring problem. The architrave leg was slightly off plumb or the floor was not level, meaning when finishing skirting boards up to an architrave there was mostly a discrepancy of the joint. However, this simple jig that I made on site enables fast, accurate working and, most importantly, time is saved travelling back and forth to the chopsaw making alterations.

1 The way I was taught was to allow the skirting to run past the architrave an inch or two, then mark the top edge where is meets the architrave. Once this was achieved it was a simple action of cutting to the line.

2 Unfortunately this is what frequently occurs when the architrave leg isn't plumb or the floor is off level. At this point it would take a few attempts to scribe the skirting board to the architrave to make a neat joint. Using this simple jig will eliminate any unnecessary work.

3 Just as before, run the skirting past the architrave. Place the slotted section of the jig over the skirting and up tight against the architrave.

4 This will transfer the true angle of the architrave on to the front edge of the skirting and all that's needs to be done is draw the pencil line.

5 The end result is an accurate way to transfer a mark which will leave a tight, neat-fitted joint. This form of jig can be altered to suit different heights and thickness of skirting and will always give fantastic results. ■


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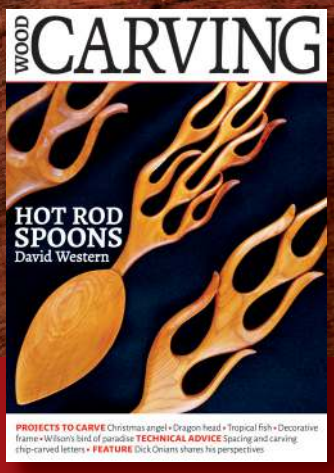

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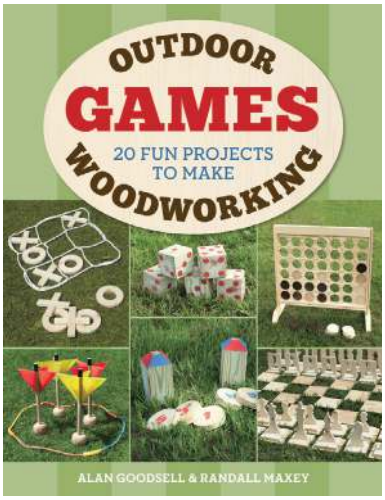

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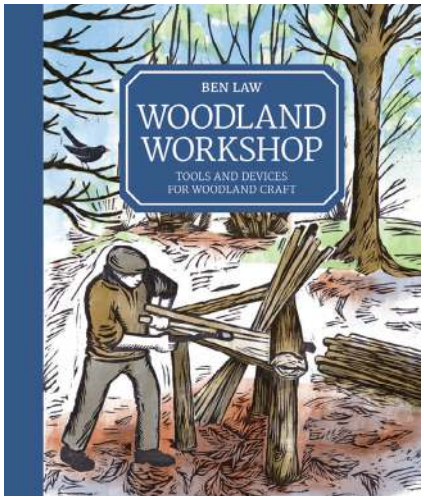

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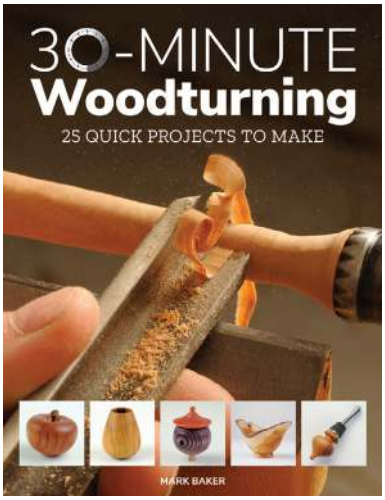

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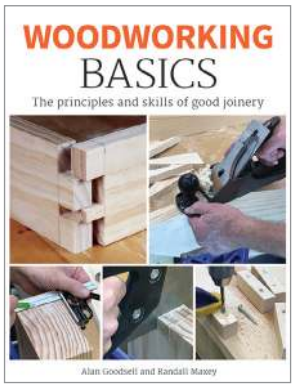

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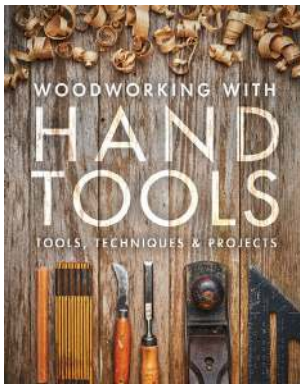

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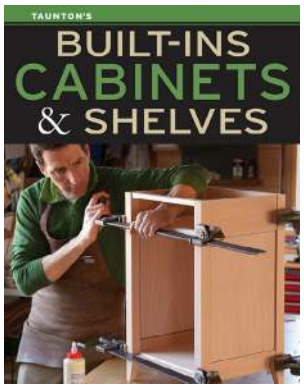

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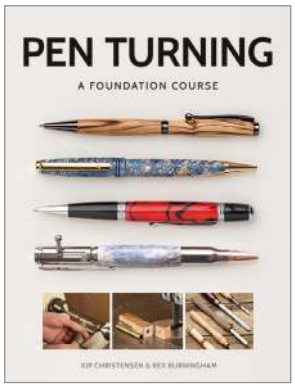

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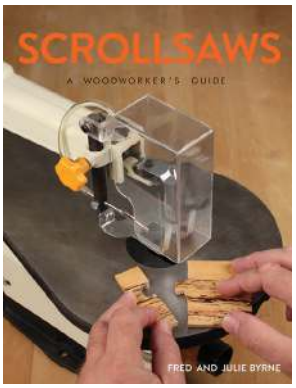

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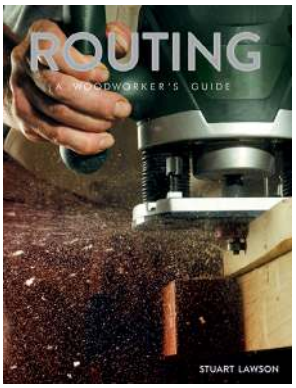

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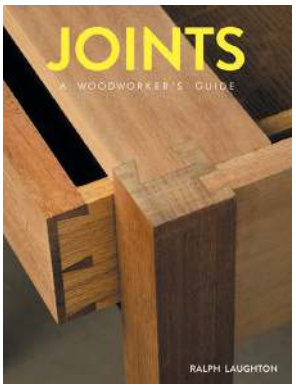

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Focus on…

Railway homes

PHOTOGRAPH BY GEOGRAPH/DAVID SEALE

Having a holiday in a railway carriage seems rather appealing and nostalgic – but there are those who live in them as their permanent home

The early railways developed remarkably quickly and, as main lines between major centres were built by rival companies, it led to a hotch-potch of loco, carriage and wagon types. As the 20th century dawned older rolling stock was already being replaced with more modern designs to suit the ever-burgeoning railway network. Old carriages were an obvious choice for domestic conversion and, in some cases, were offered to soldiers returning from conflict who didn't have a home to go to. Others were kept as static holiday homes on station sidings while many were bought with the intention of turning them into permanent residences. These were often incorporated into larger structures to make them more desirable while retaining their essential features such as doors and light fittings.

They were taken up by people with money who wanted a holiday or permanent home, invariably close to the coast, undisturbed and with great sea views beyond. To move the carriages into their final resting place meant removing them from the bogies or axles beneath and sliding them on old railways sleepers until they came to the chosen resting place. Often they were too far from where they would be taken, in which case transport would be by a team of horses and drogue trailers where the trailer axles sat under each end of the coach joined together by a pole, ready for a precarious journey especially if they had to negotiate shingle beaches.

Today most of these railway homes still exist despite tightening of planning laws, although they are usually heavily clad inside a weatherproof skin to protect the ageing wooden structure. When a home has to be demolished, there is usually a preservation railway keen to retrieve and restore one of these venerable carriages and put it back into service after spending so long as someone's home.

The south coast has a preponderance of these beached vehicles. Shoreham-by-Sea's Pantomime Row, named by the stage comedian who built the development, and those at nearby Lancing have long gone, but Dungeness, Selsey and Pagham are home to these exclusive properties. They can also be found in Lincolnshire and elsewhere.

You can go coach spotting but it's not always easy. However these photographs give an idea of what to look out for. Do respect owners' privacy though. ■

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