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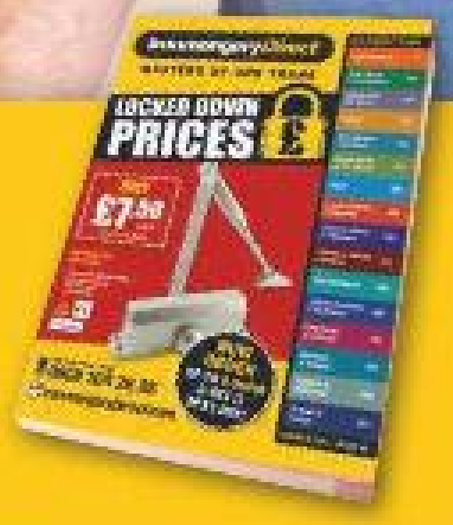

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welcome

Chatting to other philosophers over an evening drink or two, I've come to realise that it's variety in all things which really increases one's enjoyment of the simple pleasures in life. Although we all appreciate the homeliness and convenience of our own workshops, any jobbing carpenter will tell you it's the unexpected challenges of site work that can make it so enjoyable (some cynics might say endurable) and can provide the laughs and later tales that sustain us all through the quiet or difficult times. Despite the hardships involved (wet weather included), travelling to different places, meeting new people and pitting your skills against unforeseen problems can really lift the spirits, especially when you pull off a tough job with limited resources under difficult conditions.

A parallel existence

The last week or two have been pretty busy in my non-magazine working life. I'm currently making some furniture for a music room, the centrepiece of which is a chest of drawers for storing sheet music. As these drawers number 30 in total, much of my time has been spent in machining repeat components, and I can tell you now that there are quite a few involved. If you'd like to hazard a guess at how many – including the spares – there may be a *Woodworker* badge in it for you!

Meanwhile, my joinery class at college provides yet more variety and, as I write, it's nearing the end of its final term. The last couple of weeks has seen a marked feeling of panic in the workshop amongst those who have yet to finish their Level 2 test project (stair string between newels with framed cupboard door below). I'm hopeful they'll all make it okay.

I've had a bit of time out in the field as well recently, most notably working down a cobbled mews nearby where I've patched up and repaired any number of garage doors over the last few years. Returning for yet another set, I was able to fully appreciate the benefits of having a young assistant; with his help we were able to tear through seven large doors in one day... a new record, and one which will probably remain unsurpassed for quite a while.

Story time

There's nothing like swapping a good yarn or two, and here at *The Woodworker* we aim to provide you with the perfect opportunity for doing so. It's always good to hear your stories and experiences, and if the number of emails continues to increase at the same rate we could well see the return of the letters page before long. With nearly everyone hooked up to the internet these days, it's the work of but a minute or two to bash off a message and provide your fellow woodworkers with tales of wisdom, wit or even woe.

Here's a good one I heard from Chelmsford reader Dave Penny the other day, in response to my endgrain wood-block roadways article. He recalls a particularly wet year (1948) when the wood-block high street adjoining the flooded river Chelmer, after being submerged for a few days, simply broke up and floated away downstream. But what the residents lost in road surface, they made up for in firewood!

So, when it comes to variety, if anyone has any suggestions as to what they'd like to see in the magazine, just drop me a line and we'll see what we can do about that wonderful spice of life.

Mark

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REGULARS

WOODWORK

TURNING

ON TEST

The Woodworker & Woodturner

July 2013

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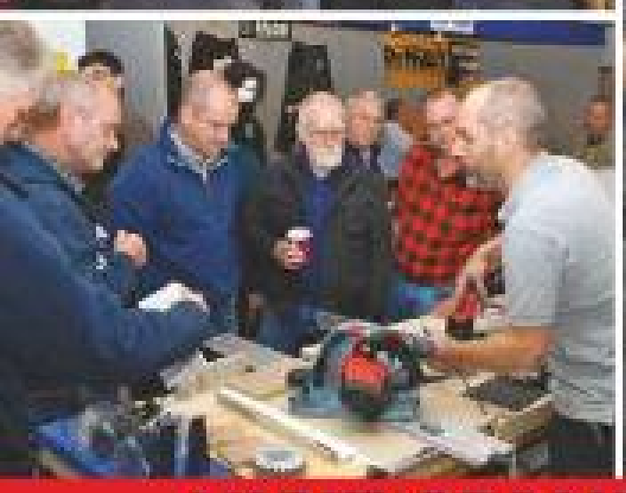

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In brief...

A wider cut

The new Bosch GCM 8SJL Professional sliding mitre saw has a 1600W motor and features a cutting width of 315mm that's unique in its class, two-point dust extraction and bevel and mitre angles that are easy to set. The price? £430.80.

www.bosch.com

Is it a plane(r)?

Triton's new TRPUL planer cuts rebates right to the edge of the workpiece, and its three-blade drum can be replaced with a sanding drum, creating two versatile tools in one. It costs £124.99.

www.tritontools.com

STOP PRESS

- **Axminster's** Sittingbourne, Kent, store has opened a new Skill Centre offering courses in turning, carving, routing, spindle moulding, penmaking and pyrography.
  www.axminsterskillcentre.co.uk
- **Machine Mart's** 62nd superstore is now open in Luton.
  www.machinemart.co.uk
- **Record Power** is relocating to larger premises in Chesterfield on July 29th.
  www.recordpower.co.uk

Better than ever

The DeWalt DWS778 sliding mitre saw (£360 on the web) is a new and improved DW777 with a 250mm blade and a cutting capacity of 305 x 85mm in a package weighing just 17.2kg. For extra accuracy it also has a patented precision mitre system.

www.dewalt.eu

Two finishes in one

Rustins Ltd has bought Briwax International from the Bollom brothers, who are retiring after over 50 years in the business. The merged company will make it easier for merchants to stock both product ranges.

www.rustins.co.uk or **www.briwax.co.uk**

Golden opportunity

The iconic Stanley Powerlock tape celebrates its 50th anniversary by appearing in a limited-edition gold version. It's available in store from July, along with the chance to win €500 of Stanley tools each week.

www.stanleytools.eu

DIARY

JUNE

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18-21 Waterperry House, Waterperry, Wheatley, Oxon (satnav HP18 9JX)
www.artinaction.org.uk for tickets

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3-4 & 18-19 Beginners woodturning
4-5 & 8-9 Beginners routing
10 Penmaking*
16-17 Beginners routing*
20 Penmaking
22-26 Beginners woodturning
*Course held in Sittingbourne, Kent
Unit 10 Weycroft Avenue, Axminster EX13 5PH
0800 975 1905
www.axminsterskillcentre.co.uk

John Lloyd courses
29-Aug 2 Furniture making 1
Bankside Farm, Ditchling Common RH15 0SJ
01444 480388
www.johnlloydfinefurniture.co.uk

Orchard Woodturners
13 Tony Walton
Village Hall, Millstead, Kent ME9 0SD
01622 726532

Peter Sefton Furniture School
13 Open Day
The Threshing Barn, Welland Road Upton-upon-Severn, Worcs WR8 0SN
01684 591014
www.petersefton furnitureschool.com

Record Power Summer Show
13 Snainton Woodworking Supplies, Scarborough YO13 9BG
26-27 Yandles, Martock TA12 6JU

Shropshire Association of Woodturners
24 James A Smith (natural-edge bowls)
Bicton Village Hall, Bicton SY3 8EL
01743 240661

Toolshow 2013
20-21 Amex Stadium, Brighton BN1 9BL
01273 774455

West Dean College courses
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CHICKEN RUN 1

BY ALAN HOLTHAM

Ever fancied keeping a few chickens in your back garden and collecting your own breakfast eggs each day? Here's how you can house them in comfort and keep them safe from predators.
Part 2 follows next month...

As a reaction to today's soulless mass production of over-processed food, many of us are trying to reconnect to a more natural food chain. A recent survey has revealed that over a quarter of the UK population keeps – or would like to keep – a few chickens in the back garden. It's undoubtedly a booming hobby, fuelled by the promise of a regular supply of tasty and wholesome eggs... and possibly even a free meal from time to time!

Housing policy

Hybrid hens are easy to keep and don't require a huge amount of space or time input, but they do need some decent and well-made housing. This is more to keep predators out than the hens in, as urban foxes are becoming more and more daring in their garden raids (and not just at night either).

Unfortunately, keeping chickens is as addictive as woodworking, and my flock continues to grow alarmingly as I now

incubate and hatch our own eggs. Fortunately, as a woodworker with a useful pile of useful offcuts always at my disposal I'm able to make all my own housing. Doing this is no cheaper than buying an off-the-peg coop, as there are some very cheap ones out there. However, their quality is very poor and they won't last long in our inclement weather; nor will they put up much resistance to a predator attack.

All mod cons

This sturdy coop was designed to accommodate my latest batch of four growers. They're still some way off laying eggs, so there's no provision for a nest box. If you're housing layers, you could easily tag a nest box onto the free side or put a loose one inside.

I made the coop mobile so I could move it around the lawn easily. If you're new to keeping chickens it's hard to imagine how destructive they can be. Moving the coop every few days gives them fresh grass to eat and scratch, but doesn't give them time to totally destroy your lawn. There are added benefits though, in the form of a regular dose of highly beneficial manure!

A simple structure

The construction consists of four main frames screwed onto the legs and boarded in

Cut all the matching components for the frames together to make sure they're identical. Do the longest pieces first and then cut progressively smaller pieces from the remaining offcuts

The frames are just screwed together, so it will speed the job up considerably if you use a combined drill and countersink to do both jobs in one hit

3

If you use a cordless drill as a screwdriver, always select the slowest speed to increase the torque and reduce the risk of the bit 'camming out' the screw heads as you drive them

A Quickgrip cramp acts as an instant third hand to ensure that components stay lined up while you screw them together

Use two screws in each joint for a tight hold and to prevent the pieces twisting out of line. Angle the screws slightly to increase the relatively poor grip in end grain

The ridge timbers are screwed on to the end frames in a similar fashion. Note how they're cut to meet at 90°. This is much easier to screw together than a double mitre

The two main end frames are soon completed and should normally be identical but...

tongued-and-grooved cladding. It's raised off the ground for several reasons. Firstly, it allows maximum use of the space for the hens to roam around. Secondly, the area underneath the main coop provides dry shelter for feeding. Thirdly, it stops the inevitable vermin from nesting underneath – a common problem with ground-level coops.

You can make the run section as big as you want. I fitted a door into the end as I often let 'the girls' out for some supervised free ranging in the garden. Do watch them carefully if you're particularly garden proud, though; all plants are fair game to a hungry hen!

Choosing materials

All the timber is available off the shelf. I used 70 x 70mm, 45 x 45mm and 45 x 32mm PAR redwood for the frame. I always spend that little bit extra to get redwood rather than cheap whitewood, as the quality is so much better. It's straighter and squarer, there are fewer knots and it cuts much more cleanly, all of which make it easier to work. It will also undoubtedly last very much longer.

The timber sections I've chosen may seem a bit over the top, but the coop needs to be really sturdy to withstand years of weathering and being dragged around the garden. Now let's get cracking!

...I decided at this stage to fit a sliding droppings tray, so I modified the lower cross rails, making one thicker and one thinner to allow for the tray

The two side frames are identical, and are sized to match the height of the end frame with the thicker bottom rail

Form a frame for the 'pop' hole as a separate item before fixing it into the end frame with the thicker bottom rail. You won't be able to get your driver in if you try to do this in situ

11

Use the 45 x 32mm material for this opening and make sure it's all square before screwing it in place as shown

Cut all the cladding pieces about 2mm over-long and then fix them onto the frames, putting one nail only through the bottom of each piece. This will hold the one below in place but still allow it to move with changes in humidity. If you nail them too tight, they'll crack in a dry summer

Mark the top piece of cladding for size and again cut this about 2mm over-long before nailing it in place. You'll need a few more nails to hold this one securely

Now you can trim back any overhang flush with the frame. This gives a cleaner finish than trying to cut and fit each one exactly

15

If you have one, a router with a bearing-guided trimming bit will be even quicker, and will leave a better finish. Remember to work clockwise round the internal openings and anti-clockwise round the outside edges

If you leave plenty of 'spare' material in the internal corners before trimming them, the router will cut very neat radii

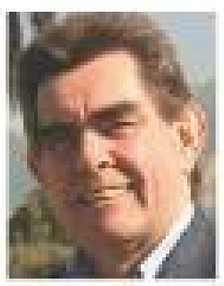
You'll also need to create an opening in one of the side frames for the access door

Start the assembly process. Fix the end panels to the legs first, angling the screws. A cramp helps to hold everything in place

The whole thing is starting to come together now, but attaching the side panels is a bit trickier

It's easiest to lay the first end panel on the floor and then to screw down through it into the legs

Cramps will hold everything in place while you screw on the other end. Next month I'll finish it off and move in the new tenants!



BY ROBERT COULDWELL

On reflection...

This simple mirror requires nothing more elaborate in the woodworking skills stakes than the ability to cut wood square and make a few simple fixings. It's easily matched to other bedroom furniture

After I made a reasonable list of crafting a computer desk for my daughter (see *The Woodworker* April 2013), my wife presumed that I could make anything. She decided that my daughter also needed dressing table and cheval mirrors so she could check on her dress, hair and make-up on the morning of her wedding. Unfortunately 'she who must be obeyed' only made this request three weeks before the event, so I had to get moving.

Bearing in mind that I don't have a planer thicknesser, I spent an hour at our local woodyard trying to find lengths of oak that wouldn't come back to me if thrown down the garden – not easy at the best of times!

I decided to base the mirrors on in-stock American white oak sections measuring 44 x 19mm and 142 x 19mm, with a 6mm thick plywood back.

Hunting for glass

I wanted good-quality bevelled mirror glass and trawled the internet, finding a brilliant glazier who cut and bevelled to order. The company is based in Wandsworth, South London and mirrors are ordered through its website, www.mirrorfit.co.uk. Because of their fragility the mirrors are crated with softwood and plywood, resulting in a standard delivery charge of £30.

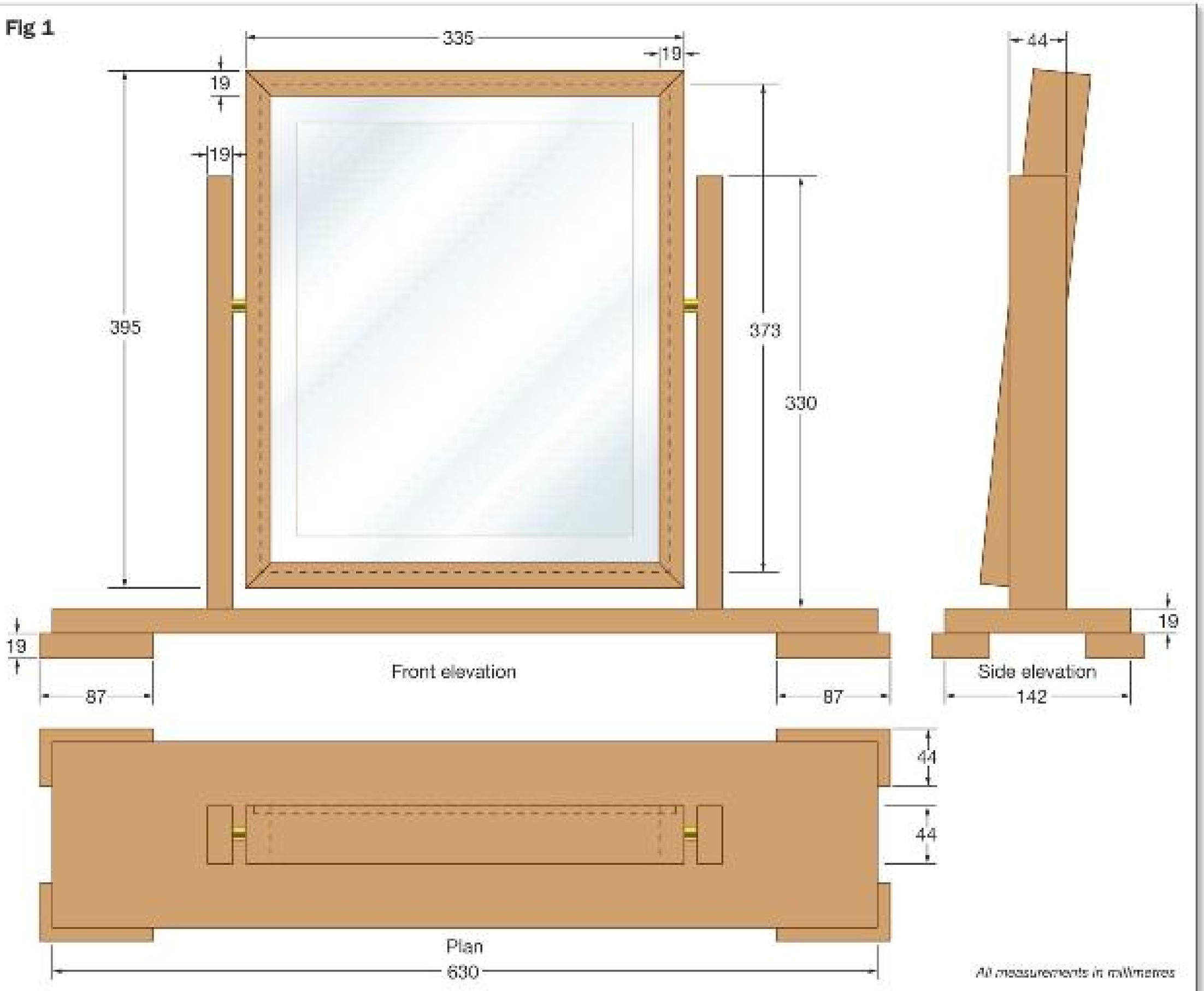
Despite this, the two pieces of mirror glass I ordered at the time worked out much cheaper than buying from local suppliers. The mirrors were delivered within five days and were beautifully cut and bevelled.

I wanted to make the mirror as simple as possible without ornamentation, although the size and proportions were based on a Victorian mirror we already possessed.

Cutting rebates

I've owned a router table for a couple of years and I'm still learning to use it, both by trial and error and by picking up tips from the routing professionals writing in *The Woodworker*. One thing I learned on this project was that the side of a router cutter

Fig 1



DRESSING TABLE MIRROR CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Mirror frame side	2	395	44	19
Mirror frame top/bottom	2	335	44	19
Mirror frame back panel (ply)	1	373	312	6
Support posts	2	330	44	19
Base	1	630	142	19
Foot	4	87	44	19

You will also need a piece of 6mm thick foil-backed mirror glass measuring 373 x 312mm, and two E41181 No 88 brass pivot mirror hinges (available on eBay)

makes a cleaner cut than the top.

When routing the rebates in the mirror frame to take the glass and back, I first applied the sections to the router cutter narrow side down, resulting in an uneven edge that would show. I therefore started again, applying the section wide side down, **photo 1**. This resulted in a much cleaner edge which would fit perfectly next to the bevel of the mirror.

Cutting mitres

Similar mirrors I'd seen used in the shops have butt corner joints. However, I'm a lover of mitres, which I fashion using my DeWalt chop saw fitted with a Forrest blade. This is generally Robert-proof, and produced a perfect finish without further fettling.

When making the frame, I cramped the two side rails one above the other in the chop saw and cut the first mitres, **photo 2**. I then re-cramped them, carefully measured the required length and cut the other two, thus ensuring that the sides were exactly the same length. I repeated this with the top and bottom rails.

Glue rather than biscuits

As the biscuits from my biscuit jointer were too wide for the mitres, I decided to stick the frame together with instant mitre glue, **photo 3**, and then to reinforce the corners with simple oak brackets. I wanted the security of screwing as well as gluing the corner pieces, so I made some brackets as shown in **photo 4**.

I was careful to check that the frame was dead square, and cramped all the sides after gluing them. I was now able to measure and order the glass. This duly arrived and I carefully unpacked it, placed it in the frame and gingerly drilled and screwed in the corner brackets, leaving the frame rebate clear to receive the plywood back. For extra support I also screwed some beading to each frame rail between the brackets, **photo 5**.

Checking that the mirror bevel was in line with the frame all round, I then glued and screwed the plywood back panel in position, **photo 6**, and put the framed mirror in a safe place while I completed the base.

Making the stand

The 142 x 19mm standard oak board I'd bought proved perfect for the mirror base, with 44 x 19mm sections to support the mirror. I had purchased some brass pivot mirror fittings from a local ironmonger (I've since found them much cheaper on eBay). I fitted the relevant components to the framed mirror and the supports, **photo 7**. I then measured the overall width, **photo 8**, which I transferred to the base.

I drew outlines of the uprights on the base and drilled two holes within each outline. I then used good old mitre glue to stick the uprights in position. I carefully clamped the uprights in the Workmate, drilled pilot holes through the previously drilled holes in the base and inserted four 60mm screws, **photo 9**. I know the uprights should have been mortised and tenoned into the base, but that's a little beyond me at the moment!

Adding the feet

I was unsure about the design of the feet for the mirror, and happened to have four oak drawer knobs lying about which were similar to the bun feet on a Victorian mirror. However, after some discussions with my client I decided to change these to the simple oblong oak feet shown in **photo 9**. They're just glued in place.

I finally sanded the mirror and applied several coats of tung oil. I wasn't so much satisfied with the finished mirror as with the brownie points I received for the finished job from 'her indoors'. Now to scale everything up for the cheval mirror...

FURTHER INFORMATION

Mirror pivot fittings

- Fix Firm Fittings
- 01522 551414
- www.fixfirmfittings.co.uk

I got cleaner rebates by passing the workpiece face down over the router cutter

I cramped the frame rails one above the other to ensure that I cut the mitres accurately

I decided to stick the mirror frame components together with mitre glue

The oak corner brackets were made from squares in three easy stages...

Check the mirror alignment and screw the plywood back panel into place

...and were then screwed into the frame corners. Note the reinforcing beads between them

Attach the mirror fittings to the sides of the frame and to the upright supports

Measure the overall width and transfer this measurement to the base panel

Attach each upright to the base with two 60mm screws, and add the feet

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- 225mm x 150mm table, tilts 0-90°
- 370w, 230v motor

Clarke 6" BELT/ 9" DISC SANDER

- Includes stand
- ½ Hp/ 230W 1ph motor

CSB-9C
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Clarke 1" BELT & 5" DISC SANDER

CBS1-5

- 5" dia. circular sanding disc runs at 2,000rpm
- 1" x 30" sanding belt operates at 13.5 metres/sec.

£59.99 ex VAT
£71.88 inc VAT

Clarke CONTRACTOR RANDOM ORBITAL SANDERS

INC 6 DISCS

CROS2

- For fast removal of paint or for fine swirl free finishing
- 6 x 150mm diameter sanding discs
- 4000-7000 rpm

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£59.88 inc VAT

Clarke CONTRACTOR RECIPROCATING SAW

INCLUDES 5 WOOD & 3 METAL BLADES

- Multipurpose saw for cutting wood, board, metal pipes etc. • Max. Depth of cut 210mm • 850w motor

CON850
£47.99 ex VAT
£57.47 inc VAT

Clarke ROTARY TOOL KIT

CRT40

£26.99 ex VAT
£32.39 inc VAT

Kit includes
- Height adjustable stand with clamp • Rotary tool • 1m flexible drive • 40+ accessories/consumables

Clarke NEW MULTI FUNCTION TOOL WITH ACCESSORY KIT

- Great for sawing, cutting, sanding, polishing, chiselling & much more
- 230-240v, 250w motor
- Variable speed 15,000 – 21,000 strokes/min

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£44.39 inc VAT

CMFT250

Clarke BISCUIT JOINTERS

- 10,000rpm no load speed
- 600w motor
- 16mm max cutting depth
- 100mm cutting dia.

BJ600
£49.99 ex VAT
£59.88 inc VAT

Clarke LIGHTWEIGHT ALUMINIUM QUICK RELEASE ALUMINIUM SASH CRAMPS

FROM ONLY £6.99 ex VAT £8.39 inc VAT

MODEL	SIZE	EX. VAT	INC. VAT
CHT374	600mm	£6.99	£8.39
CHT375	900mm	£7.99	£9.59
CHT376	1200mm	£9.99	£11.99

Clarke EVOLUTION RAGE5 255mm MULTIPURPOSE TABLE SAW

£274.99 ex VAT
£329.99 inc VAT

- Powerful 1800w 230v motor
- Max depth of cut (45°/90°) 55/79mm • Includes TCT blade, mitre fence, wheel kit, folding stand, push stick, steel extensions • Available in 110v & 230v

Clarke TABLE SAWS

CTS10D

LEG STANDS AVAILABLE FOR
CTS11 - £21.99 EX VAT
£26.38 INC VAT
CTS10D - £21.99 EX VAT
£26.38 INC VAT

FROM ONLY £69.99 ex VAT £83.99 inc VAT

INCLUDES LEFT & RIGHT TABLE EXTENSION

*Mounted base

MODEL	MOTOR	BLADE	EX VAT	INC VAT
CTS800B	800w	200mm	£69.99	£83.99
CTS11*	1500w	254mm	£139.99	£167.99
CTS10D	1500w	254mm	£141.99	£170.99

Clarke CIRCULAR SAWS

GREAT RANGE IN-STORE

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CCS-2

MODEL	MOTOR	MAX CUT 90°/45°	BLADE BORE	DIA.	EX VAT	INC VAT
FURY	1200w	54/35mm	165/20		£54.99	£65.99
Clarke CCS-2	1300w	60/45mm	165/20		£64.99	£77.99
Makita 5704RK	1200w	66/46mm	160/30		£99.98	£119.98
Ryobi	1050w	54/35mm	185/20		£89.99	£107.99

Clarke SHEET SANDERS

FROM ONLY £14.99 ex VAT £17.99 inc VAT

COR300

MODEL	SHEET SIZE	MOTOR	EX VAT	INC VAT
COS200	190X90mm	150w	£14.99	£17.99
CON300	240X115mm	330w	£29.99	£35.99
Makita BO455	112X102mm	200w	£54.99	£65.99

Clarke RANDOM ORBITAL SANDERS

CROS1

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- For sanding & polishing
- 125mm diameter sanding discs
- 4000-11000 opm

INC 6 DISCS

Clarke POWER PLANERS

Makita

- 82mm cutting width

FROM ONLY £24.99 ex VAT £29.99 inc VAT

CON1020

MODEL	INPUT POWER	DEPTH OF CUT	EX VAT	INC VAT
Clarke CEP1	650w	2mm	£34.99	£39.99
Clarke CON1020	1020w	3mm	£36.99	£44.39
Bosch PHO20-82	680w	2mm	£64.99	£77.99
Bosch PHO26-82	710w	2.6mm	£109.99	£131.99

Clarke ROUTERS

RYOBI trend

FROM ONLY £39.99 ex VAT £47.99 inc VAT

* DIY # PRO

MODEL	MOTOR (W)	PLUNGE (mm)	EX VAT	INC VAT
CRT0*	1200	0-50	£39.99	£47.99
Ryobi ERT1400RV#	1400	0-65	£87.99	£105.59
Trend T5# †	1050	0-50	£159.99	£191.99
DeWalt DW622K-GB# †	1400	0-65	£219.99	£263.99

PRICE CUTS! # was £203.36 inc VAT
† was £271.95 inc VAT

Clarke CONTRACTOR CR2 ROUTER

£109.99 ex VAT
£131.99 inc VAT

INCLUDES 15 PIECE ROUTER BIT SET WORTH OVER £20 INC VAT

- Powerful heavy duty machine ideal for trade use • Variable speed control from 7,400-21,600 rpm • 2100w motor • 8-60mm plunge depth 1800w CR3 Router with 15 Piece Bit Set also available only £89.98 £107.98

RYOBI ROUTER & TABLE KIT

ERT1400G Router
- 1400w power input
- 14,000-31,500rpm
- ¼" & ½" collet capacity

INCLUDES ROUTER

ART03HG Router Table
- Table dims: with extensions 355mm x 1010mm • Mitre gauge • Adjustable blade guard

£159.99 ex VAT
£191.88 inc VAT

Clarke ROUTER TABLE

CRT-1

£54.99 ex VAT
£65.99 inc VAT

- Converts your router into a stationary router table • Suitable for most routers up to 130mm dia. Base plate

Clarke WORKBENCH

CWB1250B

£79.99 ex VAT
£95.99 inc VAT

- Robust steel workbench • Extra thick, reversible plywood faced worktop • Large lockable cabinet with storage shelves • Tough steel drawer

Clarke DOVETAIL JIGS

- Simple, easy to set up & use for producing a variety of joints • Cuts work pieces with a thickness of 8-32mm • Includes a ½" comb template guide & holes for bench mounting. Router not included

CDTJ24

PRICE CUT NOW FROM £44.99 ex VAT £58.99 inc VAT

MODEL	SIZE	EX VAT	WAS INC VAT	NOW INC VAT
CDTJ12	300mm	£44.99	£59.99	£53.99
CDTJ24	600mm	£84.99	£107.99	£101.99

Clarke 13" MINI WOOD LATHE

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CWL325V

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

Clarke HARDWOOD WORKBENCH

- Includes guide holes and bench dogs • 2 heavy duty vices • Large drawer for tool storage • Dims: LxWxH 1520x620x855mm

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- For use with bigger woodworking machines inc. saws, planers etc.
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MODEL	MAX. MOTOR HP	FUSE	EX 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 RECORD POWER LATHES

CL3-CAM

- Cast iron construction
- 36" Max between centres

LEG STAND FOR DML265H £48.98 EX VAT £59.98 INC VAT

PRICE CUT NOW FROM £239.00 ex VAT £286.80 inc VAT

PRICE CUTS! * was £299.98 inc VAT # was £514.80 inc VAT SAVE £72

MODEL	MOTOR (HP)	NO. SPEEDS	TURNING CAP OVER BED /OUTBOUND	EX VAT	INC VAT
DML265H*	½	4	9"/12"	£239.00	£286.80
DL3-CAM#	¾	6	12"/36"	£369.00	£442.80

Clarke 150 PER SHELF / 350 PER SHELF BOLTLESS SHELVING BENCHES

- Simple fast assembly in minutes using only a hammer

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MODEL	SHELF DIMS WxDxH/pair	EX VAT	INC VAT
150kg	600x300x1800	£29.98	£35.98
350kg	900x400x1800	£41.98	£49.98

Clarke PLANERS & THICKNESSERS

CPT800

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

*Max planing width 152mm

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MODEL	MOTOR	MAX THICK. CAPACITY	EX VAT	INC VAT
CP-6	1100w	*	£129.99	£155.99
CPT600	1250w	120mm	£179.99	£215.98
CPT800	1250w	120mm	£199.99	£239.98

Clarke WOODWORKING LATHES

CWL1000

3 PCE CHISEL SET INCLUDED WITH CWL1000

SEE CATALOGUE FOR ACCESSORIES

MODEL	CENTRE TO CENTRE (mm)	TURNING DIA.	TURNING SPEEDS	EX VAT	INC VAT
CWL1000	1016	350mm	4	£106.99	£128.39
CWL1231	940	335mm	5	£199.98	£239.98

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A range of professional Nailers from Tacwise

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50DEL

MODEL	TYPE	NAIL SIZE	EX VAT	INC VAT
181EL	Nail	10-35mm	£39.98	£47.98
191R	Nail/Staple	10-35mm	£44.99	£53.99
40DEL	Nail	15-40mm	£69.98	£83.98
50DEL	Nail	20-50mm	£79.98	£95.98

Clarke JIGSAWS

Makita BOSCH Power Tools

*DIY #Professional

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CJS380

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EX VAT	INC VAT
Clarke CJS380*	420w	55/6mm	£14.99	£17.99
Clarke CON750#	750w	80/10mm	£29.98	£35.98
B & D KS600*	450w	65/5mm	£33.99	£40.79
Bosch PST700*	500w	70/4mm	£46.99	£55.19
Makita 4329#	450w	65/6mm	£64.99	£77.99

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- Maximum chisel cap.76mm

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MODEL	DEPTH OF CUT	EX. VAT	INC. VAT
Clarke CBM1B	95mm	£139.99	£167.88
Record RPM75B	76mm	£179.99	£215.99
Record BM1G *	120mm	£249.00	£298.80

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- Tables tilt 0-45° left & right
- Depth gauge
- Chuck guards

B=Bench mounted
F=Floor standing

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£77.99 inc VAT

MODEL	WATTS/ SPEEDS	EX VAT	INC VAT
CDP5BC	250/5	£54.99	£77.99
CDP10B	245/5	£74.99	£89.99
CDP15B	300/5	£106.99	£128.39
CDP-10B	370/12	£166.99	£191.99
CDP30B	510/12	£199.99	£239.99
CDP45F	510/16	£239.99	£287.99
CDP50E	980/12	£329.00	£394.80

Clarke SCROLL SAWS

CSS16V
FROM ONLY £62.99 inc VAT
£75.59 inc VAT

- 120w, 230v motor • 50mm max cut thickness • 400-1,700rpm variable speed • Air-blower removes dust from cutting area

MODEL	MOTOR	SPEED RPM	EX VAT	INC VAT
CSS400B	65w	1450	£82.99	£75.59
CSS16V	120w	400-1700	£84.99	£101.99

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY £129.99 inc VAT
£155.99 inc VAT

METABO ALSO AVAILABLE

- Powerful 750w motor
- 56 litre bag capacity
- Flow rate of 650M3/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EX VAT	INC VAT
CDE650	750w	650 M3/H	56Ltrs	£129.99	£155.99
CDE750	750w	650 M3/H	114Ltrs	£139.99	£167.99

Clarke

DUST EXTRACTOR CDE1000

- 50 litre tank capacity
- 103 m³/h flow rate
- 1100W input wattage

OTHER MODELS AVAILABLE

£99.99 inc VAT
£119.99 inc VAT

Clarke BELT SANDERS

FROM ONLY £29.99 inc VAT
£35.99 inc VAT

BOSCH Power Tools BS1

MODEL	WATT	'RUMIN	EX VAT	INC VAT
Clarke BS1	900w	380	£29.99	£35.99
Bosch PBS75A	650w	250	£74.99	£89.99
Clarke CBS2	1200w	480	£69.99	£83.99
Makita 9911	650w	75-270	£92.99	£111.59

Clarke 12" CONTRACTORS SAW

INDUCTION MOTOR

CCS12

- 1600w motor
- 315/30mm blade / bore diameter
- 90mm max cut depth at 90°

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£286.80 inc VAT

Clarke 16" VARIABLE SPEED SCROLL SAW

WITH FLEXI DRIVE AND WORKLAMP

CSS400C

INCLUDES 64 PIECE KIT

- Parallel action arm design produces quick, accurate cuts in wood and plastic
- 50mm cutting depth • Flexible drive kit for additional grinding, polishing & sanding

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INCLUDES STAND

MODEL	MOUNT	MOTOR	THROAT	EX VAT	INC VAT
Clarke CBS180	Bench	350w	190mm	£109.99	£131.99
Clarke CBS250	Floor	370w	245mm	£179.99	£215.99

Clarke CORDLESS DRILL/DRIVERS

BOSCH Power Tools PSR18

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MODEL	VOLTS	BATTS	EX VAT	INC VAT
CCD180	18v	1	£36.99	£44.39
CCD240	24v	1	£49.99	£59.99
Bosch PSR18	18v	1	£68.99	£82.79

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- Dual action spreader or compression clamp by simple head reversal • Quick release trigger for fast adjustment

CHT651

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MODEL	CLAMP SIZE	EX. VAT	INC. VAT
CHT651	6"	£3.99	£4.79
CHT652	12"	£4.99	£5.99
CHT653	18"	£5.99	£7.19
CHT654	24"	£7.99	£9.59

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MODEL	MOTOR	CFM	TANK	EX VAT	INC VAT
BT-AC200	1.5 Hp	6.2	24ltr	£79.99	£95.99
Tiger 8/44	2 Hp	7.8	24ltr	£114.99	£137.99
Tiger 8/84	2 Hp	7.8	50ltr	£164.99	£197.99
Tiger 9/24	2.5 Hp	8.7	24ltr	£149.99	£179.99
HUNTER 55	2.5 Hp	8.7	50ltr	£179.99	£215.99
Tiger 9/50	2.5 Hp	8.7	50ltr	£189.99	£227.99
AIRTEC150	2Hp	14	150ltr	£419.00	£502.80

Clarke MITRE SAW STAND - CUTS1

£76.99 inc VAT
£92.39 inc VAT

- Suitable for most sizes/ makes of saw
- Inc. outriggers & rollers

EVOLUTION MITRE SAWS

RAGE3

- Quality range ideal for cross, bevel & mitre cutting
- 45° tilting blade & table • Dust extraction system

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MODEL	BLADE DIA./BORE	MAX CUT DEPTH/CROSS	EX VAT	INC. VAT
Rage 3	210/25.4mm	60/320mm	£119.99	£143.99
Evolution Rage 3	255/25.4mm	75/320mm	£169.99	£203.99
Makita LS1040	260/30mm	95/130mm	£199.99	£239.99

Clarke 10" SLIDING MITRE SAW

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800w motor
- 6000rpm

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CMS1052

Clarke WOODWORKING VICES

FROM ONLY £13.49 inc VAT
£16.19 inc VAT

Record WV7

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EX VAT	INC VAT
Clarke CHT152	Bolted	150/152/61	£13.49	£16.19
Stanley Multi Angle	Clamped	72/260/40	£16.99	£20.39
Record V75B	Clamped	75/250/32	£18.99	£22.79
Clarke WV7	Bolted	180/205/76	£24.99	£29.99
Clarke WV7CR	Bolted	180/205/80	£39.99	£47.99

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MODEL	DUTY	WHEEL DIA.	EX VAT	INC VAT
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CDG6HZ	PRO	150mm	£37.99	£45.59
CDG6SB	PRO	150mm	£49.99	£59.99
CDG6WC	HD	150mm	£54.99	£65.99
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KA900E

- Great for hard to reach areas
- 13mm wide belt, 120mm long arm • 350w motor

Clarke PORTABLE THICKNESSER

- Max thickness capacity 130mm
- Planing depths adjustable from 0-2.5mm
- Powerful 1250w motor
- 8000rpm no-load speed

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CPT250

Clarke WHETSTONE SHARPENER

- Produces accurate razor sharp cutting edges on chisels, scissors, tools etc
- 120w motor
- Grinding disc dims: 200mm dia x 40mm x 12mm bore
- Wet bath

£99.99 inc VAT
£119.99 inc VAT

CWS200

Clarke 6" BENCH GRINDER WITH SANDING BELT

- For sanding/shaping wood, plastic & metal
- Supplied with coarse grinding wheel & sanding belt
- Complete with tool rest, eye shield & wheel guard

£49.99 inc VAT
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CBG6SB

Clarke CARVING CHISEL SET

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CHT400

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- A range of compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY WET/DRY	EX. VAT	INC. VAT
CWVAC20P	1250W	18/12ltr	£46.99	£56.39
WD1020	1000W	13.5/12ltr	£49.98	£59.98
CWVAC20SS*	1400W	18/12ltr	£57.99	£69.59
CWVAC25SS*	1400W	18/17ltr	£64.99	£77.99
CWVAC30SS*	1400W	24/21ltr	£84.99	£101.99

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- For easy, precise and smooth cutting of wood parts • Carbide tipped saw blade
- Rotating table for precise angle cuts ranging between -52° and +60°

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RT-SM430U

*Includes laser guide

MODEL	BLADE DIA./BORE	MAX. DEPTH OF CUT	EX VAT	INC VAT
RT-SM300U	250/30mm	75mm	£249.99	£299.99
RT-SM305L *	210/30mm	65mm	£159.99	£191.99
RT-SM430U *	255/30mm	75mm	£249.99	£299.99

BLACK & DECKER POWERFILE

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£65.99 inc VAT

KA900E

- Great for hard to reach areas
- 13mm wide belt, 120mm long arm • 350w motor

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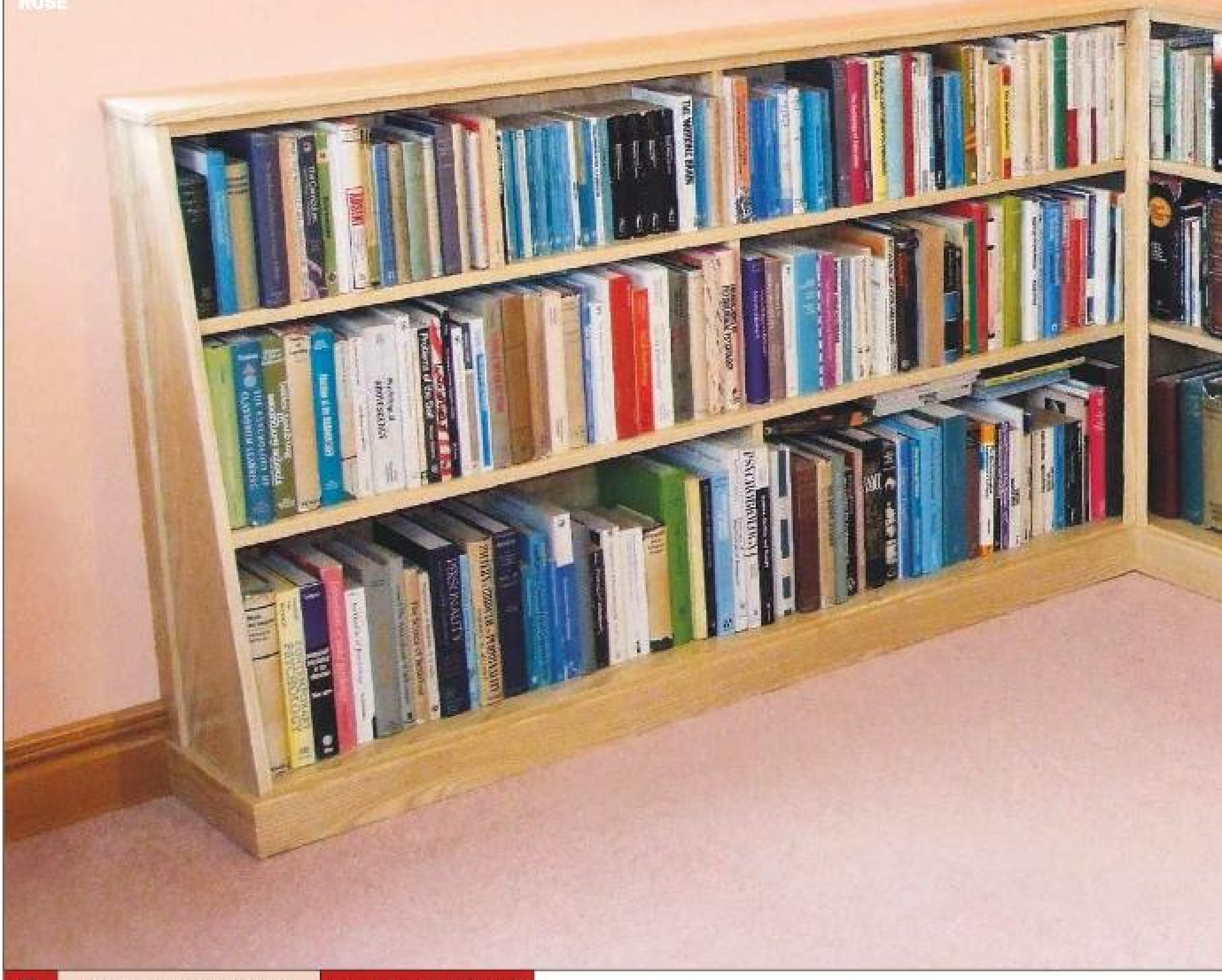
TURNING THE CORNER

BY DUNCAN ROSE

An author asked me to make a bookcase to house his expanding library, and specifically requested shelves that increased in depth. It was to be built in his office, turning the corner of the room, and proved to be a highly unusual project



This low-level bookcase fits along two adjacent walls, and features a sloping front profile and stepped depth shelves. It has the additional challenge of spanning a corner with sloping sides. This is easy to talk about but more difficult to achieve in wood. Thank goodness for the CAD software that allowed me to test various designs! The design consists of two sloping fronted sections meeting at 45°. This arrangement is the most straightforward to build and gives a simple and clean appearance. Bookend supports were added to stop books falling into the corner void.

The top is made from two pieces of ash, mitre-jointed where they meet. The shelves are fixed and positioned to match the sizes of the books in the collection. Central supports prevent any sag when the shelves are fully loaded. The supports are set back from the shelf fronts to give the bookcases an open appearance. A small external plinth trims the base of the bookcases.

Minor details

The bookcase rests on the carpet and is offset from the walls to clear the skirting board. The resulting void, visible at the ends, is covered with an ash trim. Using fixed battens, the bookcase is screwed to the wall via slotted fixings that will allow for any settling into the carpet.

Preparing the boards

I selected single boards for the top and upper shelf. As these will have ends cut at 45°, they were efficiently cut from full boards using 45° face cuts.

The sides, base and middle shelf are wider, and I made these by jointing together narrower boards. Where several panels are required of similar length I like to glue-up larger double-width panels and cut them to size later. This reduces the number of glue-up stages and uses the wood more efficiently. This is particularly apt when making the sides that have diagonal cuts.

Cross-cut the boards close to their finished lengths and remove any splits and blemishes. Plane the boards flat, then plane an edge square and straight. Prepare the boards to the final thickness and square the remaining edge.

Making the panels

Now arrange the boards to give the best appearance and with alternating growth

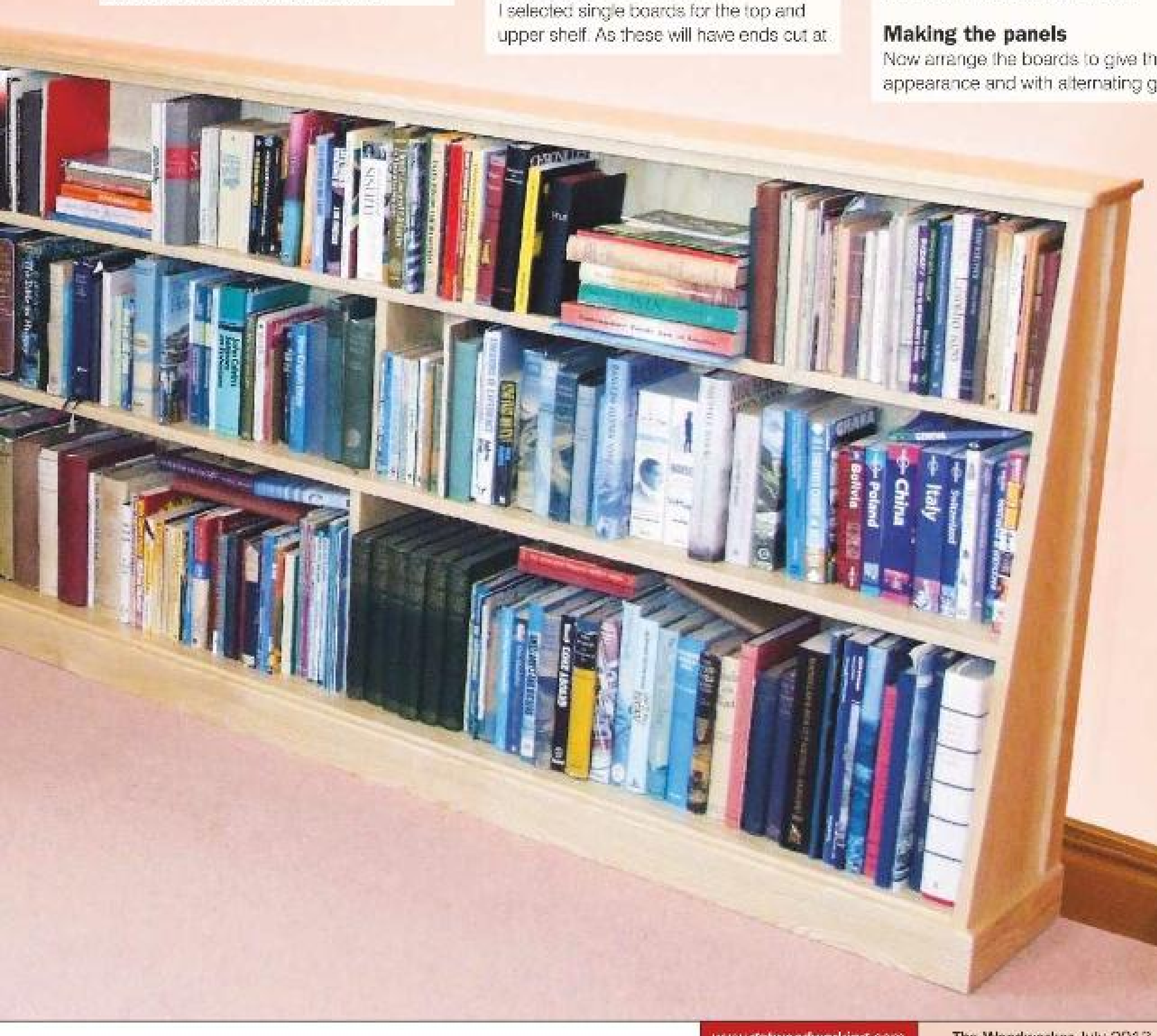
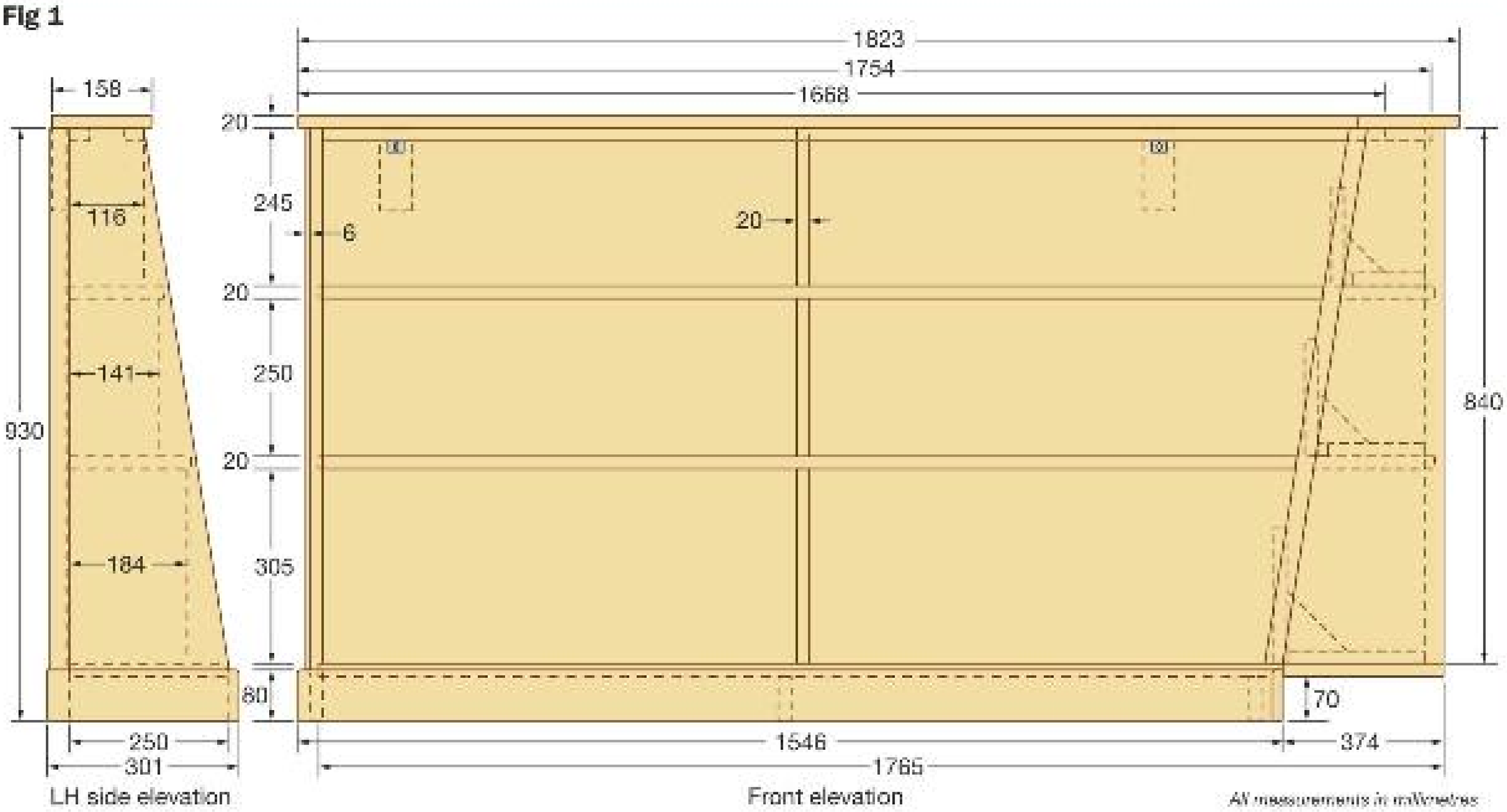


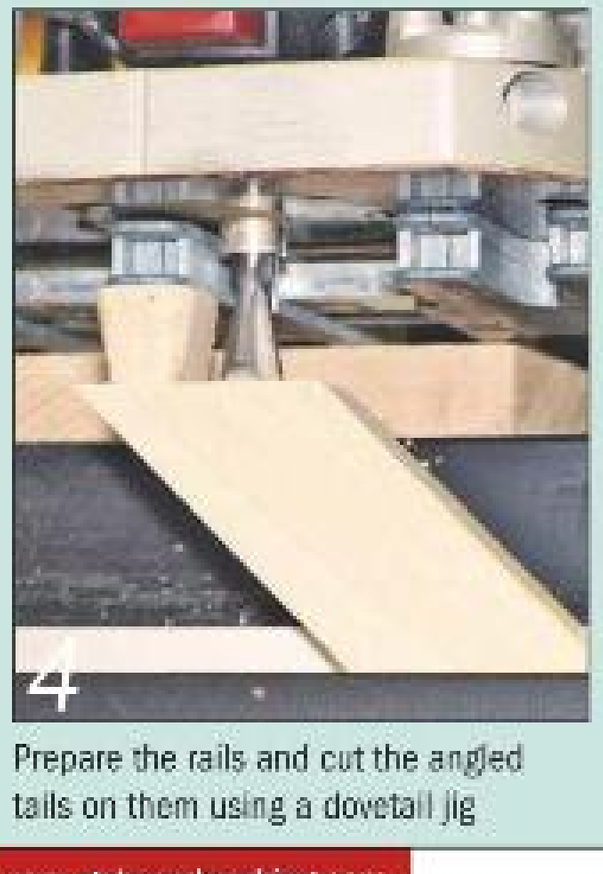
Fig 1



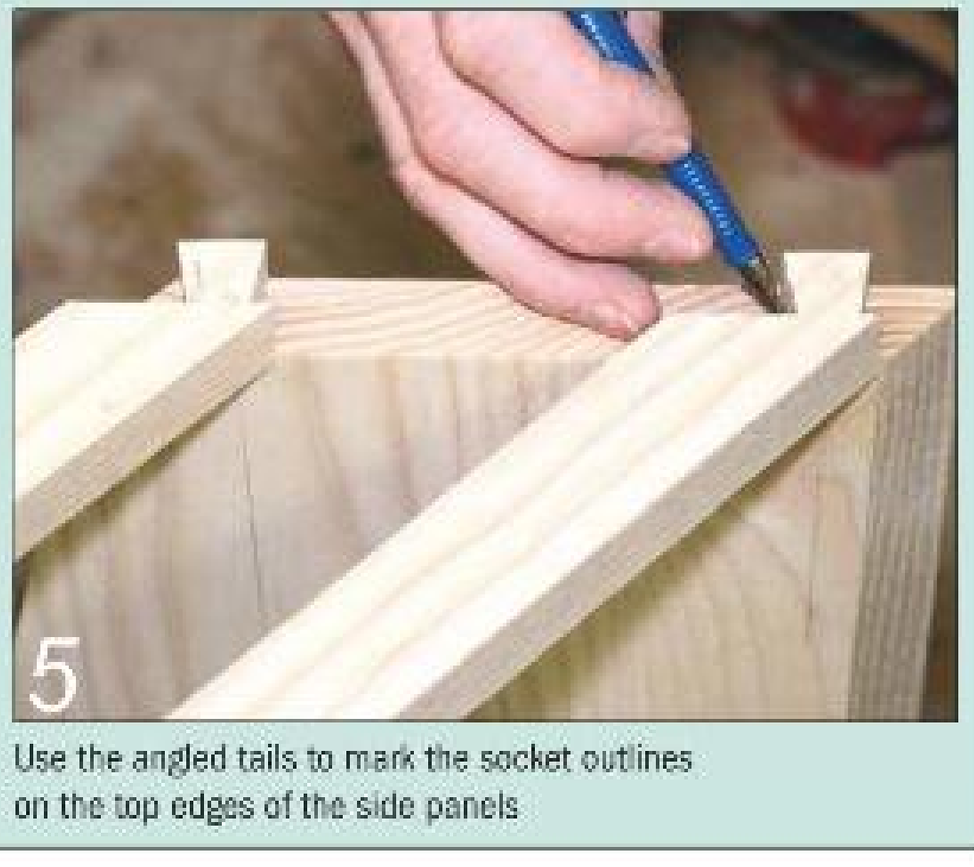
Prepare the ash boards, then glue and cramp them together into panels

I used a circular saw and guide rail to cut the angled side panels to size

Cut a 45° bevel on the front and rear edges of the inner side panels



Prepare the rails and cut the angled tails on them using a dovetail jig



Use the angled tails to mark the socket outlines on the top edges of the side panels

Then cramp each side panel in turn in the jig and cut out the sockets

Use your router to cut the housings for the shelves in the side panels

With all the sockets and housings cut, sand each side panel smooth

Begin the assembly by screwing the base to the inner side panel

Glue the rail dovetails into the side panel sockets and add a screw for security

Mark the length of each shelf directly from the rear of the carcass

The upper notched supports are screwed into the rails, top and bottom

The others are fixed through the shelf above and at the top rear edge

Hide the front screws with matching ash plugs and trim them flush when the glue is dry

ring directions. I rub-jointed the boards together using PVA glue. Adding biscuits along the joints keeps the boards aligned during glue-up. Remember to position the biscuits away from any edges that will be visible when the panel is cut. Cramp the joints tightly, **photo 1**. When they're dry, flatten any raised joints using a sharp plane.

Next, dimension the ash panels to their final sizes. Leave the shelf and top panels over length, as these are best measured empirically with the carcass assembled. After marking out the panels I completed the cuts using my rail saw, **photo 2**.

Form a bevel along the front and rear edges of the inner side panels. I made these using the table router fitted with a 45° cutter, **photo 3**. Use a series of shallow cuts, increasing the cutter height each time until the job is complete. Soften the pointed edge of the bevel with abrasive paper.

Rails with dovetails

Two rails hold the top of the side panels in position. They're also used to attach the top to the carcass and hold the back panel.

Joint the rails using lapped dovetails, with the inner tails angled at 45°. I cut the sockets and tails using my dovetail jig with a hand router.

Start by cutting the tails on the rails. The tails angled at 45° were cut with the rail held in the jig at the same angle, **photo 4**.

Cut the matching sockets in the side panels next. I marked their positions by drawing around the previously cut tails, **photo 5**. Then I cramped the side in the jig and cut the sockets, **photo 6**.

This is a good time to drill countersunk clearance holes in the rails, to be used for attaching the tops later.

Housing the shelves

Next, cut housing grooves in the sides to support the shelves. Rout these 5mm deep and 20mm wide. As the shelf front edges are inset, stop the grooves about 15mm from the front of the housing. Also rout a full-length groove for the base in the outer side panels. I cut the grooves using a hand router and a simple grooving jig, fitted with a guide bush and a 20mm cutter, **photo 7**. Square off the ends of the stopped grooves with a sharp chisel.

Drill counterbored clearance holes in the sides for screws that will pull the housing joints tight. After assembly, any visible screw heads can be hidden using ash plugs. Also drill and countersink four clearance holes in the base for securing it to the inner side panel.

Assembling the carcass

You can now bring together the base, side panels and rails, having sanded each part to make the finishing easier, **photo 8**.

First fit the base to the inner side panel using 60 x 5mm screws, **photo 9**. Then glue the base into the outer side and pull the housing tight with more screws.

Now glue the rails to the sides; again a small screw is useful for pulling the joint tight, **photo 10**. Check that the assembly is square and set it aside until the glue is dry.

Shelves and supports

Next, trim the shelves to length and fit them into the carcase. I marked the required length on the shelves while holding them against the rear of the carcase, **photo 11**. Then cut a pair of notches at the front of

The bookcase feet are simple rectangles attached with pocket-hole screws

Butt join the back panels behind the supports and screw them in place

Add two floating tenons to reinforce the mitre joint between the top sections

Round off the external corners of the top sections on the belt sander

Then use a router cutter to round over the front edges of each section

each shelf so it clears the stopped grooves. Glue the shelves into their housings and pull the joints tight with screws.

Now make and fit the central supports. Start with the upper support and cut a pair of notches so it fits between the top rails. Attach the support using screws, driven down through the rails from above, **photo 12**, and also up through the shelf from underneath.

Finally, fit the middle and lower supports, again using screws from underneath. Attach the top front of the support using a screw through a counterbored hole in the shelf above and a screw through a pocket-hole at the top rear of the support, **photo 13**. Hide the front screws with ash plugs and trim them flush when the glue is dry, **photo 14**.

Three simple feet are added to the base panel to support the weight of books at the middle and end of the carcass. They also provide ideal fixing locations for attaching the plinth. I attached the feet using pocket-hole screws, **photo 15**.

Coming together

Next, align the two carcass sections on the floor so they're level and perpendicular, and join the inner side panels together tightly. I used cabinet connector bolts which will easily realign the carcases during installation and prevent movement, keeping the top joint flush. Conceal the connectors beneath the top and shelf panels.

Backs and plinths

Next, fit the back panel to each carcass. These are made from ash-veneered mdf sheet, arranged with vertical grain, by using two smaller pieces butt jointed behind the central supports, **photo 16**. I fixed the backs using self counter-sinking screws, so they're easily removed for finishing.

The plinth sections are made from ash, 80mm wide and 16mm thick, and are mitre-jointed together. Cut the short end pieces over-length and leave fitting until final installation. Soften their appearance by routing an 8mm quarter round profile along the upper edge.

Fitting the top

Now you can complete the bookcase top. Cut the mitre joints so the two pieces align correctly. I also added two floating tenons to the joint; these make alignment easy and help to keep the finished joint flat, **photo 17**.

Lay the top on the bookcases and trim them to their final length. There should be an overhang of 15mm along the front and ends, and 21mm at the rear to cover the wall void. Sand a round at the two external corners, **photo 18**, and round over the front edges with a router cutter, **photo 19**. Leave fitting the top to the carcass until you're ready to install the units.

Optional bookends

I also made three pairs of bookends to support the books at the internal corners. These are a simple construction, consisting of base and end pieces, reinforced with a small triangular web. I glued and screwed them together and filled the screw heads.

Finishing touches

I sanded everything down once more and applied two coats of hardwax oil, rubbing down between coats with very fine wet-and-dry paper. Finally I buffed all the bookcase components with a light coat of liquid wax and reattached the back panels.

Installing the bookcases

When you're ready to install the bookcases, joint the carcasses together using the cabinet connector bolts. Place the bookcase in position and level it using packers beneath the feet. Secure the bookcase to the wall using screws, fixed battens and slotted angle brackets to allow the bookcase to settle into the carpet under its load of books.

Position the top on the bookcase, making sure the mitre is good, and secure it to the rails using screws driven up from underneath. Finish the job by fitting the plinth and the end trims, and slot the bookends into position.

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Green woman

Jennie pulls a draw knife that's used to shape green timber...

Furniture designer Jennie McDowell isn't fazed by some customers' raised eyebrows at her workplace. The assistant manager of a wood recycling business explains why woodwork isn't just for the boys

Being named as one of Kevin McCloud's Green Heroes in 2011 for her work in sustainable design, and presenting one of her products – a biodegrable compost caddy – with George Clarke (TV's *Home Show* host), spurred Jennie's confidence to make a real go of things in what is renowned as a male-dominated industry.

...to make her Windsor-esque greenwood chair

Honours even

Jennie graduated with a first-class honours degree in Furniture and Product Design from Nottingham Trent University. Her last two years of study focused heavily on sustainability, and she also created a greenwood chair (below left), made in managed woodland without electricity. 'Working with wood from the felling stage to the final finishing using a foot-powered lathe gave me a real appreciation for the wood and the importance of managing it responsibly', she says.

During her placement year she worked for a charity making products for disabled children, and then spent six months in Norway at a design studio in the fjords.

Recycling matters

Jennie lives in Surrey but helps run a social enterprise, St Albans Wood Recycling, in Hertfordshire. The business operates by collecting scrap wood from the construction industry and other producers of wood waste to help reduce the amount needlessly going to landfill. The wood is sorted and anything reusable is then sold to the community at affordable prices.

It's also made into products such as simple furniture, planters, bowls, wooden ornaments and other products which are sold in the shop which is based on site, and at Scallydogs on the Hatfield Road. As is common practice at wood recyclers, timber that cannot be reused is sold as firewood or gets chipped for use as biofuel.

Design aspirations

Jennie's first job was with cabinetmaker Ian Spencer in London, where she learned about high-end design and other more practical skills. She then saw an advertisement for a position at St Albans Wood Recycling.

Small blanks are ideal for recycling into a range of bowls

Laminating timber is the prelude to creating a patterned turning blank

Laminated wood is a typical design feature of Jennie's signature bowls

'I came across this ad for a furniture designer there, and discovered that the job combined my perfect mix of interests: working with wood, designing furniture, helping the environment and – most importantly for me – helping others. The business offers training and work opportunities to the unemployed or people with troubled backgrounds, and it makes a big different to their lives.'

All and sundry

Her position as assistant manager alongside the founder, Geoff Deans, means she mucks in with everything that's thrown at her in what is a dynamic and lively environment.

I do get looks when I'm picking up and shifting heavy piles of wood, or even when customers come into the office and see me working, as I'm the only female here. I don't react to it, though; I prefer to show people that I'm just as capable as any man. I hope in a way I bring a feminine touch to the business, and I want to stay as long as possible and help to grow the company as it's such a worthwhile project.'

Skills matter

Jennie added: 'I love the fact that every day is different, and I get to meet and work with people from all walks of life. It can be challenging, but working here has also helped me to produce and sell my own work. For example, I regularly sell turned wooden bowls through galleries and exhibitions. At the end of the day, I say: no industry is off-limits to women. If it's a job you love doing, that's all that really matters.'

Geoff Deans, who started the business after leaving an IT career in the City, added: 'Gender is immaterial. Jennie is packed with skills and is pleasant and bright. Also, she's passionate about what we do here, as I am, and that's what makes it all work.'

FURTHER INFORMATION

- St Albans Wood Recycling
- 01727 568202 or 07880 528407
- stalbanswrp@aol.com
- www.stalbanswoodrecycling.org.uk

BY PETER PARFITT

A modern classic

I had some really rough oak boards in the workshop, waiting to be burnt as they were full of knots and splits. As the last moment they were reprieved and I decided to see if I couldn't make something out of them. Here's the result...

The Gothic style is easy to imitate, and there are plenty of details available on the internet to help you get designs and proportions looking right. There are several classic proportions for the Gothic arch, but so long as a pair of arcs intersect and the curves start level with the centre of the arc, you can't go far wrong.

In this project I've done my best to avoid using any of the big shop machines. A good sander, jigsaw, router and drill should be all you need.

A simple design

I wanted to retain the twisted character of my oak rejects but ensure that the surfaces were smooth – perfect work for my new Festool Rotex 150 sander. The general design I came up with is shown in fig 1.

I've done some work with Gothic arches before and knew that these lend themselves well to chunky items like the legs of benches. The secret is to rough out the design at full scale on either paper or old cardboard to begin with. Then, when the various curves look about right, you can make a final scale drawing from which to take the key measurements.

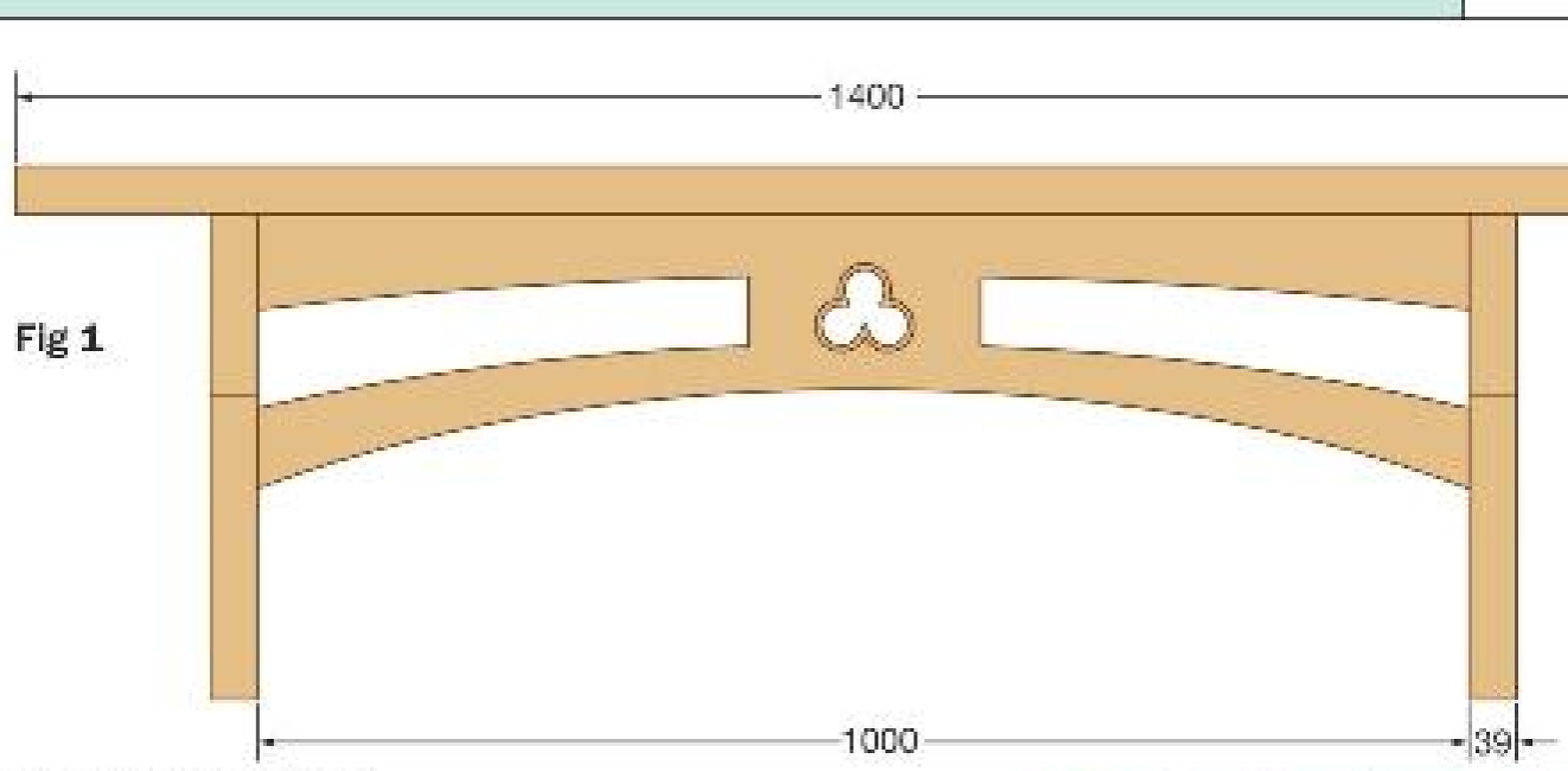
I had three pieces of oak; the largest piece would form the seat, the smallest would produce the legs and the other piece would be used for the supporting frame. The sizes of my stock and the location of major defects dictated the design and proportions of the bench; you can size yours to suit what you have available.

Preparing the stock

When I went to the workshop to start the coarse sanding I had visions of using up a complete morning. But the Rotex 150 is more than just an eccentric sander and can operate as an extremely efficient rotary sander too. Using this latter mode, with a coarse 60 grit paper, I was able to clean off all the rough sawn surfaces on the three pieces of oak in less than 40 minutes.

My three pieces of wood were now recognisable as oak, and the beauty of the grain was clearly evident. However, the large piece (destined to be the bench top) was very uneven, and also had a slight warp which would make the butting together of the legs and the frame rather tricky. I had to sort this out.

Fig 1



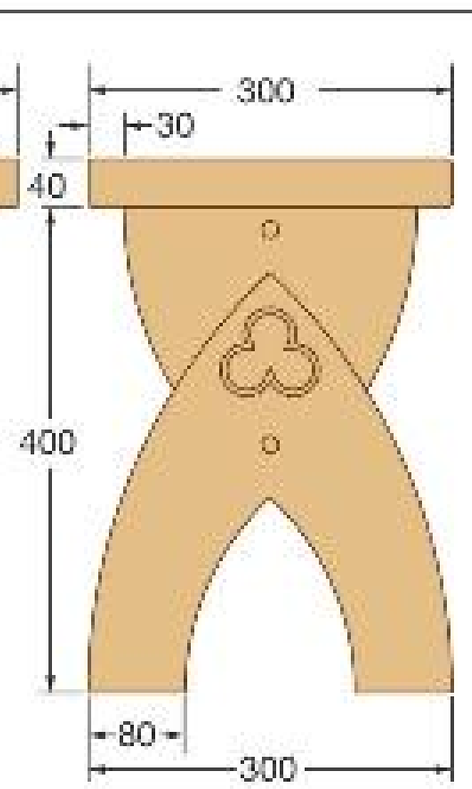
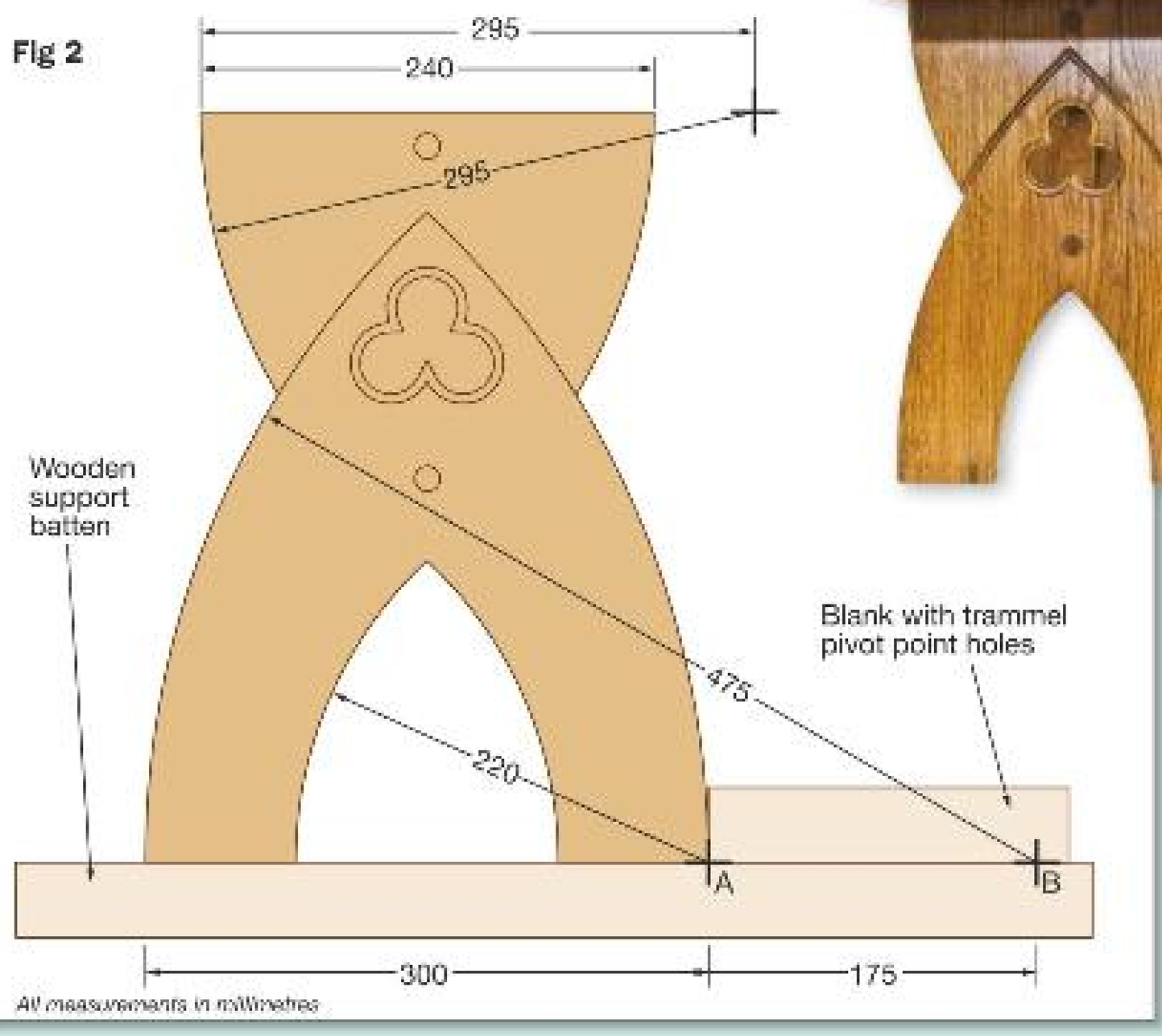


Fig 2



Face sides and edges

Good carpentry needs to start from a reference edge and face that are straight and flat and at right angles to each other. My boards were all over the place, and I needed to get the surfaces that would be in contact to be flat and straight. I started by planing one edge on each board to form a face edge. I used my surface planer, but could equally well have used a hand plane or jointer.

With a good face edge I could cut the boards to length and at right angles to that reference edge. This meant that both leg blanks could be cut, and the ends could be trimmed from the bench top and the piece that would form the frame.

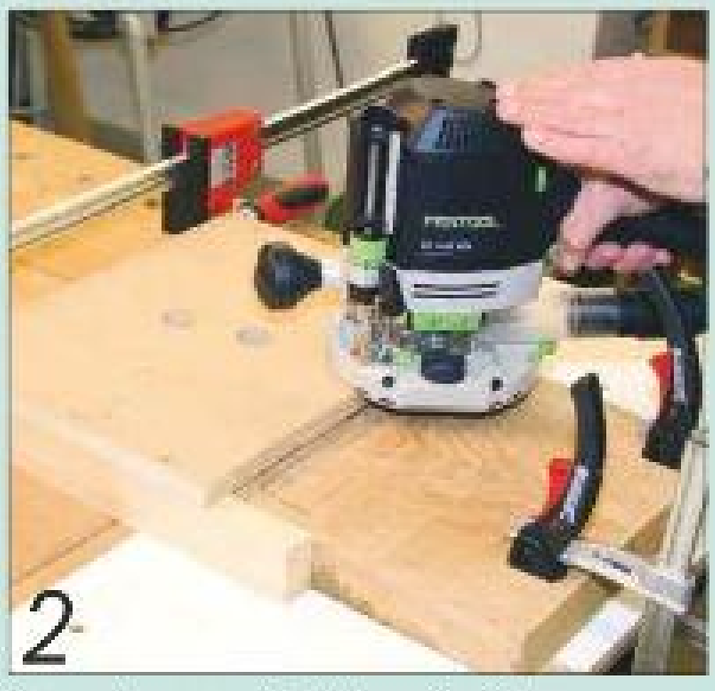
Getting a good fit

If the frame and legs were to fit against the underside of the bench top, either the whole of it would have to be flattened to form a full face side, or a small section of it could be machined to match the footprint of the leg and frame assembly. I chose to flatten an I-shaped area or channel just a little bigger than that footprint, and marked the shape out accordingly.

The flattening jig

A router sitting on a carriage that slides on a smooth flat surface is the basic idea for the jig I devised to flatten the I-shaped target area. It was made from workshop scrap, and consisted of a pair of 44mm wide wooden guide battens joined across the top by a piece of 19mm mdf, **photo 1**. The edges of the mdf have to be square to the battens. The distance between the battens was just 3mm more than the widest measurement of the oak bench top. The carriage slides on the workbench with one guide batten pushed against the planed face edge of the oak top.

The levelling jig slides over the oak bench top to rout out the I-shaped channel for the frame



The router runs against the ends of the jig to cut the ends of the channel

The completed channel in the underside of the bench top looks like this

4

The mdf router trammel has three pivot point positions, as shown in fig 2 opposite

The guidebush in the router trammel forms the perfect holder for a pencil

Insert the router in the guidebush and cut the grooves. Note the end stop at the left-hand side

The grooves in the legs have now been routed; it's time for the jigsaw cuts

Fit the trammel bar to the jigsaw and make the curved cuts on each leg

To form the trefoil detail, drill three 35mm diameter holes in each leg...

...and remove the centre section with freehand cuts using the jigsaw

Position the frame board and legs on the top and mark the clearances

To keep the router in the correct place, I drilled two 30mm diameter holes in the top of the mdf to take a guide bush attached to the router base. These two holes were offset and positioned so I could make the required channel in two passes using a 16mm cutter; they're clearly visible in **photo 2**.

Cutting the channel

I used the outer edges of the mdf on the carriage, again with the same 30mm guidebush in place, to cut the top and bottom parts of the I-shaped channel where the legs would fit. The carriage position was judged by eye and it was then cramped in place for each pass with the router.

It was also essential to get the router depth of cut spot on and to keep it at that depth throughout the cutting operations. In order to get the correct depth the lowest point on the oak needs to be found, which is where there is the largest gap under the carriage. Once that's found, set the router to cut 1mm deeper, registering from the top surface of the mdf on the carriage.

It doesn't matter in which order the cuts are made, but the carriage must always be in contact with the workbench below, and the reference batten must be kept against the face edge of the oak bench top.

After routing out the channel to my satisfaction, **photo 3**, I drilled the 16mm counterbores and 6mm clearance holes in the bench top that would be used to secure the legs (with two screws each) and the frame (with three).

Going Gothic

My leg blanks were 400mm high, 300mm wide and 39mm thick. I made a number of drawings, and eventually settled for the design shown in **fig 2**. The top of each leg is 240 mm wide and the radii of the Gothic arcs are 220mm, 295mm and 475mm respectively. These curves could be cut on the bandsaw, but I decided to use my jigsaw to show that really good results can be achieved with basic tools.

My design requires the two 475 mm radius arcs to form the lower edges of the legs. These then continue upwards as a V-groove detail to the point where the arcs meet. I used the router with a home-made trammel to create the grooves, and the jigsaw with its own trammel to do the cutting out. The jigsaw could be used freehand, but this needs more care during cutting. I planned to make the router cuts first.

Trammel time

My trammel was made from an offcut of 10mm thick mdf, but almost any thickness will do so long as it's thicker than the guidebush flange and not so thick that the V-groove cutter can't reach through it.

I marked the centre for my 30mm

Use a curved lath to mark the various curves on the side of the frame board

Cut the trefoil detail as before, then cut and sand the two curved cutouts

Screw the legs to the frame board first, then attach the top to the frame and legs

Fill all the counterbores with stained wooden plugs and apply an oil finish

guidebush hole first, and then added the positions of the holes for the trammel pivot points at 475mm, 295mm and 220mm from the centre of the guidebush hole. I then drilled a 30mm hole with a Forstner bit, **photo 4**, to take the guidebush.

Cutting the grooves

The V-groove cuts all start from an edge of the leg blank but must end precisely where they meet the other groove. It's very easy to set this up so that the cuts end exactly where required. First, set up the home-made trammel and select a 10mm guidebush. These bushes have a thread which is almost exactly 30mm across. Insert the guidebush, thread first, in the 30mm hole in the trammel.

This forms the perfect holder for a pencil, **photo 5**, which is used to mark each of the arcs. Before each groove is cut it's easy, without the router in place, to see where the trammel arc should end and to cramp a stop in place, **photo 6**. I was then able to use the router knowing that I wouldn't cut beyond my mark.

Cutting the curves

I cut all the grooves on both leg frames in this way, **photo 7**, and then used the jigsaw with its own trammel to do the cuts that shape the legs, **photo 8**. There was no need to set up any form of stop with the jigsaw trammel as it's easy to see the progress of the cuts. Making the jigsaw cuts in the centre of the grooves left neatly chamfered external edges on the frames.

Cutting the trefoil

I added some additional detail to the leg frames by drilling three symmetrically placed holes 35mm in diameter near the apex of the V-grooves and about 3mm from each other, **photo 9**. After drilling the holes, I used a bearing-guided coving cutter in the router to produce the interlocking cove. I then cut out the centre portion with freehand cuts using the jigsaw, **photo 10**.

The final operation on the legs was done once the frame was cut to shape. I needed two 6mm clearance holes, pre-drilled with a 16mm Forstner bit, for wooden plugs.

The central frame

This frame provides additional support to the legs. It was difficult to give this much Gothic character, but the addition of its own trefoil detail in the centre certainly helped.

I cut the frame board to length, set it *in situ* between the legs and marked each end where the trefoil detail and bottom arch of each leg needed clearance, **photo 11**.

I then laid the frame board on my bench and used a thin strip of oak, bent to shape using cramps and a centre block, to create the shape of the lower curve and the two internal cutouts, all of which I marked with pencil, **photo 12**.

Once I was happy with my layout, I cut the curves using my jigsaw and added the trefoil detail at the centre as before. I applied coving cuts to both sides of the holes to provide symmetry, then sanded all the cut edges, **photo 13**.

Finishing and assembly

Once all of the cutting and shaping was complete, I sanded everything down to 220 grit. My first assembly task was to screw the legs to each end of the central frame with 140mm stainless steel Spax screws, **photo 14**. I then turned the assembly the right way up and carefully set the bench top in place.

A pair of 80 x 6mm screws secured the top to each of the legs. I then used three 60 x 6 mm screws to secure the top to the frame. I had to take care to ensure that the centre screw was not so long that it penetrated the top of the trefoil detail.

Final touches

Rather than using 16mm oak plugs to fill the counterbores, I thought a contrast might look interesting, so I used walnut instead. These were fixed with Cascamite glue, darkened with some water-based filler.

Once everything was dry and the plugs had been trimmed, I did a final sanding at 220 grit and applied two coats of Osmo Transparent Oak UV Protection, **photo 15**. This is easy to apply using a brush and needs no sanding between coats. It's by far the best outdoor oil I've ever used, and will help my new garden bench last for many years.

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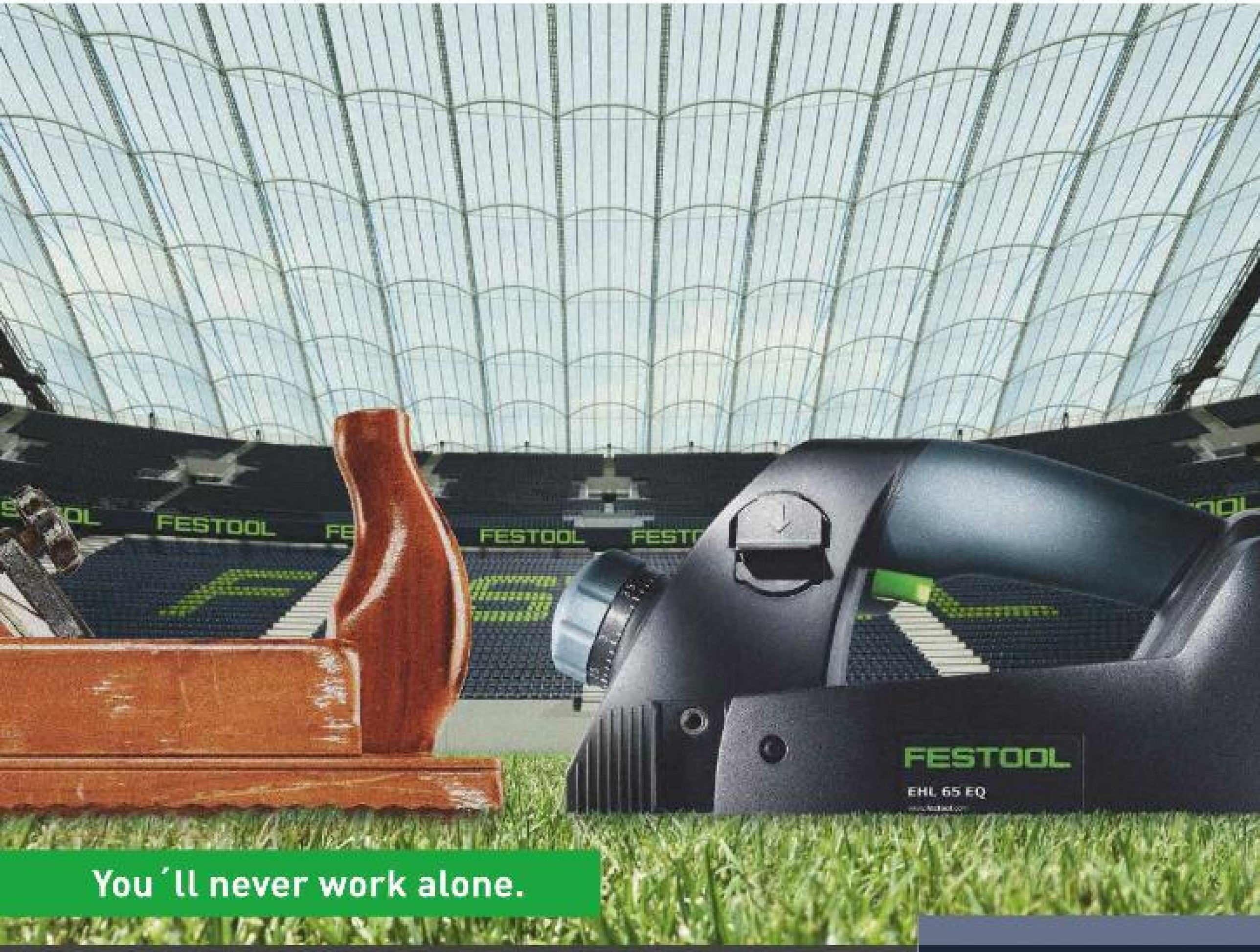

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BY ANDY STANDING

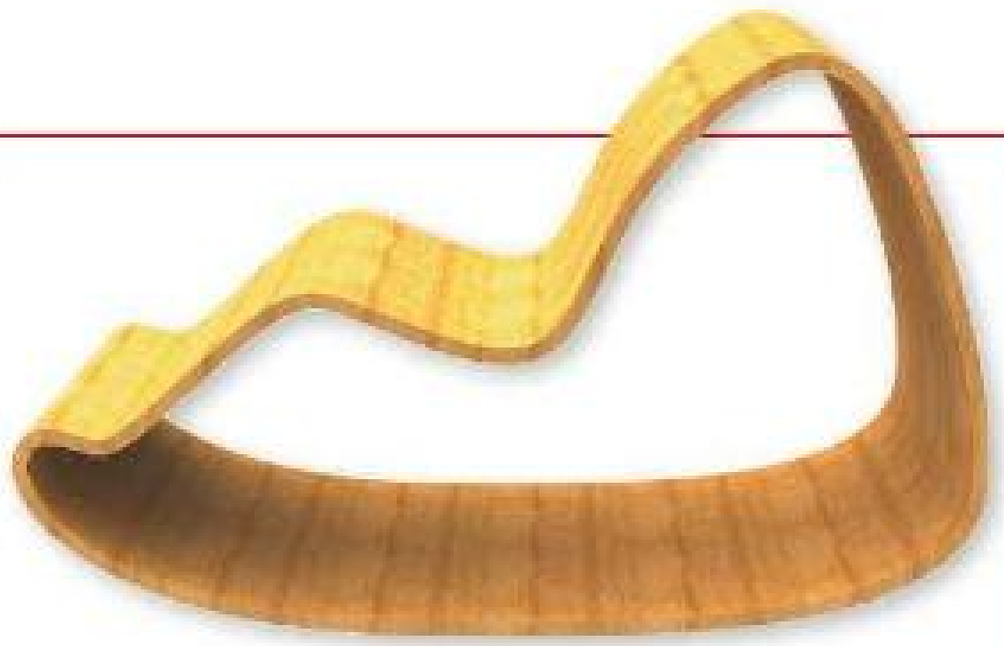
I J K L are for...

The aim of this series is to provide you with snippets of interesting and, I hope, useful information concerning all aspects of woodworking. It will explain some of the mysteries for those new to the craft, and will I hope inspire and entertain everyone else

The idea of pottering through the alphabet and looking at woodworking topics that begin with each letter in turn generates some unusual entries. But it's an interesting exercise in lateral thinking, because in a curious way one topic seems to lead on to another, even if there's no obvious link between them as you first consider them. Here's my latest batch; please read on, and see what useful nuggets you can pick up from my trawl through subjects beginning with the letters I, J, K and L.

INLAY

An attractive way to enhance a piece of furniture is to apply some inlay. Inlay lines or bandings can be bought from veneer suppliers and are inset into table tops or any other component using a router to cut the groove. Specialist inlay cutters are available that match the width of the lines. There are many different inlay designs, from single coloured lines to more complex multi-coloured patterns.



INSPIRATION

This is perhaps the most difficult aspect of woodworking to quantify. All but the most basic constructions require a certain amount of design and creativity, and sometimes this is difficult to find. But there are, of course, huge resources to call on. You only have to look around you at the things you like to find features that can be incorporated in your designs. Furniture books and the internet are also excellent places to find inspiration. The use of veneers and sheet materials also allow almost unlimited possibilities. The problem is that you can get too carried away and end up with a design which is beyond your capabilities to make.

INFEED

The infeed table on a woodworking machine is the surface on which the workpiece rests before it reaches the cutter. So on a surface planer the infeed table is the right-hand table, which can be adjusted to set the depth of cut. Unsurprisingly, the table on the opposite side of the machine's cutter is called the outfeed table.

JIGSAW

The jigsaw is a powered saw used to cut shaped or curved components. It's one of the most useful portable power tools as, with the correct blade fitted, it can be used on a wide range of materials. It uses a reciprocating motion, cutting on the upstroke, so that the saw is pulled downwards onto the workpiece. The first portable powered jigsaws were produced in the 1940s. Current models have integrated dust extraction, variable oscillating motion, LED worklights and even lasers to guide the blade. Professional models will cut through thick hardwood, and are particularly useful for rough-cutting large sawn boards ready for further machining.

JIG

In the course of your woodworking you will find the need for endless different kinds of jig. These can be simple workshop-made jigs such as a bench hook or shooting board, or more complex commercial designs such as a pocket-hole screw jig for assembling carcasses or a dovetailing jig for forming complex joints.

A jig is basically a device which either holds the tool or the workpiece in position to allow an operation to be completed accurately. Jigs are especially useful when several identical parts must be produced, and avoid the risk of measuring mistakes and inaccurate cutting.

JOINT MAKING

This is one of the core woodworking skills. Understanding timber behaviour and deciding on the correct joint to use is crucial to the success of any project. Although timber seems like a fairly friendly and easy-to-work material, it must be jointed correctly; otherwise it can twist and split, no matter what fixings you use. It's well worth practising your joint cutting on offcuts if you are using an unfamiliar joint. Most joints are relatively easy to make, as long as you understand the principles behind them. Of course you must be precise and accurate in your working, and there are many power tools and machines that can improve accuracy and speed up the process. The biscuit jointer shown here is a prime example.

KICKBACK

Kickback is something to be avoided in the workshop. It refers to the tendency of some woodworking machines to grab the workpiece and eject it forcefully back towards the operator. It can happen on table saws, spindle moulders and router tables. It can also refer to the action of power tools when they jam in a workpiece or get overloaded.

Kickback is generally caused by carelessness or poor working practices; chainsaw kickback is perhaps the most dangerous of all. Ripping timber on a table saw without a riving knife fitted risks kickback. Trying to take too deep a cut with a router or moulder is also risky. Happily, modern spindle blocks and router cutters are designed to minimise the problem by incorporating cutter limiters that restrict the amount of material that can be removed with each pass.

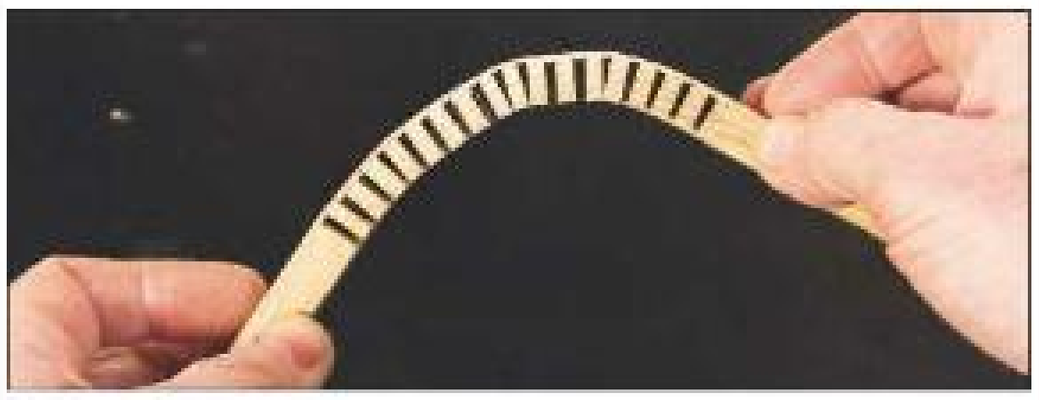
KILN DRYING

Before use timber must be seasoned, meaning that it must be allowed to reduce its moisture content and bring itself into equilibrium with its surroundings. This can be done simply by stacking the boards out of doors but under cover, and allowing the moisture to evaporate naturally. Then, after a year or so, they can be brought inside to continue the process until they're ready for use. However, this is a pretty slow process.

A far quicker way to season timber is to use a kiln. This is not the same as a pottery kiln, though it does use a certain amount of heat. In fact commercial kilns use steam to season the timber, coupled with large fans to expel the moisture. It's viable to construct kilns for the smaller workshop using a sealed, insulated box with a dehumidifier inside. These are ideal for seasoning small batches of timber, and can be remarkably efficient.

KICKER

A kicker is a batten that is fitted above a drawer to stop it from dropping as it is pulled out. In a chest of drawers the runners of the drawer above act as kickers for the drawer below, and it's only the top drawer that requires a separate kicker.



KERF

A kerf is the amount of material removed by a saw blade from the timber it's cutting. Different blades leave different-sized kerfs. Obviously a chainsaw makes an extremely wide kerf, wasting a substantial amount of timber, whereas a bandsaw can take a very narrow kerf, preserving more of your valuable wood. When marking out your timber you must always take into account the width of the saw kerf if you want accurate results.

Kerfing also refers to a technique used for bending timber. It involves making a series of partial cuts across the grain, leaving a thin section on the face that can be bent.

LATHE

There can be few people who don't know what a lathe is. Although it's one of the simplest of machines (and, incidentally, the only woodworking machine without a cutter or blade) it's also the only machine that can produce a complete project from rough timber to finished, polished article.

Lathe sizes are defined by the distance 'between centres' which refers to the maximum workpiece length, and 'swing' which refers to the maximum diameter of the workpiece over the lathe bed. Many lathes now have electronic variable speed, making them easy to use.

Woodturning is a considerable skill and takes practice and patience. However, it's immensely rewarding, and as all you need is a lathe and a selection of turning chisels to get started, it's easily accessible. Skilled turners can produce beautiful objects from often unprepossessing scraps of timber, and it can be a good way of using up small offcuts.

LAMINATING

This is a useful technique for woodworkers. It involves building up a component by gluing together a number of thin layers. Plywood is the best-known laminated construction. You can laminate layers of veneer to create curverd components. You can laminate lengths of timber to make structural beams, known as Glulam, which avoid any of the defects that might be present in a single piece of thick timber. There is also laminated flooring, where a thin layer of solid or 'printed' timber is bonded to a man-made board such as mdf, though where veneering stops and laminating begins, I'm not sure.

LIPPING

Lippings are used to cover the edges of man-made boards. They can be a veneer, solid wood or a plastic strip. Some lippings, particularly those for melamine-faced chipboard, are supplied pre-glued and can be simply stuck on using a hot domestic iron to melt the glue. Lippings can also be used for visual effect and as a strengthening method. You can apply a thick timber lipping onto the front of a thin shelf by rebating the shelf into the lipping. This will increase the rigidity of the shelf while giving it the appearance of a thicker board.

LACQUER

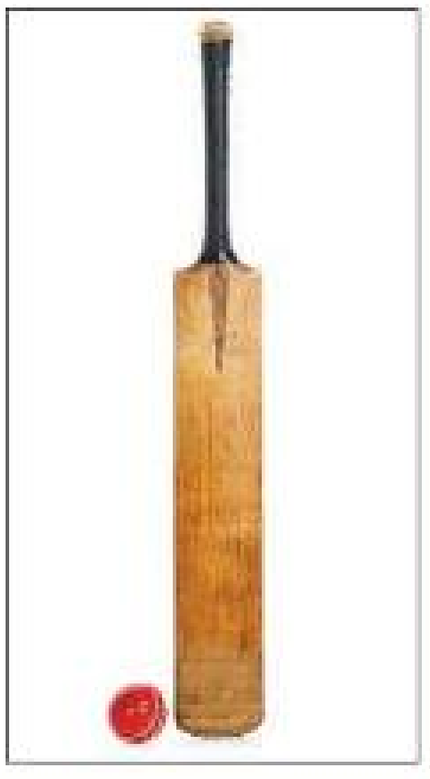
Lacquer and varnish have now become interchangeable terms to describe a finish, usually clear but sometimes coloured, that is applied to timber. Originally lacquer referred to the finish made from the secretions of the lac insect, which is also used for making shellac. Today there's a wide range of different lacquers available to the woodworker, from two-part acid-catalysed lacquers through to acrylic water-based versions. These finishes are usually applied using a spray gun, though some formulations are suitable for brushing on. Solvent-based lacquers give off a heavy vapour and a suitable respirator mask should be worn for protection. The trend is moving more towards the water-based lacquers, which are less harmful to the user.

LOPER

A loper is an extending or hinged rail that's used to support a fall flap, particularly on a desk or bureau. Lopers usually come in pairs. Even Google doesn't know the origin of the word…

LINSEED OIL

Oil finishes are easy to apply and can easily be renovated simply by applying a fresh coating. Linseed oil is a traditional finish which is not much used today, as it's slow-drying and not particularly durable. Boiled linseed oil dries more quickly. I have fond childhood memories of endlessly oiling my cricket bat with linseed oil to harden the willow. It made the bat look nice and it smelt lovely! Sadly, however, the process did little to improve my lamentable standard of batting!



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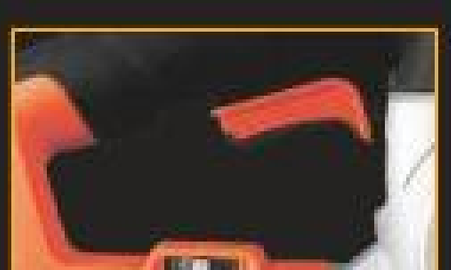

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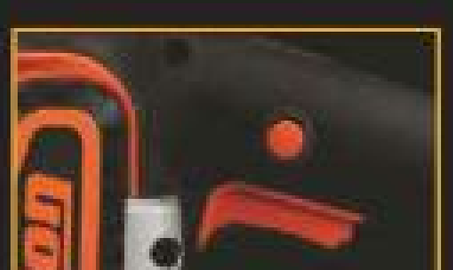

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BY ANDY KING

Dust control

Give most woodworkers a few bob to spend, and the last thing they'll think of will be dust control. However, recent growing awareness of the health problems dust can cause has put it right at the top of the agenda

An HSE seminar I attended some years back presented lots of information about nasal cancer amongst UK woodworkers, predominantly those who machined native hardwoods. Surprisingly however, UK medical research has shown no direct link between mdf and cancer.

But who knows? It may be a similar situation to asbestos and manifest itself in years to come. In the meantime, what do we do to deal with the dust control problem in our own home workshops?

Filtration stages

Go back a while and the filtration efficiency of workshop extractors was determined by microns and filtration stages, with the best protection provided by a three-stage process to contain dust as fine as 0.5 microns in size, **photo 1**.

This process usually consists of a holding or collection bag for the main debris, a second filter between that and the extraction motor and the outlet vent to catch the fine dust the bag lets through, and a third filter picking up the dust missed by the second stage so the final air recycled through the exhaust outlet contains only the very finest of dust particles.

1 Wall-mounted extractor systems can filter down to very fine levels

New categories

That classification still rings true for some workshop extractors, but now the smaller portable extractors designed to deal with sanding and routing type waste have a new classification – low, medium and high filtration, simplified to L, M and H.

The L and M options are deemed as suitable for woodworking applications, **photo 2**. Each category rating is based on the percentage of dust released back into the atmosphere, in a similar fashion to the original micron classification.

The range designed for finer dust control has additional safety measures such as anti-static hoses to eliminate the explosion risk of a build-up of fine dust.

2 The latest portable vacs are now classified to deal with finer dust

Extractor types

With a huge array of dust extraction types available, you can fall into the trap of buying one particular type in the belief that it's ideal for your needs, only to find it doesn't do what you want it to do. You need to identify the type of material you want to control and get an extraction system that works accordingly, and it may be that you need more than one.

For example, to collect high-volume shavings and chippings such as those generated by planers and thicknessers, you need a system capable of pulling them away at a fast enough rate to prevent the machine outlet from blocking up. The usual choices here are the wheel-around single-stage double bag type, **photo 3**, wall-mounted two- or three-stage filtered piped systems, **photo 4**, or floor drum types, **photo 5**.

The other choice you have to consider is whether to extract waste from each machine separately, or whether to link waste pipes from several machine to one central collection point. The latter is generally the preferred option for larger multi-machine shops.

3 Bag-over-bag models are ideal for collecting high volumes of coarse waste

4 Mounting a wall extractor can involve long pipe runs that can affect efficiency

5 Drum models can filter to fine levels and are best used close to a machine

6 Bends on a piped system work best if they are smooth and sweep gently

7 Right-angled branches can be a bottleneck, blocking the waste flow

8 The use of blast gates to shorten and even isolate pipe runs is essential

9 Keeping runs as straight as possible maintains a high airflow rate

10 Standard plastic soil pipes work well for a home-made shop extraction system

11 The best extractors have multiple filters to weed out the finer dust

12 Ambient air filters pick up the finest dust missed by your main extractor

The distance problem

The problem with a piped system is that the further away you site an extractor from a machine, the more power is needed to provide adequate extraction. As soon as you start putting bends and branches in, the airflow can drop below the amount needed to draw the waste away efficiently. If you do have to use bends and branches, smooth sweeping bends (**photo 6**) are better as they don't clog so readily as a right-angled branch (**photo 7**). Even if you use a series of blast gates to keep the airflow as direct as possible, **photo 8**, these can still reduce the suction power. Any extractor works at its best when it's as close as possible to the dust port from which it's pulling the waste, and with as straight a pipe run as possible, **photo 9**.

Pipe bores

The main differences between extractors for machinery and shop vacs are the air speed and the air pressure. The drum, bag-over-bag and wall-mounted extractors work on a high-velocity low-pressure (HVLP) principle, so a bigger pipe moves a lot of air quickly, with the higher airflow carrying the waste away.

In most instances 100mm pipe systems are enough, and pipe runs can be made from standard plastic soil pipes, **photo 10**. Smaller workshops can get by with narrower 63mm pipes, but the airflow is lower so the pipe runs need to be shorter.

Small shop vacuum cleaners work on the opposite high-pressure low-volume (HPLV) principle, but their small-bore pipes move very little air by comparison, so they can be overwhelmed by large volumes of waste. They're very good on small power tools to deal with dust from routing and sanding, but you need to get a fine filtration model to capture the really fine dust, **photo 11**.

The finest dust

It's in this particular area where the current changes in dust categorisation are being targeted, as it's the finer dust from sanding and routing that create the biggest health issues. It's the dust you can't see that causes the problems, so dealing with this is what extraction is really all about.

To clear up any really fine ambient dust, there are air filters designed solely for this purpose, **photo 12**. They're not for bulk extraction, but simply to filter out the stuff your main extractor allows to escape. These are normally fitted high up in the workshop, and to work efficiently they have to be sized to suit the volume of the room they're in.

Now let's have a look at some of the different extractor types in more detail.

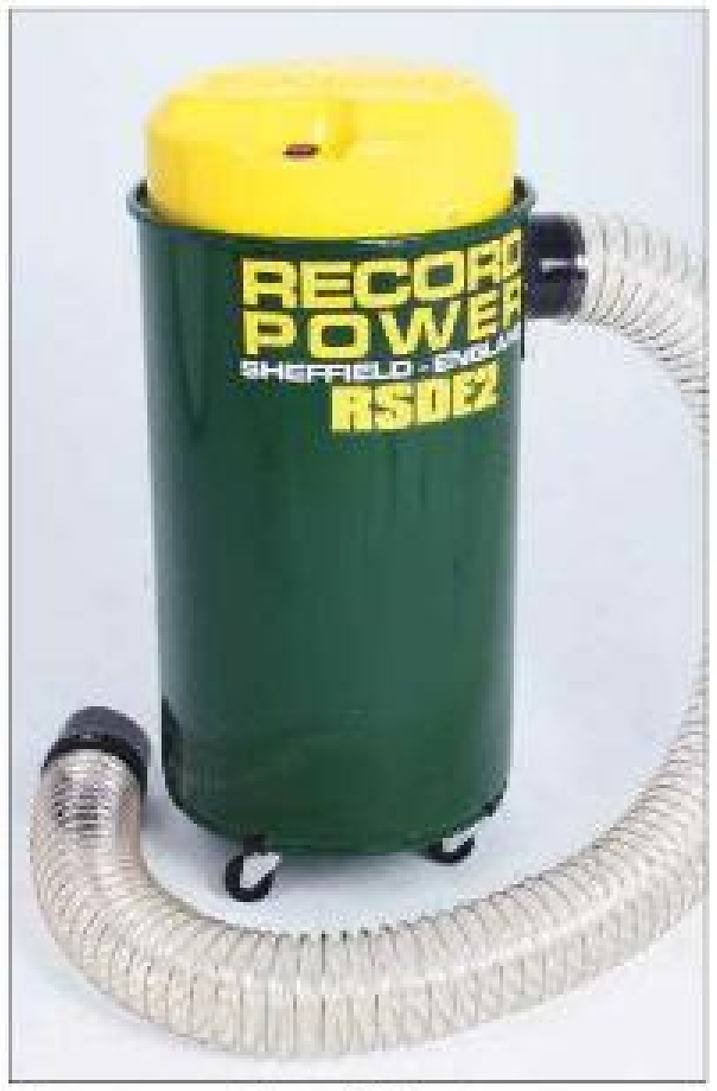
WALL-MOUNTED DRUM EXTRACTORS

These extractors usually have a higher specification than bag extractors for dealing with finer dust. Two options are available. The wall-mounted type, **photo 1**, simply dumps the waste into a collection sack, as does the floor-standing drum type, **photo 2**, with the drum replacing the sack.

You can get fine filtration (as low as 0.5 microns) from them, but the entry-level wall and drum models are often unable to remove finer dust. Getting down to such fine filtration levels normally involves a triple-filter method. The air is drawn through into the filters, the heavier waste dropping into the sack or drum, while the dust goes through three stages of filtration to weed out all but the very finest of particles before the filtered air is released back into the atmosphere. Usually there is a felt or cloth filter and a paper baffle sitting in the drum, **photo 3**; then a paper filter bag is fitted over the top of the baffle filter, **photo 4**.

Here the filters themselves trap the dust; this makes it harder for the air to flow through them, so their efficiency can drop away. Work really fine dusty timber rather than making volumes of shavings, and you can see the problem.The bag or drum may show little in the way of waste collection, but the filters will become clogged up and need cleaning or changing to regain efficient airflow, **photo 5**. A fine-filter drum type is best sited close to a machine, keeping airflow loss to a minimum, but is maybe not ideal for working around, as it can get in the way of your movements.

1 Wall-mounted systems simply dump the waste into a plastic sack



2 Drum types collect within the drum itself, so will need regular emptying

3 Fine filtration consists of an inner filter bag and one pr more baffle air filters

4 Fitting a paper filter over the baffle gives the third filtration stage

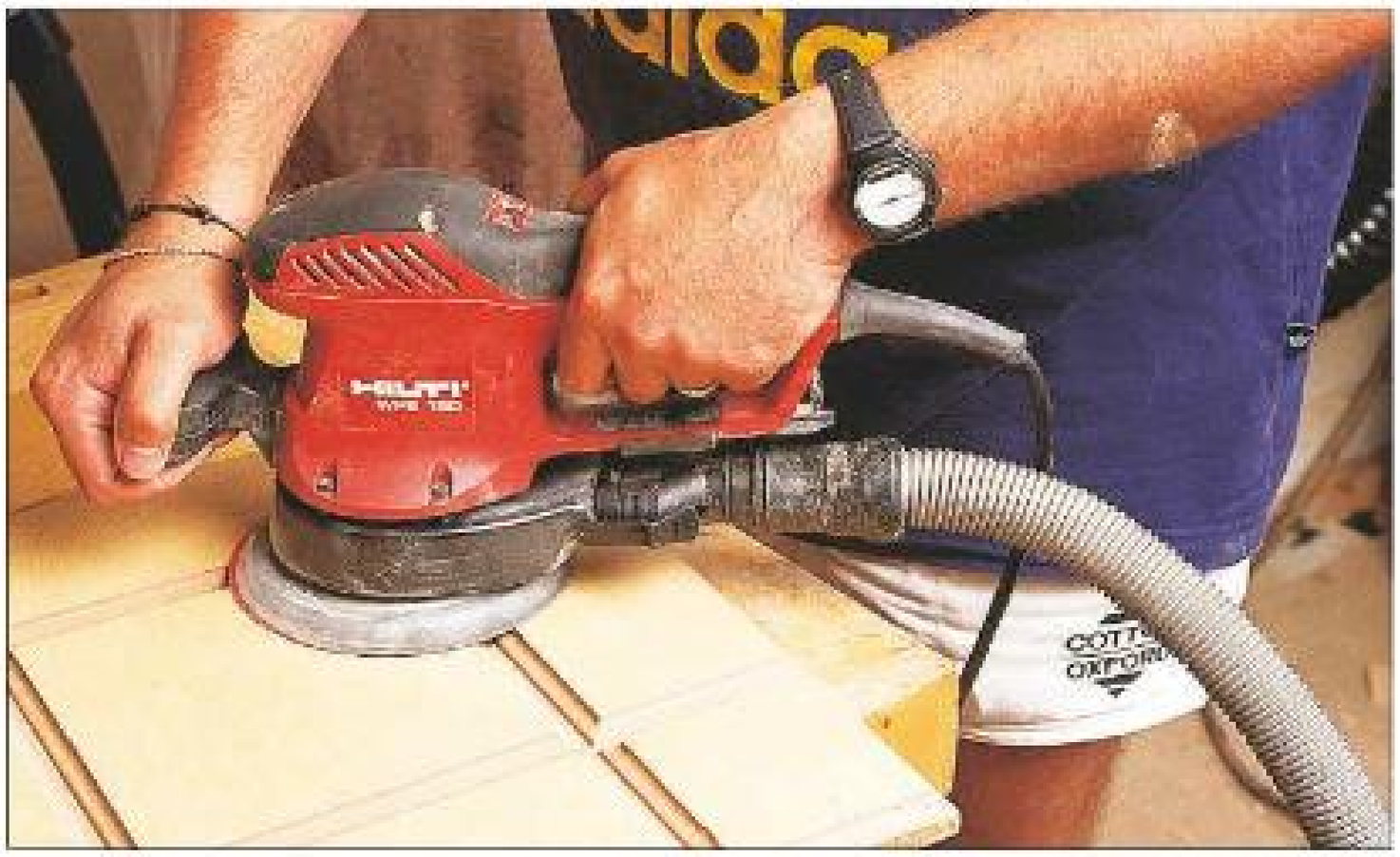
5 You have to keep paper filters clean to ensure that they remain efficient

BAG EXTRACTORS

The double-bag or bag-over-bag types are great workhorses, and ideal to wheel from machine to machine if you don't want a piped system, but they do take up a fair bit of space so you need to plan your workshop well if you use one.

Their disadvantage is that the finer dust can be dispersed back into the air as their filtration levels aren't good enough, especially with the double-bag systems. This isn't a failing. They're designed to handle heavier shavings and chippings, with the upper cloth bag acting as an air reservoir and basic dust filter while the lower polythene one collects the heavy waste. When you're picking up finer dust, you can see that the loose weave of the cloth allows the dust to escape back into the atmosphere. Different bags are available to act as finer filters, but you need to check what level of dust they filter out.

Side-by-side dust bag and multi-inlet types are also available. While the single-bag types may not be man enough to be used for a plumbed-in system, the bigger models can be a good option.



Smaller shop vacs work well with finer dust from bench sanders

SHOP VACUUM EXTRACTORS

This is the area where the legislation is due to change for on-site work with the new L, M and H classifications mentioned earlier. These models are designed for use with hand-held power tools and the finer dust they can produce, as well as for general workshop cleaning-up – much the same as a domestic vacuum cleaner.

There are also dual-function models that suck up liquids as well as dry matter, and some have a blower function which can be useful for cleaning out inaccessible areas on machinery with a quick blast of air.

For sanding especially, a shop vac can be extremely efficient as the sander sits on the surface, ensuring a good vacuum pressure so the waste gets pulled away. However, routing is not so good unless the router has a cowl of some sort to create a closer fit to the cutter area and prevent dust from escaping.

Some shop vacs have a power outlet built in so the tool plugs directly into the vac. Once the tool is operated the vac comes on automatically. Better models also incorporate a run-on, so the vac runs for a few seconds after the tool is switched off to pick up any remaining residue and empty the hose.

Filters on these vacs can be a simple collection bin with a small sponge filter over the fan that offers little dust control. Efficiency can be increased by fitting a paper collection bag, or for the finest filtration models, a combination of a collection bag, filter bag and baffle, much the same as the drum type extractors. However, you have the same problem here with the decrease in suction once the filters start to clog or the bag becomes full.

ON-BOARD DUST COLLECTION

Many power tools, notably sanders, now come supplied with on-board dust collectors. Some are simple token efforts – a cloth bag that collects the bigger particles while the fine stuff escapes through the weave – but better ones have a lighter rubberised cotton bag for finer dust control, **photo 1**. Others have a disposable paper bag that's more effective than a basic cloth type as the paper catches and retains more dust, **photo 2**. Bosch especially have some excellent filter collectors that work very efficiently. However, in reality, a dedicated extractor is always the way forwards if you care for your health.

1 The best on-board dust collectors can collect a lot of the waste

2 Bosch have a great system that collects a high percentage of waste

AMBIENT AIR FILTERS

The dust collected by an ambient filter is quite an eye-opener!

An ambient air filter can be as important as a bulk waste management system, especially where very fine dust is concerned. Any dust escaping the initial extraction method goes into the atmosphere, and it's this fine stuff that causes most damage to your health as your respiratory system can't filter out these fine particles.

Dust this fine is usually invisible to the naked eye, but you can often see it in a bright shaft of sunlight, and after finishing work the film of dust that settles around the shop is a good indicator of what flies around.

If you look at an ambient air filter after it's been working for a couple of hours and see what it's managed to capture, you'll realise what an important machine it is to have in any workshop, especially if you spend all day in there tackling a long bout of machining and bench work.

BY KEITH SMITH

YOU'VE BEEN FRAMED!

Many gardeners have a cold frame – a curious misnomer for a growing habitat that aims to keep young plants warm! Like any other outdoor timber structure, it'll probably need a little maintenance as time goes by

Back in the winter of 2003 I built an oak-framed greenhouse, which was featured in the June 2004 edition of *The Woodworker*. To one side I attached a cold frame with oak opening lights fitted with laminated safety glass, **photo 1**. Nine years on, the greenhouse has aged gracefully but the opening lights to the cold frame have really suffered, **photo 2**. Last winter's heavy snow, **photo 3**, was the straw that broke the camel's back!

Open joints

To assemble the opening lights I'd used bridle joints, which rely on glue for the majority of their strength, and the corners opened up after just a couple of years of weathering, **photo 4**. Finding out why this happened was the motivation for me to begin the exterior glue test I started in 2007.

One of the top joints has now completely failed, **photo 5**, which left me no option but to replace all three opening lights. I think there are several reasons why the joints failed prematurely.

- The oak was treated with a coat of tung oil and then left to turn grey. This allowed water to get into the joints more easily, and the low angle of the cold frame made this problem even more acute.
- I used bridle joints. A fully-enclosed joint such as a mortise and tenon would have been better, as it has a good degree of mechanical strength and the joint itself is less directly exposed to the ingress of moisture.
- I used Gorilla Glue (a polyurethane adhesive), which in my glue test didn't last as well as many other exterior wood glues.

1

This is the oak greenhouse and cold frame back in January 2004

A plan of action

To address these issues, I proposed to:

- assemble the lights with very tight-fitting mortise and tenon joints;
- use Polyproof adhesive instead of Gorilla glue;
- make them much lighter by using 21mm thick oak and fitting 4mm polycarbonate glazing instead of glass;
- leave a small air gap between the opening lights and the wooden frame they rest on by not rebating the hinges;
- fully finish the oak and maintain it regularly;

The oak has now weathered and turned grey, and the joints have failed

The heavy snow that fell last winter dealt the cold frame its final blow

The corner bridle joints began to open up along the glue line many years ago

The joints on the hinge rail were the most stressed and have literally fallen apart

This is my old model Leigh FMT jig. It's now called the FMT PRO, and currently costs about £850

Making the joints

For the mortise-and-tenon joints I turned to my Leigh FMT jig, **photo 6**. This uses a router to produce very accurate round-ended tenons, **photo 7**, and corresponding mortises. The machine can be adjusted to cut particularly tight joints, **photo 8**, which I wanted to produce so they had as much mechanical strength as possible with little room for water to get in.

Making the frames

First I cut all the parts to length and then cut the mortises and tenons. The bottom rail has 35mm wide tenons, the top rail 50mm wide tenons; all are 12mm thick and 40mm long. I then dry-assembled each light so I could measure up for the polycarbonate, adding 10mm to each edge for the glazing rebate.

The FMT jig produces a very clean tenon which should be a perfect fit

I used a relatively oversized tenon 12mm thick for maximum strength

A dry fit made sure that the polycarbonate sheet could move freely within the frame

I cut the slots for the polycarbonate sheets on the spindle moulder

11

I cut a small chamfer on the frame components to help water run-off

I wasn't sure how easy it is to cut polycarbonate, so to be on the safe side I had it cut to size by my supplier. It was quite expensive; the three sheets (one measuring 930 x 505mm and two 960 x 505mm) cost me £120. They'd better last!

A change of tack

I'd intended to bond the polycarbonate into the frame in the same way I'd fixed the glass in the original lights, but on reading the fitting instructions I discovered that the polycarbonate was likely to expand and contract and shouldn't be bonded in at all. So I decided to cut the glazing grooves a little deeper to allow room for expansion, to fit the polycarbonate loosely in them, and then to run a bead of low-modulus silicone glazing mastic round the outside edge of the grooves to seal them.

The polycarbonate was nominally 4mm thick, but when I measured it with a vernier calliper it was slightly thicker at 4.1mm. I wanted a reasonably tight fit, so I cut the grooves 4.3mm wide and 14mm deep, **photo 9**.

A test run

The next job was to dry-assemble the lights again, this time with the polycarbonate sheets in place, **photo 10**. The grooves needed to align at the corners or the polycarbonate would be put under a lot of localised stress. Despite careful cutting I found I had to ease a couple of them to get them to align perfectly.

The final job was to cut a small chamfer off the edges of the stiles and rails, **photo 11**. This will reduce the amount of water that will inevitably collect on such a shallow angled light, and also give a softer edge for the finish to adhere to.

Final assembly

To glue the lights together I used Polyproof adhesive. This needs accurate measuring out of the components, **photo 12**, not least because the manufacturers provide only just enough hardener for the resin. It's resorcinol based and therefore has a red-brown colour, **photo 13**. It's expensive and leaves a very dark glue-line, but it's the only readily available wood adhesive I know of that's completely waterproof, even withstanding total immersion in water.

12

Polyproof adhesive uses a resin hardener, and must be mixed accurately

I glued the lights together, being careful to cover all parts of each joint with adhesive to prevent water getting in, while ensuring that I didn't get any glue in the grooves where it would potentially bond the polycarbonate in place. Once this had set, I left it overnight to cure fully, then ran a bead of silicone mastic all round each light, **photo 14**, forcing as much as possible into the gaps between the wood and the polycarbonate.

13

Its main drawback, apart from cost, is its very dark red-brown colour

14

I applied a bead of silicone mastic to the outside face of the each light

A three-way finish

This time I wanted to apply a clear long-lasting finish to the wood to help keep moisture out of the joints, but it was difficult to decide which would be most durable. So I hit upon a plan, which was to use a different finish on each light and see how well each one lasted.

The left-hand light was treated with three coats of exterior Danish oil, costing £16.36 per litre. This is the thinnest finish, and soaked into the wood well. The right-hand light was treated with three coats of Fiddes Exterior High Build Wood Oil. This has a consistency much more like a traditional varnish, and costs £20.20 per litre. Finally I treated the central light with three coats of Osmo UV-Protection-Oil. This had the thickest consistency and cost £18.02 for 750ml. The three finished lights were then hinged at the top with exterior brass butt hinges and lowered into position.

They're already a hit with the head gardener, as they're far lighter than their glass predecessors and so are easier for her to open and close. Now it's going to be very interesting to see how the three finishes compare in the long term.

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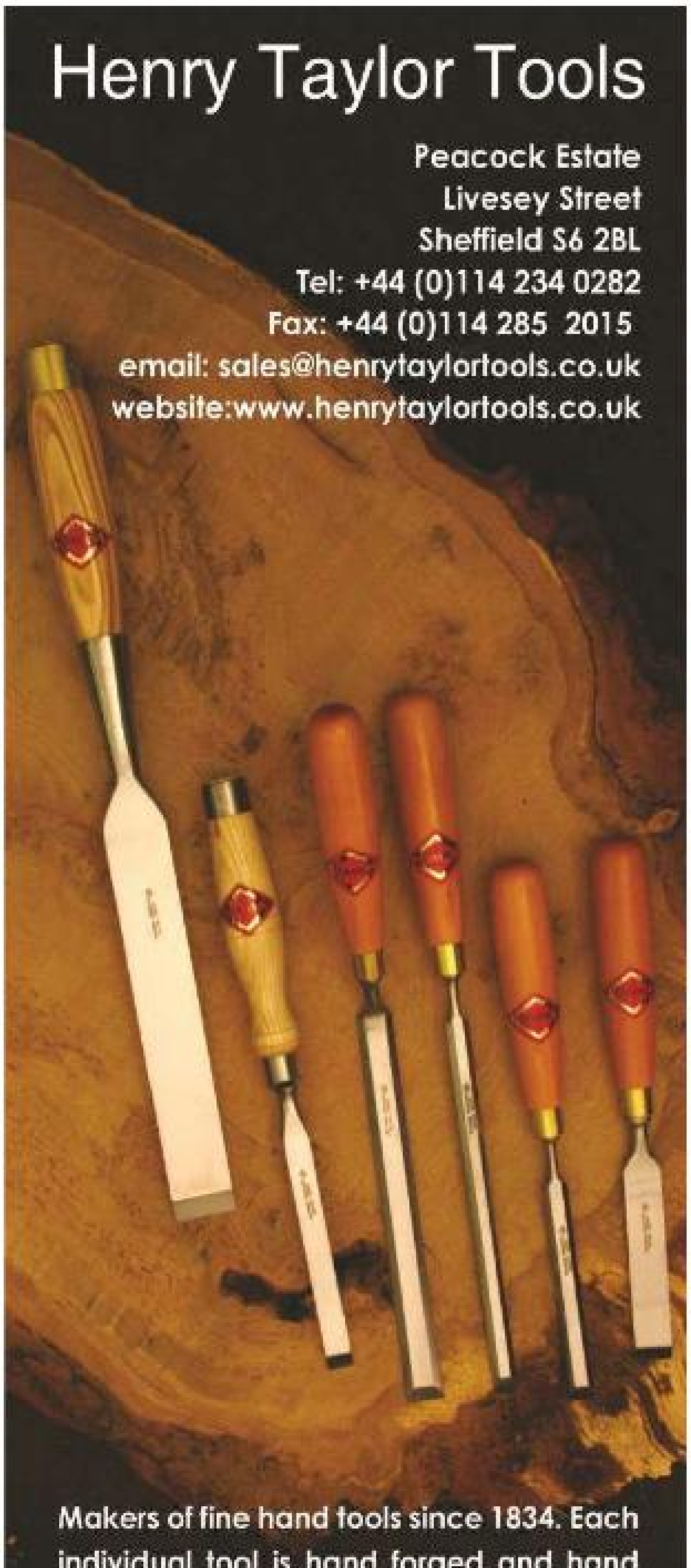

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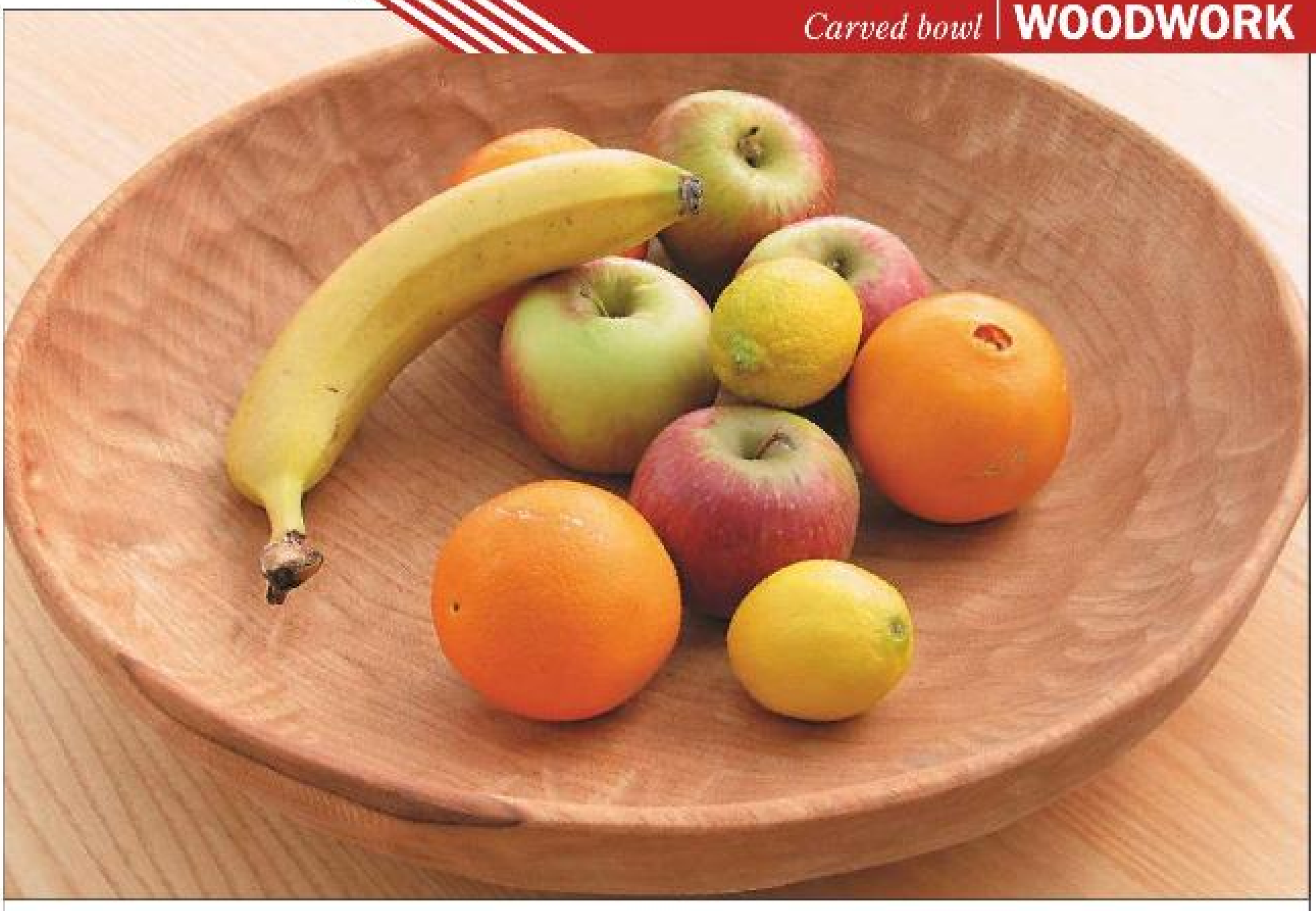


BY PETER BISHOP

Rough and ready

I collect tools if I can afford them. Some get used a lot, others only occasionally. A few have been bought to help achieve a specific task and are then put to one side. My Arbortech woodcarver is one of these

I'm not sure how long I've actually had it, but it must a good few years. I think the last project I used it on were some rustic style garden benches that featured in *The Woodworker* about three years ago. This tool is the baby for high volumes of waste removal and shaping! The cutting disc with its special tungsten carbide tips is fitted to an angle grinder body, and away you go. A recent commission inspired me to buy some wood, dig it out and get cutting!

Buying a blank

I popped up to Whitney Sawmills, my local supplier, and asked what dry English hardwoods they had that were thick and wide. Sweet chestnut, *castanea sativa*, won out on price and availability. The chunk to make this bowl probably cost me less than £40. Labelled as well air-dried, it had been on stick for a number of years but still had a damp centre when I cut into it, **photo 1**. This was both a help and a hindrance.

Although labelled 'well air-dried', the sweet chestnut was still damp in the middle

After cutting a chunk off, I scribed out a large circleand cut it our on the bandsaw

Make the first few cuts well in from the edge until you get the hang of it

The cuts gradually go deeper and deeper, but still leave a good margin all round

Check the depth regularly and leave at least 12mm or so in the bottom

A series of angled cuts made on the bandsaw quickly removes waste from underneath

Held firmly in place, the first Arbortech roughing of the underside follows

It meant that I could cut and shape it a lot more easily than dry, hard stuff... but (and there's always a but) I'd have to work quickly to avoid catastrophic splitting if it dried out unevenly over a lengthy period. I set to work with gusto!

The first cuts

A short chunk was chain-sawn off one end of the plank. I then marked a circle on it and cut the disc out on the bandsaw, **photo 2**. Once it was firmly fixed in place on the Workmate, I was ready to rock and roll. Working outside in the fresh air where the shavings could fly all around, I set about taking a few tentative cuts in the centre. The Arbortech is not a tool that can be treated casually. It takes a while to control the grip it gets on the wood when cutting, **photo 3**, so I started well in from the edge.

Into the swing

It took a while for the rhythm to come back. Sweeping sideways strokes turned out to be best, with shavings flying everywhere. I was soon covered in sawdust and chippings; a face mask and goggles were essential.

It's best to start by roughly cutting away the bulk of the waste. Check regularly that the depth is still within a safe margin. As the work progressed I got more into the fine cutting motion, **photo 4**. Eventually I was deep enough and could shape out the inner curves, **photo 5**, leaving a rim slightly thicker than required.

Upside down

The waste removal on the underside can be speeded up by using the bandsaw. You have to set up a simple fence on which the blank can slide at an angle. A series of cuts removes the worst of the stuff, **photo 6**, and it can then be finished off with the woodcarver.

As long as the rim is strong enough, the upturned bowl can be clamped in the Workmate again, **photo 7**. After smoothing out most of the ridges left from the bandsaw and creating the convex sides, I then finished the job off with the bowl mounted on its edge in the Workmate, **photo 8**.

Planed and sanded

The bottom surface was still rough-sawn, so I trimmed and levelled it with a smoothing plane, **photo 9**. The rim was still a little too thick. I used my spokeshave to slim it down, **photo 10**, taking care to run with the grain as best I could.

When I was happy with the result, I took the dust collection bag off my disc sander, to give it better manoeuvrability and reach, and sanded off the rough edges in the

To finish the lower profile, the bowl needs mounting on its edge in the Workmate

The rough-sawn base of the bowl can be trimmed flat with a sharp plane

Finish off the rim to less than 12mm thick with a sharp spokeshave

Sand off the rough ridges, but leave the chiselled effect visible on the surface

Dilute the first coat of tung oil and follow it up with a couple more full-strength coats

centre of the bowl, **photo 11**. The same happened to the outside, leaving clearly defined dents and hollows from the cutting blade visible on both surfaces.

Fear of drying

Shaping the bowl, but not sanding it, took about four hours from start to finish. The nearly finished product was then a good 12mm or so thick all round. Now I wasn't too worried about it drying out. Because it was so much thinner, any residual moisture would evaporate off evenly from all the surfaces. There wouldn't be a lot and it wouldn't take long. There might be some slight distortion but there should be no cracks, as has proved to be the case.

If you make one of these and have to stop and leave it for any length of time, seal all the exposed end grain. This is where the bulk of the moisture is lost, thus causing shrinkage and cracking. A coating of PVA glue works well for this.

Oil or nothing

The day after the main work had taken place, I finished the bowl with its first coat of tung oil, **photo 12**. Slightly diluted with white spirit, this was followed with a couple more full-strength coats over the following two days or so. After letting this soak in and dry off a bit, the bowl was then rubbed down and put into service.

Shake it all about

Shaker style is all about design that's plain in style, durable and functional. This small lidded container fits the bill perfectly, with a contrasting knob the only concession to frivolity

BY CHRIS CHILD

This container was turned out of a 150mm diameter log of green cherry wood. Pieces of fully seasoned timber as thick as this are very difficult to come by. The seasoning process would take up to three years, and by then the dry timber would be so hard that it would be difficult to hollow out. As a result many woodturners resort to green logs for making their deep vases, large boxes and hollow containers.

Avoiding the splits

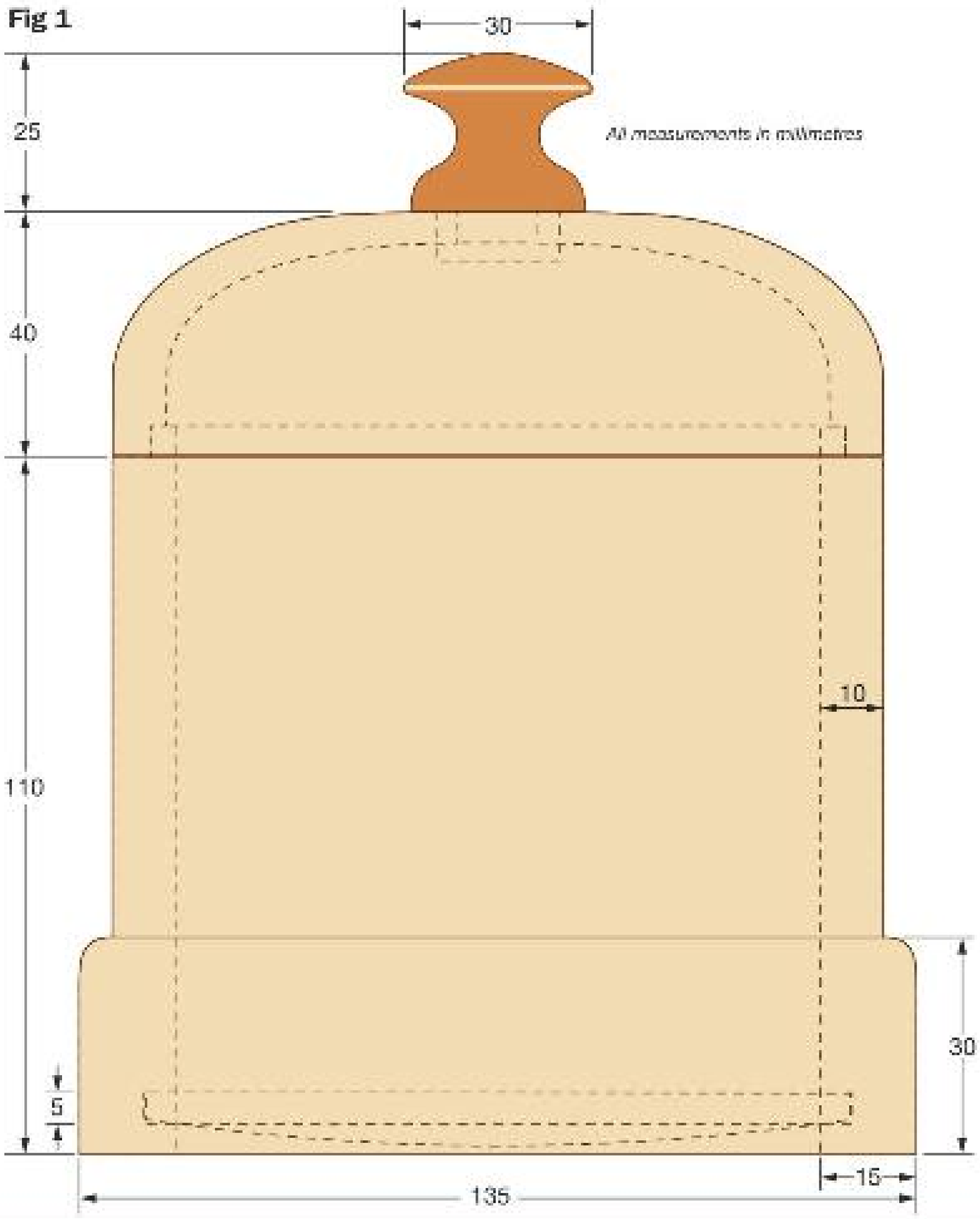
Of course, articles made out of unseasoned wood will shrink and may split when they eventually dry out. To avoid this happening, you'll need to construct the work with an empty core around which the walls of the vessel can contract. Cut a section about 180mm long from your log, which needs to have been stored in the dry for two or three months. One end of the log must be free from wide heart shakes for making the lid, but splits in the section for the base are not a problem so long as they don't extend to the outer circumference, because they'll be removed when hollowing out the base of the container.

Starting slowly

Mount the blank between centres on the lathe. Set the lathe speed as low as you can (500 rpm or less) and stand clear before switching on. If the log is free from knots, a freshly sharpened roughing gouge is fine for turning the log down to a regular cylinder, **photo 1**, but if you do encounter any difficulty change over to a ½in bowl gouge which, with its smaller bite and longer handle, should get you out of trouble.

As you reduce the diameter with each

Fig 1



Turn the rough section of log down to a cylinder using a freshly-sharpened roughing gouge

Set the toolrest at a 45° angle and slice the end square with a bowl gouge

Screw a faceplate to one end of the blank using four 25mm long Spax screws

Hollow out the dome shape on the inside of the lid using the ring tool

pass of the gouge, stop the lathe to examine the log for crevices, insect holes, areas of decay and other faults which will need to be removed. When you've finished turning the log down to the cylinder, set the toolrest at one end to 45° and use the bowl gouge to slice it square, **photo 2**.

Faceplate or chuck?

You can use a compression chuck to fix the work to the lathe at one end, but a faceplate will hold the workpiece much closer to the headstock, providing more rigidity. I used four 25mm Spax screws, **photo 3**. These are ideal for gripping end grain, as they have very sharp serrated threads which penetrate without the need for a pilot hole. If you're in any doubt about the hold, give the workpiece a thump with the side of your hand to test whether it's secure on the faceplate before you proceed with the next stage.

Turning the lid

Hollow out the inside of the lid first. Its hollow dome shape isn't just for decoration; it's an essential design feature which provides a space into which the side walls of the lid can shrink. You can use a scraper for hollowing, but to obtain a cleaner finish it's better to use a tool with a slicing action. The ring tool does this, and also minimizes the load on the screws that are holding the workpiece in place.

Adjust the height of the toolrest so that, with the handle held horizontally, the centre of the cutting edge of the tool lies diagonally across the centre of the workpiece. Start the cut by angling the edge of the tool slightly so it scoops out a small depression. Slowly swing the tool in a horizontal arc, keeping the rear bevel of the loop flat against the concave surface of the work face at all times, **photo 4**. Watch for a spiral flow of shavings to indicate that the tool is cutting correctly, and clear the shavings out of the ring after each pass.

To locate the lid on the body of the container, form a parallel-sided rebate on the inside edge of the lid using a square scraper, **photo 5**. While the inside of the lid is accessible you can, if you want, sand and polish it. I like the insides of my containers left straight from the tool.

Shaping the outside

Mark off the extent of the dome on the outside, add a centimetre and part off the lid section, **photo 6**. To shape the outside of the lid, mount it onto a jam chuck formed within the end of the base section, **photo 7**. The rebate on the jam chuck must

correspond exactly with the interior rebate of the lid so an interference fit is created. If you under-size the jam chuck, pack it out with some tissue paper. Then form the outer dome shape of the lid using a slicing cut with the bowl gouge, **photo 8**.

Shaping the base

Next, guide the roughing gouge across the base section, taking very fine cuts to create smooth parallel sides, **photo 9**. To form the half-bead moulding on the edge of the plinth section, first cut in with a parting tool to form a step; then form the convex curve of the moulding by rolling the tool over on its side, **photo 10**.

At this stage you can cut a hole for the top knob by pushing the point of the spindle gouge through the top of the lid and then widening the opening with a small square scraper, **photo 11**. Then remove the lid and slice a chamfer at the top edge of the base, **photo 12**, to create a clear line between it and the lid.

Starting the hollowing

The best way to begin hollowing out the base is to bore a pilot hole using a saw-toothed centre bit held in the tailstock chuck, **photo 13**. Then you can remove the rest of the waste using a square scraper by sliding it down the side of the pilot hole like a reamer. In this way you can gradually open the hole out to the full width of the interior, making sure that the inside walls of the box are parallel with the outside, **photo 14**.

A long handle on the tool is a great aid when working deep inside the body of the container. Even with a long handle, you should avoid bringing the full width of the scraper to bear against the bottom of the cavity, as this will cause a tremendous snatch and may dislodge the workpiece. Leave the bottom of the hole in a series of rising steps, or else fix a depth guide to your scraper.

To complete the hollowing-out of the base, part it off below the plinth, **photo 16**, reverse the work and mount it on a jam chuck. Then work in with the scraper, taking off no more than a millimetre with each pass of the tool.

Finally, cut the groove for the loose base of the container using a sharp parting tool, **photo 16**. A depth of about 4mm is enough to allow the walls of the container to shrink around the base without splitting.

Sanding and polishing

When sanding, I start off with 100 grit aluminium oxide abrasive and follow up with

Use a square scraper to form a rebate on the inside edge of the lid

Mark the extent of the dome on the outside, add 10mm and part it off

Mount the severed lid on a jam chuck formed in the end of the base section

Use a slicing cut with the bowl gouge to form the dome shape of the lid

Finish the outside of the box by taking a series of fine parallel cuts

Cut in with a parting tool and then roll the tool on its side to form a bead

Form a small hole in the top of the lid and widen it with a square scraper

Remove the lid from the chuck and cut a chamfer at the top edge of the base

Bore a pilot hole in the base using a saw-toothed centre bit in the tailstock

Gradually widen the inside of the base to its full size with a square scraper

To complete the hollowing-out process, part the base off below the plinth

Cut a groove to hold the container's loose base panel using a parting tool

Turn a small blank to the knob shape, then form a narrow spigot on one end

Slice the edge of the base disc to the correct diameter and part it off

Push the disc into the bottom of the container and position it within its groove

240 grit to remove the scratches left by the coarser abrasive. I find that the friction caused by sanding is usually quite sufficient to dry out any dampness in the wood, but you can use a hair dryer if excess moisture is a problem. Give the work a light rub with 350 or 400 grit to be sure of obtaining a fault free finish before you apply the wax. I used wax polish which I rubbed directly onto the revolving work and then burnished with a soft cotton cloth.

Turning the knob

I picked a piece of seasoned elm for the knob on the lid, but any piece of dry fruit wood would do just as well. Fix the small block on the lathe at one end using a compression chuck or screw chuck and reduce the diameter using a roughing-down gouge. Use a ¾in spindle gouge to shape the body of the knob, then turn a dowel on the end nearest the chuck with the parting tool. Use a vernier gauge to measure the thickness of the lid, and transfer this measurement to the side of the dowel. Reduce the diameter of this section by a further 1mm, **photo 17**. Then sand and polish the knob before parting it off, leaving the tiny wider section of dowel at the end.

Adding the base

Stick the base disc onto a faceplate using double-sided tape, and flatten it off with a gouge. Slice the edge of the disc to the correct width, **photo 18**, keeping the bevel in line with the cut; then part it off.

The base needs to be a tight fit through the hole in the bottom of the container, **photo 19**. It can then be manoeuvred into the groove. At first it will be quite loose and you may need to relocate it in the groove from time to time, but as the container assumes its final dimensions, it will be trapped fast as the sides of the container shrink around it.

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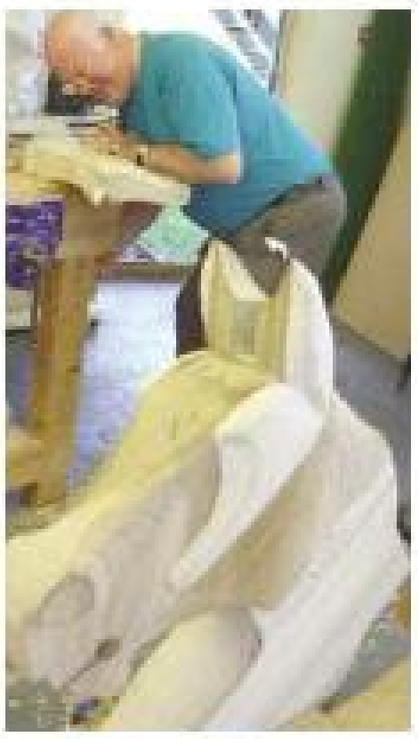

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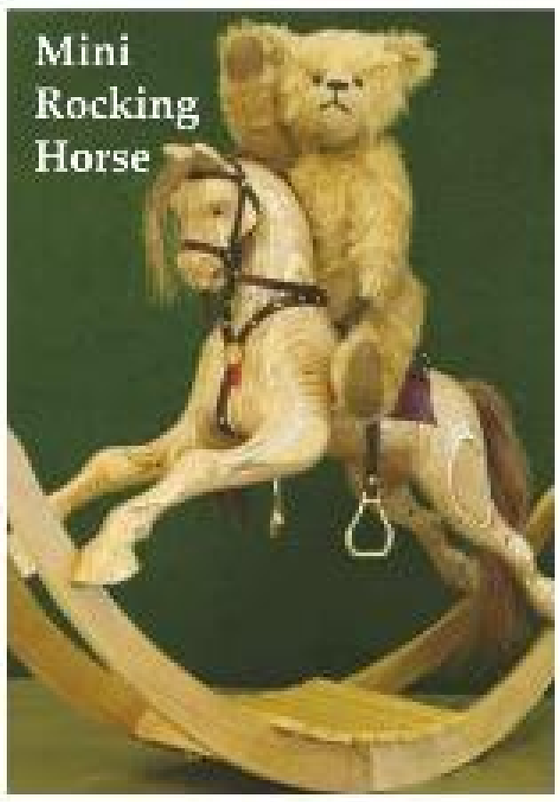

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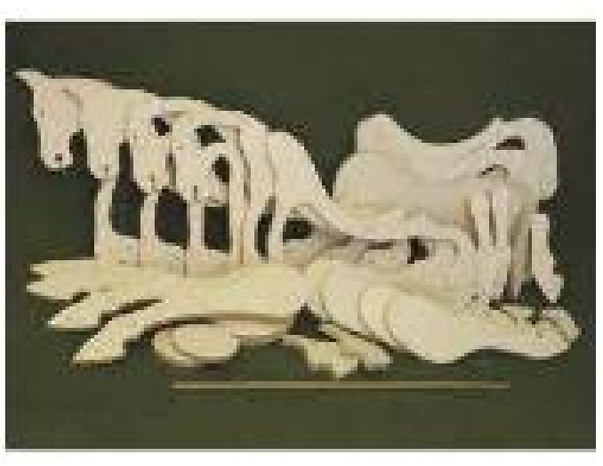

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BY IAN WILKIE

Kitchen trio

Here are three simple bits of kitchen kit. They're not difficult or costly to make, and as they involve both spindle and faceplate work, they'll be good practice for novice turners

1: AN ASH PLATTER

This platter is slightly unusual because the bottom is flat and the rim is square. Ash is a very pleasant wood to turn, producing lots of clean shavings. It's turned first on a screw chuck and then on a scroll chuck. I used a Henry Taylor 6mm Superflute bowl gouge and a 4mm Ashley Isles cork-handled parting tool for all the turning. My air-dried ash blank measured 200 x 40mm and cost £4.

Setting up

Start by marking the centre and drill a hole to suit your screwchuck. My Peter Child faceplate/screwchuck features a screw insert which requires a pilot hole 6.5mm in diameter and 14mm deep. It's important that this pilot hole is drilled at right angles to the surface, and using a bench drill will ensure accuracy. I keep a 6.5mm drill (marked with tape to act as a depth stop) with this faceplate, **photo 1**, and also use a 6mm plywood spacer (painted red) to protect the front of the faceplate and reduce the depth of the pilot hole.

With the lathe speed set to 1500rpm, turn the blank to the round and face it off. Then mark the recess to suit your chuck jaws, **photo 2**, and hollow out the area. Sand the work wall before removing the screwchuck from the lathe and re-mounting the blank on the chuck jaws in expansion mode, ready for the inside of the platter to be turned

Hollowing out

Mark off 6mm for the wall thickness of the rim. Then start to hollow out the interior with the bowl gouge, **photo 3**, working towards the rim in gentle stages. Use the parting tool to cut in at the inner rim mark as each layer of wood is turned away until you reach the required depth, **photo 4**.

Use a straightedge to check that the boase of the platter is flat. Then sand it well and apply several coats of food-safe finish.

1 Drill a hole in the blank to suit your screwchuck's screw insert

2 Turn the blank to round, face it off and mark a chuck recess

3 Mount the blank in your chuck, mark the rim and start hollowing

4 Cut in at the rim as you hollow out the platter to the required depth

1 Mount the blank between centres; these Steb centres are ideal for this

2: A ROLLING PIN

I've chosen a plain pin without handles for this project. Both sycamore and beech are popular woods for kitchen utensils, and turn and sand to a fine finish if they're well seasoned. Choose your blank carefully and select one free from knots and faults. My kiln-dried sycamore blank measured 415 x 55 x 55mm and cost me £5.

Preparing to turn

Mount the blank firmly between centres. I used a 20mm Steb centre in the headstock and a matching Steb centre in the tailstock, **photo 1**. These centres give an excellent grip, and their sharp teeth leave clear imprints in the wood, making it easy to remount the work if necessary in the knowledge that it will still run true. If you don't have any Steb centres, a prong drive and a revolving centre will do just as well.

Turning to round

Use the longest toolrest you have and set the lathe speed to 1200rpm. Check that the blank rotates freely and start to turn it to the round with a spindle roughing gouge, **photo 2**. Work from the centre and turn towards the headstock; then move back to the centre and work towards the tailstock.

Change to a skew chisel for the final cuts to produce a smooth and even surface, **photo 3**. The skew can be tricky to use on sycamore, and you may prefer to continue with the gouge. The aim is to turn a cylinder with a diameter of 50mm all the way along. Stop work regularly to check how you're getting on. Springbow callipers are very suitable for this purpose, as they can be set and then moved along the length of the cylinder, **photo 4**. Remember to switch off the lathe before using them!

Next, hold a steel ruler along the length of the cylinder to show up any high or low spots, **photo 5**. Apply a few more light cuts to remove them, then sand the wood well.

Shaping the ends

Measure off 10mm at each end of the pin and make a V-cut at each mark, **photo 6**. Then shape each end to a smooth curve using a spindle gouge, **photo 7**. Continue shaping until there's only 10mm of wood left; then stop and switch off the lathe.

Use a fine-toothed saw to cut carefully through the remaining wood at each end of the pin, **photo 8**. Then sand the cut ends until there are no saw marks left, **photo 9**, and finish off with a final overall sanding.

2 Start to turn the blank to round using a spindle roughing gouge

3 Switch to a skew chisel for the final cuts to leave a smooth surface

4 Use callipers (with the lathe turned off) to check the diameter as you work

5 Hold a steel ruler against the cylinder to check for any discrepancies

6 Measure 10mm in at each end and make a V-cut at each mark

7 Then shape each end to a smooth, round curve with a spindle gouge

8 When you have just 10mm of wood left, cut through it with a saw

9 Sand off the saw marks and finish the pin with a final hand sanding

3: A BREAD BOARD

My board is turned in beech, but sycamore would do just as well. The blank measured 280mm in diameter and 20mm thick and cost me £4.80. Check that your blank is well seasoned, flat and without cracks.

I'm going to use a basic faceplate here, **photo 1**, as it's ideal for holding a large blank securely. It will leave screw holes on the underside, but these can be filled later. I'm using my old faithful Peter Child combined faceplate and screwchuck.

Getting ready

Start by sanding both sides of the blank. Then choose the best side for the top surface. Mark the position of the faceplate on the underside and drill pilot holes for the fixing screws. Take care not to drill right through! Then screw the faceplate on.

Swing the lathe head round to allow a diameter of 280mm to be turned. Screw the faceplate with its blank on to the headstock spindle. Position the tool rest parallel to the edge of the blank, **photo 2**, and set the lathe speed to 1200rpm.

First steps

Start work by turning the edge of the blank to the round using a bowl gouge, **photo 3**. Then gently skim the front surface with a gouge to ensure its flatness, **photo 4**, and give it another once-over with the random orbital sander, **photo 5**.

By the way, you may have noticed I'm wearing fingerless gloves, which some turners may question from the safety angle. This is because I find the palms of my hands get sore when I'm turning for long periods. These gloves have padded palms for protection and I do find them helpful.

Forming the rim

Next, draw a pencil line 20mm in from the outer edge of the blank, **photo 6**. Then turn a gentle, curved chamfer to form the rim, **photo 7**. If you plan to decorate this area with carving or pyrography, you may wish to make the rim a bit wider.

Now switch to a 4mm parting tool and turn a crumb groove 4mm deep just inside the start of the curved chamfer, **photo 8**.

Finishing touches

Remove the work from the lathe and unscrew the faceplate. Fill the screw holes with small glued-in dowels, **photo 9**, and pare off the surplus. Give the board a final hand sanding and it's ready for use.

1 Drill pilot holes for the faceplate screws on the underside of the blank

2 Swing the lathe head round and fix the faceplate to the headstock spindle

3 Use a sharp bowl gouge to turn the edge of the blank to a true circle

4 If the face of the blank is at all uneven, skim it lightly with the gouge

5 Then use the random orbit sander again to leave it perfectly smooth

6 Draw a pencil line 20mm in from the edge to mark the rim area

7 Turn a gentle curved chamfer, running down to the edge of the blank

8 Change to a 4mm parting tool and cut a crumb groove 4mm deep

9 Unscrew the faceplate and fill the screw holes with small glued-in dowels

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A combination square combines several functions in one tool – marking angles at 90 and 45°, measuring depths and even checking verticals and horizontals. This is a handy pocket-sized version

£7.50

Bahco CS150 combination square

This little Bahco square is made in China, so the price reflects that to a degree, but it's a cracking tool nonetheless. Many woodworkers advocate the use of steel engineering squares for accurate squaring and marking out, but the traditional try and combination squares are usually perfectly satisfactory, especially if work is squared up with a plane and a shooting board after cutting. This version with its 150mm blade is perfect for smaller jobs, but will still mark a square line 100mm long with ease.

Standard features

The stock is cast aluminium, and is solidly built with 4mm thick faces for the 90° and 45° angle guides. The stainless steel blade is etched in millimetres and 32nds of an inch.

As with other squares of this design, it allows easy parallel marking, backsets, depth setting and transferring alongside the standard squaring work. The squaring and mitre functions have to be accurate, and doing some basic marking out, squaring and the standard test for a try square all proved perfect, making this handy little tool extremely good value for money.

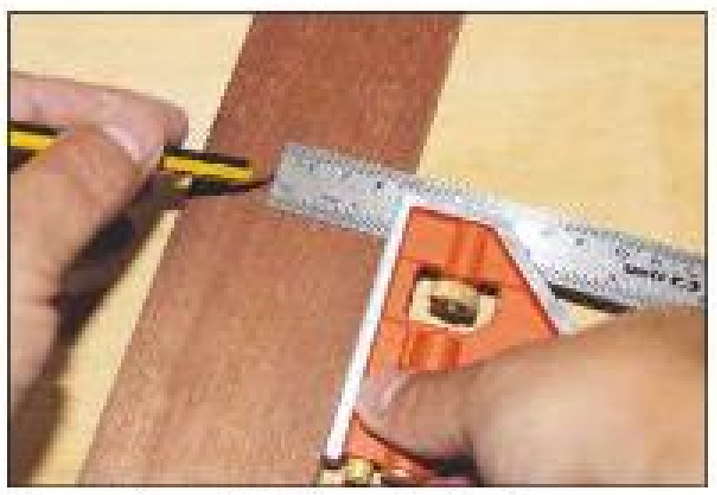
Handy extras

The small built-in spirit level vial is useful for checking horizontals and verticals, but obviously isn't as good as a longer level. However, a quick check proved that it's accurate enough. The metal scriber is often the first thing to get lost from a combination square, so the fact that this one screws into the stock rather than being a push fit will ensure it stays where it belongs. ***AK***

The steel blade is deeply etched with metric and imperial measurements

The solid aluminium stock is locked securely in place with a brass knob

Its small size makes it very easy to position and hold while marking out angles



It's equally controllable and perfectly accurate for striking parallel lines

SPECIFICATION

BLADE LENGTH	150mm
SCALE MARKINGS	metric and imperial
FIXED ANGLES	45° and 90°

FEATURES spirit level bubble, metal scriber

VERDICT

This tool is a little gem, ideal for small-scale marking jobs and depth checking.

PROS
- Well engineered
- Very accurate
- Pocket-sized

CONS
- None

VALUE FOR MONEY ■■■■■
PERFORMANCE ■■■■■

FURTHER INFORMATION

■ www.bahco.com for stockists

The Triton's specification can't match those at the higher end of the market but the price reflects that, and for those on a budget looking to plane stuff to a good finish, it will do an excellent job

Triton TPT125 planer thicknesser

A stand-alone thicknesser is best complimented by a suitable jointer or surfacer, but it's a useful machine even if you don't own a surfacing option to square up your stock.

Triton are new to this area of machinery, and haven't taken on the likes of DeWalt or Makita with this machine. It's a basic, simple model, not one bristling with features. However, if you're simply looking for a model that is of decent build quality and puts in an admirable performance on both hard and softwood, then this Triton model satisfies those parameters.

The table mechanism

A look underneath the machine reveals a set of alloy cogged gearing to raise and lower the bed. Many machines costing more than this one rely on nylon gearing, so this an immediate plus point from a durability point of view, as well as giving a sense that the rest of the machine will also be of decent build quality.

That gearing gives the table a smooth ride throughout its travel, and following standard construction methods of other thicknessers, four outer columns with two centre wormscrews alter the height and keep the bed parallel to the block.

The height winder is pretty basic but fluid to operate. Each rotation alters the height by just under of 1.6mm. This proved to be accurate to the scale, but any micro adjustments of sub-millimetre increments will need to be checked with a suitable standard rule after each pass as there's no fractional scale indicator on the winder.

Modest performance

In comparison to other machines on the market, the Triton's motor is quite low-powered at 1100W – most tend to start around 1500W and above – so it's not a model to hog off large amounts in a single pass, especially at its full width capacity of 317mm.

The manual recommends a maximum cut of 1.6mm per pass on any stock over 125mm wide, and 2.3mm per pass for stock under that dimension. That's a sensible limit for a relatively low-wattage machine, although there is an overload cut-out switch on the front to help protect it if you push it too far.

Testing cuts

Top-end machines often have headlocks to keep the block from chattering or vibrating under load, but there's no such luxury here. Nor is there a pre-set turret for standard sizes or a sizing gauge to check it will allow the stock to travel through the machine.

After machining some pine, sapele, cedar and a particularly scruffy piece of zebrano as

Adjustments to the table height are fluid in either direction

A simple metric and imperial scale shows the machine setting

The knife-swapping toolkit is conveniently housed on board the machine

The finish on this piece of wild-grained zebrano was excellent

test stock, the finish from the cutters was excellent, leaving a surface free from ripples and tear-out.

Following the shallow cuts recommendation, the machine turned out excellent finishes across the range of stock tested, including a 175mm wide sapele board, taking it through easily without any power loss on a 1mm per cut pass.

Using the lowest thicknessing setting, thin strips can shatter from chattering, but putting some pine strips through gave consistent perfect results, so it's pretty capable despite the power limitations.

There's no indication of feed speed in the literature, although this type of machine tends to feed quite fast (normally around 7m/min); the Triton is probably similar.

Changing knives

An onboard toolkit is ideal as it avoids having to track down specific tooling when you need to replace the knives. A key-shaped hex wrench is used to remove both the safety cover and the clamping plate on the knife.

Magnetic holders are used to lift the plate and the knife out to keep fingers from getting nicked. There's also a spindle lock to hold the block rigidly while you do any work on it. A quick push on a small snib releases the block so you can rotate it to replace the second knife.

The knives are double-sided and have elongated holes, so you can nudge one slightly across should you get a small nick or two in them while they still remain sharp.

Handle with care

Some planers have a closed style frame with a top cap to tie the sides together, but the Triton has an open frame with a single tie rod instead. This could easily be considered as a carrying handle, but using it for this could lead to deformation, and in doing so, cause operating problems. There are carry grips on the side of the machine for lifting and transport, and it's important that these are used if the machine is to continue to operate correctly. ***AK***

SPECIFICATION

MOTOR	1100W
CUTTERBLOCK SPEED	8750rpm
CUTTING KNIVES	two
TABLE SIZE	317 x 320mm
MAX PLANING WIDTH	317mm
THICKNESSING HEIGHT	3.2 to 152mm
WEIGHT	29kg

ACCESSORIES adjustable stand

VERDICT

This machine does what it says on the box, but is a bit underpowered for heavy-duty use.

PROS
- Excellent finish
- Easy cutter swaps
- Bargain price on the web

CONS
- Low-powered motor

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■□

FURTHER INFORMATION

- Triton Tools
- 0844 576 0266
- www.tritontools.com

Wider stock such as this sapele board needs a smaller cut per pass to minimise power loss

You remove the front guarding first to gain access to the block

This little red snib locks the cutter block safely while you work on it

Two magnetic handles are used to lift and remove the knife safely

When laying laminate flooring, keeping a consistent and correct spacing to the wall is critical. The use of wedges and blocks is imprecise, but these new Bessey floor spacers are small, practical and simple to use

Bessey AV2 floor spacers

If you've ever fitted a laminate floor, you're probably aware of the need to get it set up perfectly for the first couple of rows so it progresses smoothly as you continue. You also need to provide an expansion gap round the perimeter of the floor, but the traditional use of wedges and wood offcuts isn't always the best solution, as they can work loose or get trapped tightly when you need to remove them.

These impact-resistant floor spacers from Bessey are way beyond the normal options to set this gap, not only by dropping down into the gap to set the distance, but also by sitting over the top of the floor so they remain in place as you work.

Dial the distance

The simplicity and beauty of these blocks is the large red dial on the top. By rotating it you not only set the spacing you require. You can also take up any discrepancies in the walls; they're highly unlikely to be perfectly straight, so this degree of adjustment is brilliant.

The spacers have a 5mm lip for initial settings, but you can preset it at up to 20mm, reading against the scale on each block if you need a specific gap width. With uneven walls, you can take up the discrepancy by dropping the spacers into place and rotating the dial until the lip snugs up to the edge of the flooring and the movable top block touches the wall or the skirting board.

Tough customers

The blocks are made from impact-resistant polyamide so you can knock up boards as necessary without them breaking. During testing they remained set exactly as they were positioned; they didn't retract or move at all. For any setting above the 5mm minimum there's also no risk of the spacer getting trapped. You simply turn the dial back to release the pressure and remove it. ***AK***

SPECIFICATION

MATERIAL	polyamide
SIZE	90 x 60 x 12mm
ADJUSTMENT RANGE	5-20mm

VERDICT

These spacers are perfect for fitting any floating floor that requires an expansion gap at the perimeter.

PROS
- Ensures consistent spacing and correct gap
- Easily adjustable
- Ideal for irregular walls

CONS
- None

VALUE FOR MONEY ■■■■■
PERFORMANCE ■■■■■

FURTHER INFORMATION

- Axminster Tool Centre
- 03332 406406
- www.axminster.co.uk
- www.besseytools.co.uk

Twisting the large dial sets the width of the expansion gap at up to 20mm

From the underside of the spacer you can see how the block extends

The lip sits on the edge of the flooring. Its ridges keep it in position

Set around the perimeter of the flooring, they take up any discrepancies in the walls

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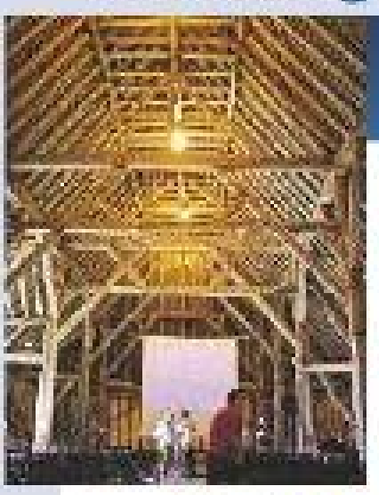


30th August, 31st August & 1st September

Frame 2013 will take place in the Medieval Barns at Cressing Temple on the 30th August - 1st September

David Leviatin is organising the event with assistance from Rick Lewis and Sally Bungard

Frame' is the name of the Carpenters' Fellowship annual gathering. We hesitate at calling it a conference: there is a strong educational element to the event and it is run on a very 'hands on' basis, the schedule jam packed with not only formal lectures, but also demonstrations, practical activities, competitions, discussions, and much audience participation!

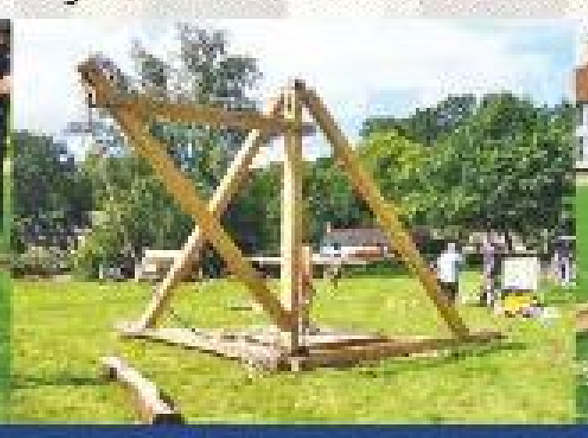
The focus of this year's event will be:

Imagining the Future and Considering the Past of Timber Frame Construction.

Speakers and demonstrations will offer an informed view of what timber frame construction may look like some day. Speculation about the nature of materials, design and manufacture will be accompanied by talks and presentations reflecting on the historical evolution of timber frame construction. What can the way we worked in the past reveal about the way we may be working in the future? How and why has the role of the carpenter changed over time? Does the future of our industry lie in the craft of our past?

What can we expect moving forward?

The Frame organising team work really hard to attract leading industry presenters and practitioners, reflecting the broad spectrum of our organisation: from tradition timber framing to contemporary design, from time served practitioners at the top of their field to the solid basics for novices, from the completely theoretical to the totally practical. *There is something for everyone, and the most common complaint is that you can never see it all!*



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The 3M Versaflo range of respirators provides solutions for workers in flour mills, chemical works and many other industries, but just how good are they in a woodworking environment?

3M Versaflo respirator and headtop

Dust is a pervasive problem in the woodworking environment. Some manufacturers have done a lot to make dust collection more efficient, but no tool or extractor is perfect.

As a prelude to a major article on workshop dust coming later this year, we've been looking at the Rolls Royce of powered respirators from 3M: the Versaflo.

System design

The Versaflo family of powered respirators and associated headgear provides a mix-and-match collection of equipment for every conceivable need, from welders to chicken manure handlers. The concept centres on a small powered respirator unit that fits on a belt around the waist, and a connected headtop with optional ear defenders.

We tested the TR315 model. This has a motor, powered by a lithium ion battery that weighs about 1kg but sits comfortably around the waist on a broad belt. The kit comes complete with a high-capacity battery, charger, main (particulate) filter, pre-filter, connection hose, manometer and belt.

The M106 headtop weighs only 554 grams, has a face shield, is fully adjustable and comes complete with a visor protector and plastic storage bag. The optional ear defenders were pre-installed on the headtop under test.

Setting up

The first task was to charge the battery. This clips into place in the charging unit, which is connected to the mains via a transformer. The initial charge was complete in under three hours.

The filter cover is removed by pressing the latch button at the side. A pre-filter is first inserted against the recess in the cover, followed by the main filter. When the filter is fitted the writing on the top of the filter should be visible through the window along the top of the cover.

A manometer is provided to test the airflow and filter efficiency. It is inserted in the air outlet at the top of the respirator (which is held so that the manometer is vertical), and the unit is switched on. The red ball in the manometer should rise to just past the line on the side.

Dressing up

The hose connects to the respirator with a bayonet connector, and needs just less than a quarter turn to secure it in place. The belt should be threaded through the loops in the back of the respirator and pulled up comfortably tight.

The M106 headtop is adjusted to size very easily and the visor protector is attached. It's then connected to the other end of the respirator hose, which has a squeezable clip to keep it in place.

The lithium ion battery is fully charged from scratch inside three hours

Remove the filter cover and insert the pre-filter in the recess inside it

Then fit the main filter so the writing on it is visible through the window

The filter cover clips into place. Press the blue latch button to release it

The headtop support strap is adjusted with a simple tensioner at the rear

A squeezable connector is used to join the flexible hose to the headtop

Using the respirator

With the two pieces of kit joined by a flexible tube, start by putting the headtop on and then switch on the respirator. This allows the user to check the LEDs and audible alarm before strapping the respirator in place.

The headtop has a tensioning adjuster at the rear which is rotated to achieve a comfortable fit. The visor moves easily and is not awkward when in the upper position. The ear defenders fit securely and work well. If the user wears spectacles, they remain safely in place when donning and doffing the headtop.

The Versaflo system was tested over a period of five days and was worn all of the time during stints in the workshop. The respirator around the waist didn't get in the way; nor did the hose that connects to the headtop. The system runs almost silently, and the headtop is so light that it's easy to forget it's there.

Summing up

Professional woodworkers will value this system as it's extremely well made and can be worn all day. 3M is a huge international company, so filters and spare parts for this respirator should be available for years to come.

The keen amateur may see the cost as equivalent to buying a major machine for the workshop, but that's precisely how important good respiratory protection is. ***PP***

SPECIFICATION

BATTERY	11.1V LiHon
AIR FLOW	160 litres/min
RUN TIME	10-12 hours
CHARGE TIME	3 hours
HEADGEAR WEIGHT	554g

VERDICT

This system offers the very best for the user in terms of protection, comfort and reliability.

PROS
- Well made and built to last
- Headtop light and comfortable
- Easy to maintain

CONS
- High initial outlay, but worth every penny

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■

FURTHER INFORMATION

- 3M
- 0870 608 0060
- www.3M.com
- www.arco.co.uk

The Versaflo was comfortable to wear all day in a variety of workshop situations

Remove the front guarding to gain access to the block

This smaller Excalibur scrollsaw is very similar to its two bigger brothers – the EX-21 and EX-30 models – which we tested in The Woodworker in April and May 2011

Excalibur EX-16 scrollsaw

The size of a scrollsaw is designated by its throat capacity – the distance between the blade and the back of the frame. The 405mm throat on this machine will be more than adequate for most users, and will produce excellent work in the right hands. This is a neat machine ideally suited to the smaller workshop, and will be of interest to serious hobby scrollsawers. It has a double-parallel action and gives a maximum depth of cut of 51mm.

Standard features

The blade and mechanism can be tilted 45° to the right or left for bevel cuts while the table remains level. On most scroll saws it's the other way round. A steel rack-and-pinion device tilts the arm, and the position is accurately set by tightening a large locking knob.

The epoxy-coated steel table has no separate throat plate; instead there's a central hole surrounded by indexed holes which enable the wood dust to fall below the table so it can be sucked out through the dust extraction point.

£499.96

Changing blades

Most of the moving parts are enclosed in the hollow and fixed arms. The upper arm lifts up to make the blade changing easy, and for threading the blade through a drilled hole for internal cuts. The quick-tension device on the front of the upper arm is operated by means of a nylon flip-over lever.

Clamps above and under the table hold the blades in place; no tools are required to change them. A slightly larger top clamp knob would be an improvement for older operators!

A large tension setting knob is positioned at the top rear of the machine. Once set this doesn't need to be touched during the cutting process.

A combined hold-down and blade guard gives good visibility of the work in progress. The blade guard on the underside of the table is particularly good.

The link-drive system

The double parallel link-drive system on this range of machines has some advantages over the more conventional parallel-arm machines, the major one being reduced vibration. The blade is held between the short upper and lower rocker arms, which provide a vertical blade action. These pivot in reaction to the push/pull motion of the linkage, thereby creating a reciprocating movement of the blade.

Blade action

The pivoting rocking arms are shorter than the arms of a conventional parallel saw, and give a blade action with a front-to-back movement of 0.5mm per stroke. At first this can result in an overshoot, but you'll soon learn to control this tendency.

A rack-and-pinion device tilts the arm and a large knob locks it in place

The upper arm lifts up to make blade changing and threading-in easy

A large tension setting knob is positioned at the top rear of the machine

The dust blower is very efficient, but the tube could be a little longer

The instruction book recommends a top-down procedure for internal cutting, but it's more convenient to thread the blade from the bottom up for internal cuts as you can see exactly what you're doing – particularly when positioning the blade in the top holder.

Using the saw

A good fully illustrated instruction book comes with the saw, and this includes the techniques for adjusting the amount of vibration should this be necessary. Ten good-quality blades are supplied, and we used a No 5 reverse-tooth precision-ground tooth (PGT) blade to cut 4mm birch plywood and 30mm thick hardwood.

The best way to judge a scrollsaw is by its blade clamping system. It must be a simple matter to change a blade or to thread it through a hole for internal cutting. If this is difficult or fiddly, people will just give up and not enjoy the experience. On this machine the lifting arm is an advantage, so it passed this test with flying colours.

All the controls are well situated and easy to use. The table is fixed horizontally so it's always rigid, and its very smooth surface merits a special mention. The tilt mechanism is effective, with clear calibration and indexed holes for repetitive work.

Dust extraction

The dust blower works efficiently, but the tube could be a little longer so dust can be directed to the back of the machine, well away from the operator. Scrollsawing produces very fine wood dust, so you should always wear a mask. The machine can be linked to a dust extraction system, but this is usually unpleasantly noisy and negates the pleasure of using such a quiet machine.

The only criticism we have is that the extractor port relies on a thin, clear plastic plate fitted underneath the holes shown in the table, and this could be susceptible to damage and clogging. It doesn't seem to be quite up to the design standard of the rest of this otherwise excellent machine

Summing up

It's very noticeable how much these machines have increased in price over the last two years and, at just under £500, this is an expensive scrollsaw. However, it's rated for trade use so it should give many years of good service. ***IW***

SPECIFICATION

MOTOR	320W
TABLE SIZE	305 x 470mm
CUTTING SPEED	400-1500spm
THROAT	405mm
MAX DEPTH OF CUT	51mm
ARM TILT	0-45°
WEIGHT	24.5kg

ACCESSORIES 10 blades, optional floor stand (£75 extra)

VERDICT

This is an efficient machine with low vibration, and the engineering and finish are top-quality.

PROS
- Smooth and rigid table
- Easy blade changing
- Low vibration
- Efficient dust blower…

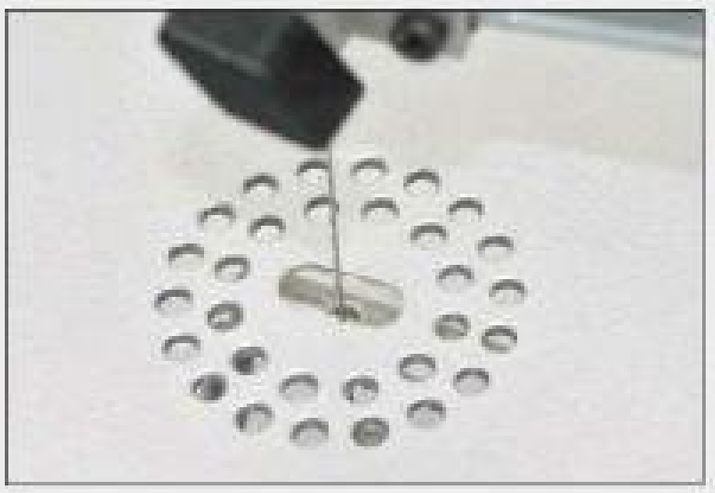
CONS
- …but the tube could be longer
- Extractor plate may be prone to damage
- Pricey

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

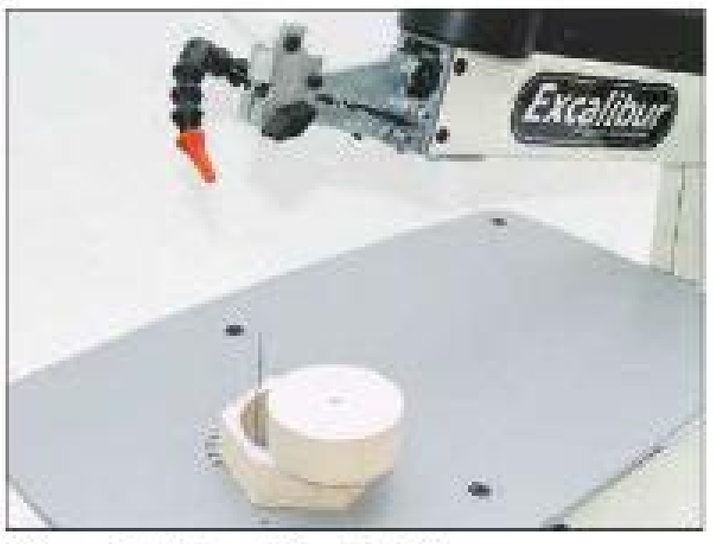
- Brimarc
- 03332 406967
- www.brimarc.com



The clear plate beneath the table could be prone to clogging and damage

This flange can be rotated if required to reduce vibration to a minimum

The combined hold-down and blade guard give good visibility of the workpiece



It's easier to thread the blade from the bottom up for internal work

Compact drill/drivers are excellent tools when you don't need the power and weight of a full-sized machine. Metabo's latest version of their PowerMaxx model now comes with 4.0Ah batteries for even more punch

Metabo PowerMaxx BS Pro drill/driver

SPECIFICATION

BATTERIES (2)	10.8V 4.0Ah Li-ion	
CHUCK CAPACITY		10mm
NO-LOAD SPEEDS	low	0-350rpm
	high	0-1300rpm
MAX DRILL CAPACITY	wood	22mm
	steel	10mm
MAX TORQUE		28Nm
WEIGHT (without battery)		1.1kg

ACCESSORIES storage case, charger, chuck, angle attachment, bit set

VERDICT

This is a capable and versatile tool supplied with a good range of accessories and two powerful batteries.

PROS
- Powerful
- Versatile
- Compact

CONS
- Chunky grip

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■□

FURTHER INFORMATION

- Metabo
- 02380 732000
- www.metabo.co.uk

The Metabo PowerMaxx BS Pro is a compact cordless drill/driver. It's the latest version of the tool and is now supplied with 4.0Ah batteries incorporating LED charge indicators. It can be tricky choosing a cordless screwdriver as there's such a wide range. From powerful heavyweight tools and impact drivers down to pocket-sized machines, there's something to suit every job. In an ideal world you would have several; however, that's a rather extravagant option for the amateur user. So, if you can buy only one driver for general workshop use, which should it be? The PowerMaxx could be a very good choice.

Standard design

The Metabo is a solid machine with a short body and a wide, comfortable grip. Above the trigger is a bright LED worklight, and a standard two-position gear selector is on the top of the tool. A metal torque ring is fitted to the front. The hexagonal bit-holder has a clamping bush which is tightened to hold the inserted bit securely.

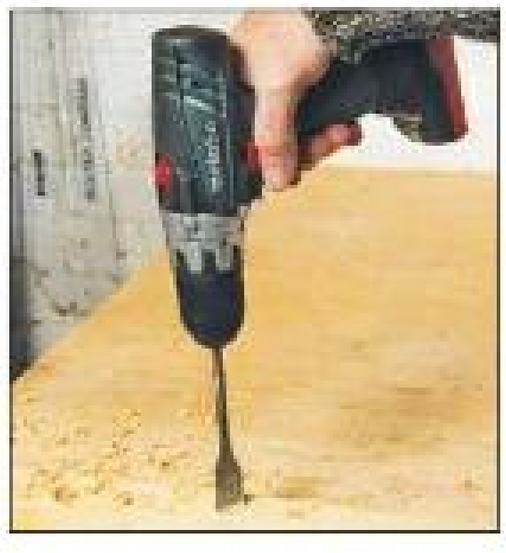
Plenty of accessories

The Pro kit is supplied with an impressive array of accessories. There is a 10mm capacity keyless chuck which screws onto the bit-holder so that standard drill bits can be used. The angle attachment is especially good. It plugs into the bit holder and can be

The drill/driver features a standard two-speed gearbox and torque ring

The 10mm capacity keyless chuck screws directly onto the bit-holder

The bright LED worklight comes on as soon as the trigger is squeezed



The drill is powerful enough to drive large flat wood bits with ease

clamped to the body in a convenient position, allowing you to insert screws in confined spaces. You can also use it with hex-shanked drill bits, though not with the chuck. A comprehensive set of screwdriver bits is also supplied and this includes cross-head, straight and Torx bits, along with a quick-release bit holder. These are all of excellent quality and are presented in a neat storage box.

Using the Powermaxx

The first thing you notice about using the PowerMaxx is how extraordinarily powerful it is. For a 10.8V tool it's remarkable. It will happily drive 100 x 6mm screws into softwood without any pre-drilling. It can also power large flat bits. The LED light is bright and useful, turning on just as the trigger is pressed and before the motor starts to turn. It's comfortable and secure to grip, though is best suited to those with larger hands.

Summing up

Overall, this is an impressive tool. It's solidly built and extremely efficient to use. The accessories are first class and allow you to make the most of its power and versatility. Its compact size also makes it convenient. The larger capacity batteries further increase runtime, and make it more stable when standing vertically. If you can buy only one drill/driver, this could be it. ***AS***

The clip-on angle attachment allows you to insert screws in confined spaces

The accessory set includes bits for driving slotted, cross-head and Torx screws

Working clothes have come on a bit since the days of the donkey jacket and hobnailed boots. Modern designs and sophisticated materials are now combined to provide a range of warm and protective workwear

£25.60 (jacket)

£21.30 (hoody)

TuffStuff jacket and hoody

In this county the weather can be somewhat unpredictable. This can make life difficult when there are outside jobs to be done, so it makes sense to invest in some suitable clothing that's practical to work in and will keep you warm and dry. A coat and a warm hoody seem like a good choice for starters, so how good are these?

All-weather jacket

Work jackets can be bulky affairs, festooned with all manner of pockets that can be more of a hindrance than a help. This jacket is a slimline design with two side pockets and one front packet, all zipped. It's made from a polyester and Spandex mix and is fleece-lined. It has an adjustable elastic drawstring around the bottom and Velcro-adjustable cuffs, and the high collar zips up right to the chin to keep the wind out.

Though this is a thin jacket it's totally wind- and waterproof, and keeps you remarkably warm. It's also perfectly comfortable to wear a tool belt over it.

Workman's hoody

This hooded sweatshirt is made from combed cotton and polyester. The fabric is soft and thick, and there's a kangaroo pocket on the front. The hood is double-lined and has a drawstring to keep it snug. Sweatshirts can be disappointingly thin, but this one has a good fleecy inner face that really keeps you warm, and the hood stops draughts going down the back of your neck. The stitching is strongly applied and the elasticated cuffs are secure.

Summing up

These clothes are comfortable and practical. They are, of course, completely machine washable. Their restrained design and lack of over-intrusive branding also makes them perfectly acceptable as casual wear. ***AS***

VERDICT

These are useful and practical work clothes that are well made, lightweight and effective.

PROS
- Wind and showerproof jacket
- Double-layered hood on hoody
- Same price for all three sizes

CONS
- Any colour you like... so long as it's black!

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■□

FURTHER INFORMATION
- Axminster Tool Centre
- 03332 406406
- www.axminster.co.uk

Chinese plane manufacturers are certainly making their mark in recent years, offering an increasing number of clones of more expensive Western planes at around half their selling price. Here's another one...

Qiangsheng No 95 edge plane

To all intents and purposes, this plane appears to be a clone of the Veritas edge plane, and potentially in breach of their patent. However, if you know your tool history, you'll be aware that the casting is based on an old Stanley design, the long defunct No 95, and is therefore well outside patent protection. This is yet another Chinese model of high standard, although it's uncertain whether it comes from the same factory as four other Qangsheng planes we've reviewed (see *The Woodworker* December 2011 and February 2012), as the name on this model is spelt Qiangsheng. A similar plane is also sold under the Luban brand name.

A few strokes on the stone shows that the plane iron needs minimal work

Like yet unlike

Take a closer look, and there are obvious similarities to the Veritas edge plane. The body casting is all but identical, right down to the inclusion of grub screws to nip up to the edge of the iron and retain its setting when you remove it for honing.

The advance mechanism for the Qiangsheng iron features steel knobs and screws; these are of brass on the Veritas model. In fact the blade advance is similar to the old Stanley design for some of

The blade advance is achieved using a series of notches in its back face

Small grub screws nip up against the blade to help retain its setting

The iron advance mechanism is pretty responsive, with fine control

A fitted wooden box is included for storing the plane when it's not in use

their block planes, having a series of grooves that link to a knurled wheel via a fabricated adjuster, and this is actually different to the original Stanley design which had a lever advance.

Cutting angles

The bed angle and skew of the blade are designed to give a premium finish on the work, and that can't be disputed; it does do a fantastic job once the iron is honed. A quick comparison to the Veritas once again shows that the tightness of the mouth is somewhat different – only 1.5mm on the Veritas when set for a fine shaving, but a full 3mm on the Qiangsheng. Even so, the finish achievable is excellent, belying the dictum that a narrow mouth is better for avoiding tearout.

Steel all round

Stainless steel is the metal of choice for the cap iron as well as the adjuster wheel, while the iron is T10 tool steel hardened to Rockwell RC 60-63. The 3mm thick iron took seconds to gain an edge, proving good and flat on the back.

Adjusters often come up short for finish and quality, but there is engineering excellence here. The crisp clean knurls on the knobs and the softened edges on the satin finished lever cap give it a classy look.

All-round performance

This plane has the capacity to square up stock as wide as 25mm. The sole has a small relief groove for crisp corner work, and a quick check for square inside the cast sole shows it hitting the spot perfectly.

A couple of holes on the casting also allow the use of wedge-shaped facings to do consistent bevel or coopering projects, so there's scope to experiment beyond easily achieving consistent square edges. ***AK***

SPECIFICATION

BLADE	T10 tool steel
CUTTING WIDTH	25mm
WEIGHT	880g

VERDICT

Although this may be a specialist tool for some, it's a very affordable plane and of excellent quality.

PROS
- Good quality
- Budget price
- Handy storage box

CONS
- Wide mouth when set for fine cut

VALUE FOR MONEY ■■■■■

PERFORMANCE ■■■■■

FURTHER INFORMATION

- Derbyshires
- 01704 501111
- www.aderbyshire.co.uk

Long grain smoothing is the area where this plane will see the most work

However, the skewed iron also works particularly well on end grain...

...taking full shavings with no break-out and leaving a glassy smooth surface

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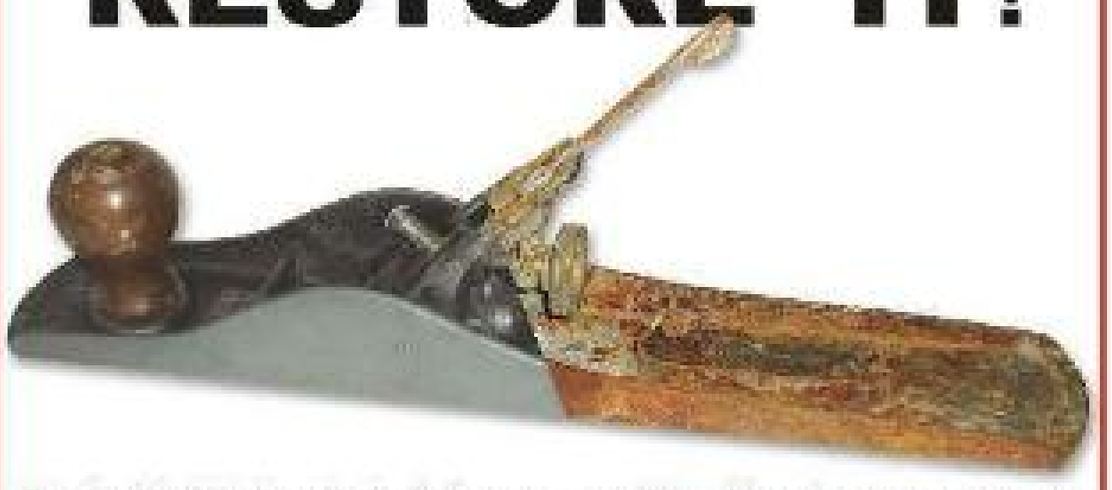

Stanley No.5 'before & after' photo courtesy Peter Hemsley – The ToolPost

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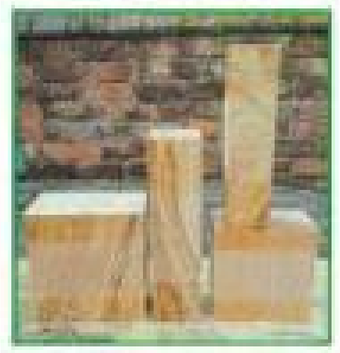

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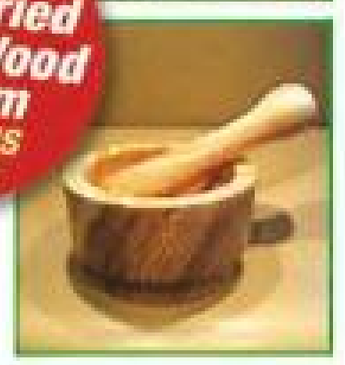

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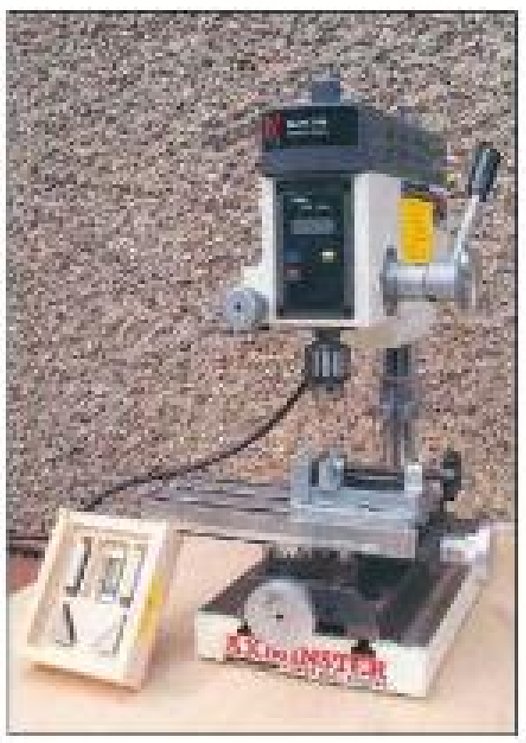

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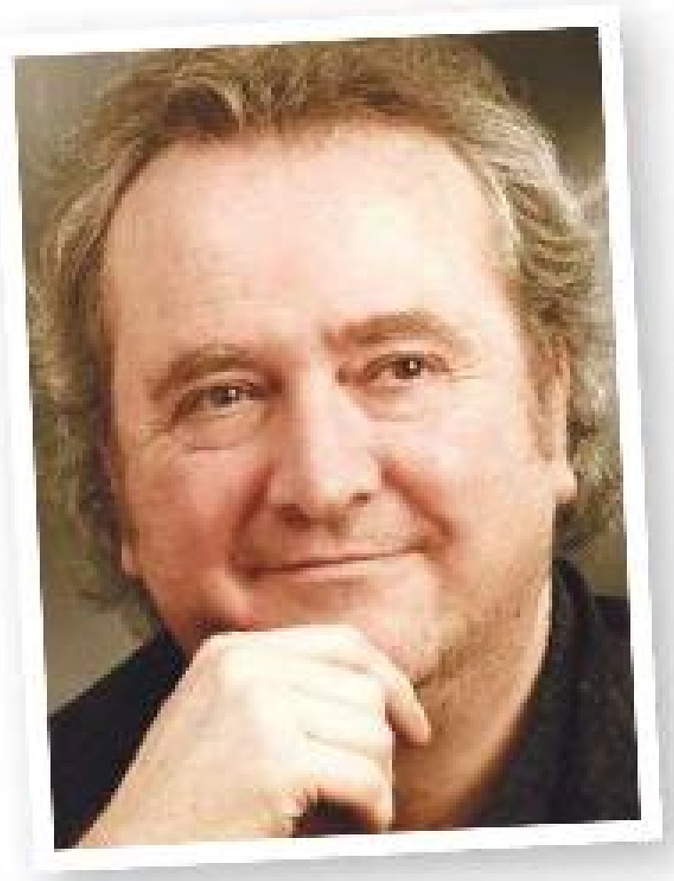


The old carpenter's trick

You could comfortably house a family of four in our loft. They would have to be under five feet tall, of course, and the loft would have to be empty. I suspect there's also an alternative set of house contents up there, and for all I know there are doubles of my wife and me living amongst it all.

I've often thought it would make a great workshop space, although I'd have to stand with a permanent stoop… as I was reminded when I re-designed my forehead recently using a handy crossbeam.

I was on a mission hunting for a patchwork quilt my wife had decided she couldn't live without, when I met the crossbeam full on. Naturally I scowled at it while I rubbed my head. Instead of apologizing, it revealed a random pattern of small holes.

Alien invasion

I didn't find the quilt, and when I mentioned the holes in the beam my wife was doubly perturbed. We'd been considering putting the house on the market, and now it seemed we had an infestation of small tunnellers in the loft. 'We'll have to call in an expert', she announced.

Half an hour later my father-in-law Hector was on the phone, talking about doing a recce. Before he retired he ran a national roofing company, so he's the in-house expert on roofs. In fact he's an expert on anything you care to mention. We used to call him *The Oracle*, but he's now been digitally upgraded to *Google*.

Hatching a plan

I think his pipe helps. He pointed it at the holes in the crossbeam while I shared my fantasy about replacing it. 'Some people fantasise about a lot worse', he said, sagely. Then he asked, somewhat unexpectedly: 'Do you have any porridge?' It was just after ten on a Saturday morning and I hadn't eaten yet. Porridge sounded like a plan.

'Do you want coffee with that?' asked my wife. 'Not for me,' said Hector, and off he went up the Ramsay ladder with his dainty pot of porridge. He'd opted for the original sort – 'unpoisoned', as he called it – while I'd plumped for the blueberry (much healthier). I followed him up the ladder.

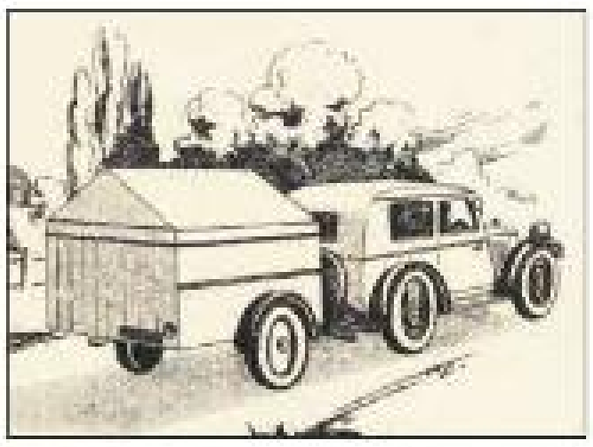
Fixing a hole

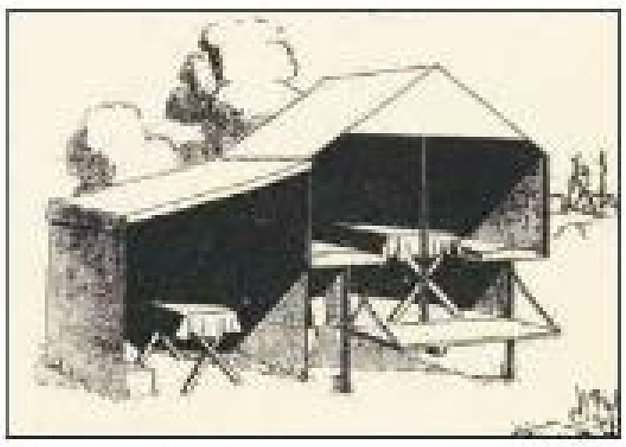
We stood there for a moment staring at the boreholes in the beam, surveying them with our expert eye… or at least Hector did. I just managed to stare knowingly. Suddenly he flipped his spoon round and dipped the wrong end into the porridge, scooping up a peanut's worth. I thought: if he's going to eat it like that, we'll be up here all day. Then he began pushing it into the holes.

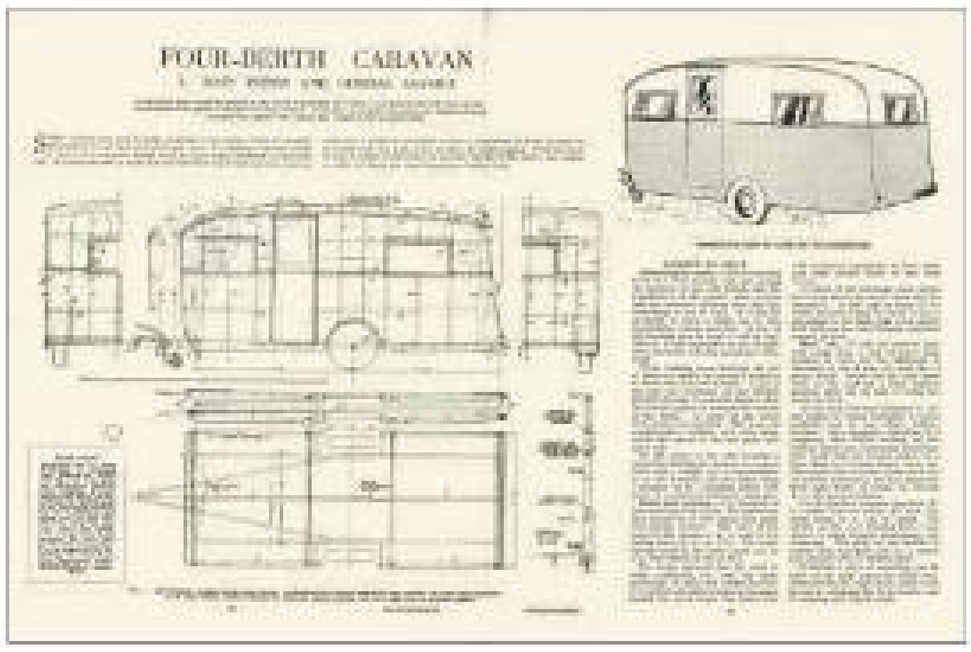
'An old carpenter showed me this trick', he said. 'Presumably the old carpenter was sacked', I remarked. Hector smiled. 'Actually he owned a multi-million pound building company', he replied. I should have guessed.

When the porridge had dried there was no trace of it, or of the holes. 'It doesn't work so well with these modern fancy flavours', said Hector, pointing at the remains of my blueberry porridge.

My wife was visibly impressed. Then she asked: 'Did you find the quilt?'







Summer holidays

By the 1930s quite a few families had a car, and no longer needed to rely on the train to reach their holiday destination. Before long, the idea of taking the accommodation along too began to catch on...

The earliest *Woodworker* mobile home we've been able to find in our archive appeared in the July 1932 issue. It wasn't a true caravan (top left), more a trailer that converted into a two-person tent with a canvas-roofed lean-to alongside it. But it was a start...

Two years later the competition got serious, with the magazine publishing a two-part feature on building a 12 x 6ft four-berth trailer caravan (above) that would need at least a 12hp car to tow it. The articles appeared in the July and August issues – probably too late for the 1934 summer, alas! – and ran to a total of ten pages, covering everything from constructing the angle-iron chassis to fitting out the interior with a double bed, an ingenious rise-and-fall set of bunks, a wardrobe, a linen cupboard, a working galley and a sink-cum-washbasin that emptied straight onto the road. The toilet was outside, though...

Moving on

By the mid-1930s, caravan mania was clearly gripping the nation, and the magazine presented another trailer version (top right) in April and May 1936 – better timing for the holiday season this time. It was a much swankier design, with curves more reminiscent of a 1950s tourer, and offered space for three adults or a two-child family. It had a light but strong ash frame (very Morgan) on a steel chassis, and was clad with hardboard that was then waterproofed with a coat of red lead paint over which aeroplane linen was to be stretched and tacked. There was still no inside loo!

The full Monty

It took a while after the war for timber supplies to get back to normal, but by 1956 the magazine felt able to present two full-size blueprint plans (costing ten shillings plus fourpence for postage) for a very sophisticated four-berth caravan (above) that was almost 16ft long and featured a fashionable flared tail. The central roof section was of canvas-covered plywood, while the curved front and rear sections were of 18swg aluminium sheet. This was also used for the wall panels, making the caravan remarkably light... and the walls were insulated too! All in all it was quite a project to undertake; you'd certainly need a very large garage workshop in which to build it. I wonder if any still exist, hidden in a barn or decaying in a field somewhere...

Mike

(Mark is away)

More from The Woodworker archive next month...

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Limited Access

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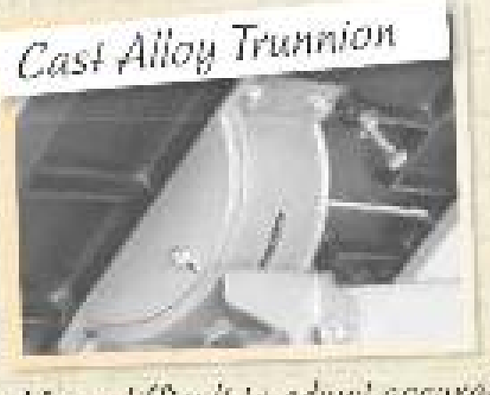
Cast Alloy Trunnion



More difficult to adjust accurately, requiring two-handed operation.

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