

Woodworking

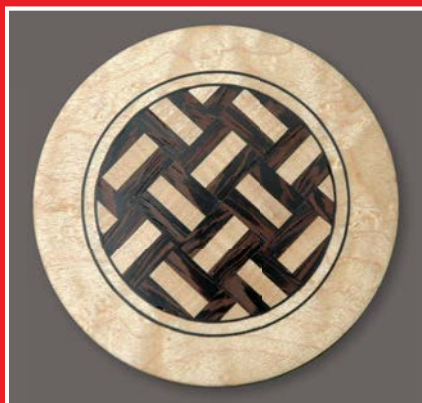
CRAFTS

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

**SPRING
GARDEN &
OUTDOOR
ISSUE**

Make your own
shed and save £££s!

GARDEN PLANTER • PATCHWORK BROOCH • ROUTER EXTRACTION BASE



NEW STORE
KIDDERMINSTER
OPENS JUNE '18

Clarke TABLE SAWS

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

FROM ONLY
£72.99
EXC.VAT
£87.99
INC.VAT

INCLUDES
LEFT
& RIGHT
TABLE
EXTENSION

MODEL	MOTOR	BLADE	EXC.VAT	INC.VAT
CTS800B	600W	200mm	£72.99	£87.99
CTS11	1500W	254mm	£154.99	£185.99
CTS10D	1500W	254mm	£169.99	£203.99

**BEST
SELLER**
CTS10D

Machine Mart

**66 SUPERSTORES
NATIONWIDE**

**WHERE QUALITY
COSTS LESS**

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

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

FROM ONLY
£129.99
EXC.VAT
£155.99
INC.VAT

SHOWN WITH
OPTIONAL LEP KIT
CLIKS **£19.99**
EXC.VAT
£23.99 INC.VAT

Clarke EVOLUTION FURY-S TABLE SAW

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

FROM ONLY
£159.99
EXC.VAT
£191.99
INC.VAT

3 YEAR

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating
PROANE
GAS FIRED

FROM ONLY
£79.99
EXC.VAT
£95.99
INC.VAT

MODEL	MAX OUTPUT KW	EXC. VAT	INC. VAT
Little Devil II	10	£79.99	£95.99
Little Devil SSI	10.3	£84.99	£101.99
Devil 700	15	£99.99	£119.99
Devil 900	24.9	£139.99	£167.99
Devil 910 SS	17.6-24.9	£159.99	£191.99
Devil 1600	36.6	£169.99	£203.99
Devil 2100	46.8	£259.99	£310.80
Devil 4000	70-131	£399.00	£477.60

Clarke ELECTRIC HEATERS

DEVIL 6003
DEVIL 7003

MODEL	VOLTAGE	HEAT OUTPUT KW	EXC.VAT	INC.VAT
DEVIL 6003	230V	1.5-3	£49.99	£59.99
DEVIL 7003	230V	3	£59.99	£71.99
DEVIL 6005	400V	2.5-5	£89.99	£93.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£109.99	£130.80
DEVIL 7009	400V	9	£129.99	£155.99
DEVIL 6015	400V	5-10-15	£169.99	£202.80
DEVIL 7015	400V	15	£199.99	£239.99
DEVIL 7025	400V	22	£299.99	£358.80
DEVIL 7030	400V	30	£349.99	£418.80

*was £89.99 inc.VAT *was £142.80 inc.VAT
*was £167.99 inc.VAT *was £214.80 inc.VAT

BLACK + DECKER POWER PLANERS

TE-PL850
• 82mm cutting width

FROM ONLY
£54.99
EXC.VAT
£65.99
INC.VAT

MODEL	DEPTH OF CUT	EXC.VAT	INC.VAT
Einhell TE-PL850 850W	3mm	£54.99	£65.99
B&W K750K - GB 750W	2mm	£57.99	£69.99

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

CDE7B
CWVE1
• Powerful 1100W motor • 50 litre bag capacity • Flow rate of 850M³/h

FROM ONLY
£109.99
EXC.VAT
£131.99
INC.VAT

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CWVE1	1100W	183 M ³ /h	50Ltrs	£109.99	£131.99
CDE35B	750W	450 M ³ /h	56Ltrs	£144.99	£173.99
CDE7B	750W	850 M ³ /h	114Ltrs	£159.99	£191.99

Clarke RANDOM ORBITAL SANDER

• Adjustable front handle improves control • 7000-14000rpm

FROM ONLY
£32.99
EXC.VAT
£39.99
INC.VAT

Clarke 18V CORDLESS DRILL/DRIVERS

CON18LI
CON18LI
CON18LI

FROM ONLY
£69.99
EXC.VAT
£83.99
INC.VAT

MODEL	VOLTS	BATTS	EXC. VAT	INC.VAT
CON18NI	18V	2 x Ni-Cd	£69.99	£83.99
CON18LI	18V	2 x Li-Ion	£89.99	£107.99

Clarke ELECTRIC POWER FILE

CPF13
• Variable belt speed
• Tilting head

FROM ONLY
£49.99
EXC.VAT
£59.99
INC.VAT

MODEL	MOTOR	BELT SIZE (mm)	EXC.VAT	INC.VAT
CPF13	400W/230V	13x457	£49.99	£59.99
KA900E	350W/230V	13x455	£59.99	£71.99

Clarke CONTRACTOR 18V BRUSHLESS COMBI DRILLS

CON18LI
CON18LI
CON18LI

FROM ONLY
£109.99
EXC.VAT
£131.99
INC.VAT

MODEL	VOLTS	BATTS	EXC. VAT	INC.VAT
CON18LI	18V	2 x 2.0Ah Li-Ion	£109.99	£131.99
CON18LI	18V	2 x 4.0Ah Li-Ion	£169.99	£203.99

Clarke BOLTLESS SHELVING/BENCHES

• Simple fast assembly in minutes using only a hammer

FROM ONLY
£29.99
EXC.VAT
£35.99
INC.VAT

MODEL	DIMS WxDxH(mm)	EXC.VAT	INC.VAT
150k	800x300x1500	£29.99	£35.99
350k	900x400x1800	£49.99	£59.99

Clarke WHETSTONE SHARPENER (200MM)

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

ONLY
£119.99
EXC.VAT
£143.99
INC.VAT

Clarke STANLEY Record WOODWORKING VICES

VW7

FROM ONLY
£14.99
EXC.VAT
£17.99
INC.VAT

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EXC.VAT	INC.VAT
Clarke CHT152	Bolted	150/152/61	£14.99	£17.99
Stanley Clamped	72/60/40		£18.99	£22.79
Record TV75B Clamped	75/50/32		£21.99	£26.39
Clarke VW7	Bolted	180/205/78	£29.99	£35.99

Clarke CORDLESS STAPLE/ NAIL GUN

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

FROM ONLY
£109.99
EXC.VAT
£131.99
INC.VAT

CONSN18LIC

SPARE NAILS /
STAPLES IN STOCK

Clarke AIR TOOLS

CAT165
CAT111
CAT165
CAT168

FROM ONLY
£21.99
EXC.VAT
£26.39
INC.VAT

*was £59.99 inc. VAT

Clarke BELT SANDERS

• Ideal for surface removal, sanding and finishing

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

Clarke CIRCULAR SAWS

CON185

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

*Includes laser guide

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC.VAT	INC.VAT
CCS185B	1200W	65/44	£41.99	£50.39
CCS2	1300W	60/45	£59.99	£71.99
CON185	1600W	60/40	£62.99	£75.99

Clarke QUALITY CAST IRON STOVES

8kW
OVER 22 QUALITY
STYLES ON DISPLAY
ENERGY RATING A
FLUES, COWLS &
ACCESSORIES
IN STOCK

TURBO AIR COMPRESSORS

• Superb range ideal for DIY, hobby & semi-professional use

FROM ONLY
£89.99
EXC.VAT
£107.99
INC.VAT

MODEL	MOTOR	CFM	TANK	EXC.VAT	INC.VAT
8/250	2HP	7.5	24litre	£89.99	£107.99
7/250	2HP	7	24litre	£94.99	£113.99
11/250	2.5HP	9.5	24litre	£109.99	£131.99
8/510	2HP	7.5	50litre	£119.99	£143.99
11/510	2.5HP	9.5	50litre	£139.99	£167.99
16/510*	3HP	14.5	50litre	£209.00	£250.80
16/1010*	3HP	14.5	100litre	£259.99	£311.99

Clarke HARDWOOD WORKBENCH

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

FROM ONLY
£149.99
EXC.VAT
£179.99
INC.VAT

Clarke DETAIL SANDERS

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

FROM ONLY
£49.99
EXC.VAT
£59.99
INC.VAT

MODEL	WATTS	EXC.VAT	INC.VAT
PS105	105W	£19.99	£23.99
CD5-1V	280W	£29.99	£35.99

ALL MODELS INC. SANDING SHEETS

VAC KING WET & DRY VACUUM CLEANERS

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

FROM ONLY
£49.99
EXC.VAT
£59.99
INC.VAT

MODEL	MOTOR CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.99
CVAC20SS	1400W	16/12ltr	£59.99
CVAC20PR2	1400W	16/12ltr	£64.99
CVAC25SS	1400W	19/17ltr	£67.99
CVAC30SSR	1400W	24/21ltr	£89.99

Clarke PLANERS & THICKENERS

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

FROM ONLY
£184.99
EXC.VAT
£221.99
INC.VAT

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£219.99	£263.98
CPT1000	10"	120mm	£299.00	£358.80

Clarke 4" BELT/ 6" DISC SANDER

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

FROM ONLY
£92.99
EXC.VAT
£111.99
INC.VAT

Clarke 6" BELT/ 9" DISC SANDER

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

FROM ONLY
£239.00
EXC.VAT
£286.99
INC.VAT

Clarke 1" BELT/ 5" DISC SANDER

• Includes 2 tables that tilt & lock
• Quality induction 300W motor

FROM ONLY
£69.99
EXC.VAT
£83.99
INC.VAT

Clarke 4" BELT/ 8" DISC SANDER

• Includes two tables
• 550W 230V motor
CS4-8

FROM ONLY
£159.99
EXC.VAT
£191.99
INC.VAT

Clarke DISC SANDER (305MM)

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

FROM ONLY
£129.99
EXC.VAT
£155.99
INC.VAT

Clarke SHEET SANDERS

• Ergonomic design for optimum comfort
*was £41.99 inc.VAT

FROM ONLY
£16.99
EXC.VAT
£20.99
INC.VAT

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190x90mm	150W	£16.99	£20.99
COS300	230x115mm	330W	£32.99	£39.99

Clarke PORTABLE THICKENER

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

FROM ONLY
£219.00
EXC.VAT
£262.99
INC.VAT

Clarke OSCILLATING BOBBIN SANDER

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

FROM ONLY
£139.99
EXC.VAT
£167.99
INC.VAT

Clarke OSCILLATING BELT & BOBBIN SANDER

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

FROM ONLY
£179.99
EXC.VAT
£215.99
INC.VAT

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THE COST**

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Clarke SLIDING COMPOUND MITRE SAWS

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

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

MODEL	BLADE DIA/BORE DEPTH (mm)	CROSS CUT	EXC. VAT	INC. VAT
CMS10S2	210/30	60/120	£69.98	£107.98
CMS210S	210/30	60/120	£69.98	£107.98
CMS10S2	254/30	78/340	£139.98	£167.98

Clarke MITRE SAWS

FROM ONLY **£59.98** EXC.VAT
£71.98 INC.VAT

- Laser Guide
- Sliding Compound

MODEL	BLADE DIA/BORE DEPTH (mm)	CROSS CUT	EXC. VAT	INC. VAT
CMS210	210/30	60/120mm	£59.98	£71.98
Einhell TC-MS 2112	210/30	55/120mm	£59.98	£71.98
Einhell TC-SM 2131	210/30	62/310mm	£129.98	£155.98
Einhell TC-SM 2534	254/30	75/340mm	£159.98	£191.98

Clarke WORK TABLE SUPPORTS (PAIR)

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

ONLY **£29.98** EXC.VAT
£35.98 INC.VAT

Clarke DRILL PRESSES

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

FROM ONLY **£66.98** EXC.VAT
£80.98 INC.VAT

MODEL	MOTOR (W)	EXC. VAT	INC. VAT
CDP35B	350/5	£66.98	£80.98
CDP102B	350/5	£79.98	£95.98
CDP152B	450/12	£149.98	£179.98
CDP202B	450/16	£189.98	£229.98
CDP10B	370/12	£198.98	£238.98
CDP452B	550/16	£229.98	£274.98
CDP352F	550/16	£229.98	£274.98
CDP502F	1100/12	£499.98	£598.98

B = Bench mounted
F = Floor standing

Clarke CONTRACTOR BOSCH JIGSAWS

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

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

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC. VAT
CON750	420W	55/6mm	£15.99	£19.19
CJS380	750W	80/10mm	£27.99	£33.99
Bosch PST700E	500W	70/4mm	£49.98	£59.98

BISCUIT JOINTER

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

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

Clarke SCROLL SAWS

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

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

MODEL	MOTOR	SPEED RPM	EXC. VAT	INC. VAT
CSS400B	85W	1450	£82.99	£99.99
CSS16VB	90W	550-1600	£94.99	£113.99
CSS400C	90W	550-1600	£114.99	£137.99

Clarke 13" MINI WOOD LATHE

FROM ONLY **£154.99** EXC.VAT
£185.99 INC.VAT

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

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

FROM ONLY **£39.98** EXC.VAT
£47.98 INC.VAT

Clarke 12" DOVETAIL JIG

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

FROM ONLY **£57.99** EXC.VAT
£69.99 INC.VAT

Clarke BENCH BANDSAW

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

FROM ONLY **£129.98** EXC.VAT
£155.98 INC.VAT

Clarke MORTISING MACHINE

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

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

Clarke STATIC PHASE CONVERTERS

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

FROM ONLY **£229.99** EXC.VAT
£274.80 INC.VAT

Clarke ROUTERS

- Powerful heavy duty machines ideal for trade and DIY use

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

Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes
- 6" & 8" AVAILABLE WITH LIGHT

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

Clarke ROUTER TABLE

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

FROM ONLY **£69.98** EXC.VAT
£83.98 INC.VAT

Clarke PROFESSIONAL BANDSAWS

- Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table
- Table tilts 45° • Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors
- Includes stand

FROM ONLY **£199.00** EXC.VAT
£238.80 INC.VAT

Clarke CONTRACTOR BOSCH ROUTERS

- Powerful heavy duty machines ideal for trade and DIY use

FROM ONLY **£46.99** EXC.VAT
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Clarke GRINDERS & STANDS

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- 6" & 8" AVAILABLE WITH LIGHT

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£39.99 INC.VAT

Clarke ROUTER TABLE

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

FROM ONLY **£69.98** EXC.VAT
£83.98 INC.VAT

Clarke PROFESSIONAL BANDSAWS

- Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table
- Table tilts 45° • Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors
- Includes stand

FROM ONLY **£199.00** EXC.VAT
£238.80 INC.VAT

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FROM ONLY **£32.99** EXC.VAT
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Clarke ROUTER TABLE

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

FROM ONLY **£69.98** EXC.VAT
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Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes
- 6" & 8" AVAILABLE WITH LIGHT

FROM ONLY **£32.99** EXC.VAT
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Clarke ROUTER TABLE

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

FROM ONLY **£69.98** EXC.VAT
£83.98 INC.VAT

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- Stands come complete with bolt mountings and feet anchor holes
- 6" & 8" AVAILABLE WITH LIGHT

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- Stands come complete with bolt mountings and feet anchor holes
- 6" & 8" AVAILABLE WITH LIGHT

FROM ONLY **£32.99** EXC.VAT
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01242 514 402
01244 311258
01206 762831
024 7622 4227
020 8763 0640
01325 380 841
01304 373 434
01332 290 931
01302 245 999
01382 225 140

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GLOUCESTER 221A Barton St, GL1 4HY
GRIMSBY ELLIS WAY, DN32 9EG
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LIFORD 746-748 Eastern Ave, IG2 7HU
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LEICESTER 69 Melton Rd, LE4 6PN
LINCOLN Unit 5, The Pelham Centre, LN5 8HG
LIVERPOOL 80-88 London Rd, L3 5NF
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Welcome

to the April issue of
Woodworking Crafts

Hello Everyone and welcome to the April issue of *Woodworking Crafts*.

It's that time of year

Yes, Spring has sprung and we all need to get out and get busy so as usual at this time of year our focus is on the great garden outdoors. There are plenty of articles to choose from; I hope you enjoy the green and garden slant we have this time and it doesn't have to cost a fortune or need loads of skill either.

Star letter

In our Ask The Experts pages we had a letter from Nat and Gail Benton – it went like this:

'We recently moved into a Victorian terraced cottage which we have been told dates to 1827 and originally built as a bakery but never used as such; instead it became a grocer's shop followed then by a butcher's shop, both serving the big houses round about. In the late 19th century new wing properties were added creating the current terraced houses. Our bedroom seems to have the oldest floorboards in the house, but they do creak a bit when we walk on them. We are about to get a new carpet laid so I lifted a section of the old carpet that was left behind and found it had been screwed down with modern screws and a piece of tin sheet nailed I guess, over a hole in the boards. I'm not sure how to deal with the creaking as I

haven't tried lifting floorboards before, any advice please?'

Unfortunately we ran out of space for the last bit of my rather lengthy reply which was to the effect our houses have a history all of their own:

'In 1827 the Duke of Wellington was appointed commander in chief of the forces, the death of William Blake, poet and painter and the Greek War of Independence, the last naval battle fought under sail alone. Your house has obviously had a past all of its own – perhaps it is worth researching?'

It's all too easy to not even think of finding out about our properties and yet it can be a fascinating subject. I was once shown around a gutted Victorian workhouse, being readied for conversion into desirable modern apartments. The heavily worn floorboards and handrails told their own tragic story – I felt that I was an uncomfortable witness to the last vestiges of Dickensian poverty and misery. Many other places have much happier tales to tell; have you taken a step into the past and found out who else lived where you are now?

Anthony Bailey, Editor
Email: anthonyb@thegmcgroup.com

Cover photograph by Steve Wooster/Berry & Co



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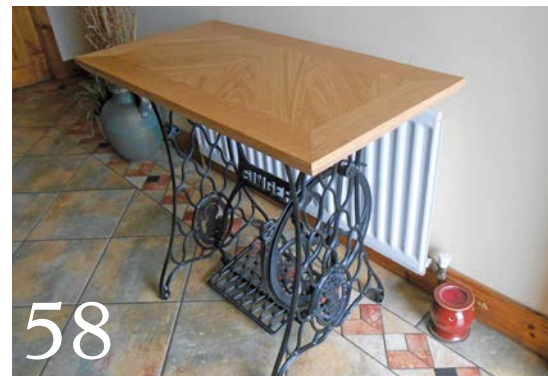
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Design INSPIRATION

Every garden needs a shed, a place to store, a
hideaway, a place to work, a place to dream...

Vertical
boards
suggest a
shepherd's
hut and the
shutters add
detail and
charm

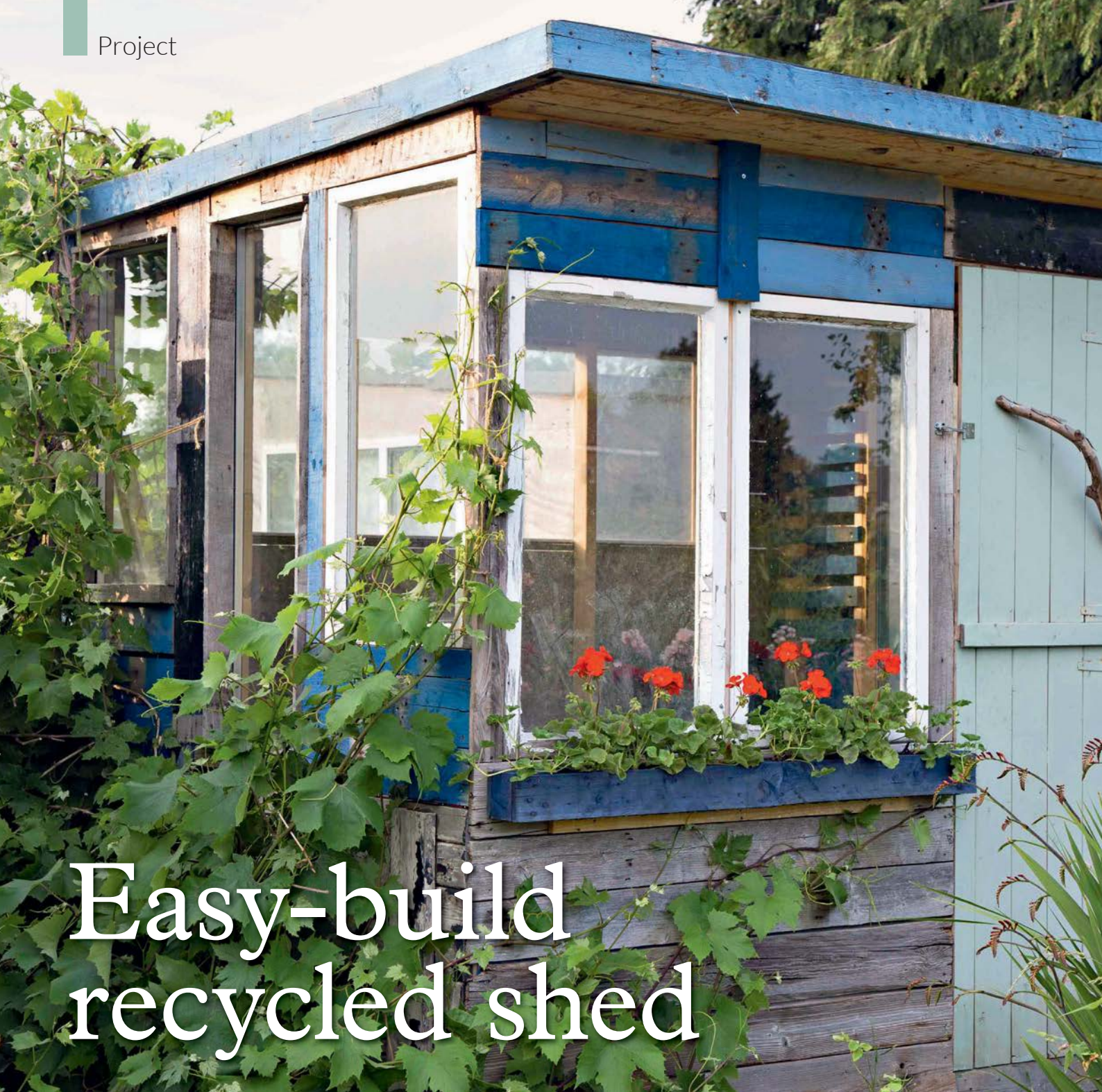
Sometimes things
can get a bit too
much for a shed...

A neat shed with plain bargeboards and a wooden step is enhanced by net curtains

A shed is
also a means
of adding
extra storage,
in this case
a winter's
supply of logs

Plenty of
glazing to
catch light,
whether as a
potting shed
or a craft and
writing den

Go the whole hog and have a shed big enough to
make extra living space, complete with stable door



Easy-build recycled shed

You too can make a shed of many parts

This shed replaced one that had fallen down (it had been hand-built just after World War II) and some bits of nice old planking were retained. The replacement shed was less utilitarian, offering a refuge from the elements and a place to brew up tea as well as somewhere to store all the usual tools and gardening paraphernalia. With extra light from well-positioned windows it can now be used for seed sowing and for bringing on plants. If you take your time and enlist the help of a buddy, building your own shed is inexpensive, offering a more robust structure than a shop-bought one.

Overall size: 2500mm (w) x 2100mm (d) x 2300mm (h)



From tumbledown wreck to a handsome shed in a few days with some hard work and a friend to help. The finished shed is enhanced with a pallet-made window box



Materials

- Timber for decking and shed (mostly recycled)
- Studwork, screws, nails
- Concrete for base
- Recycled windows
- Roofing felt
- Recycled door and strap hinges
- Weatherproof caulk

Constructing the shed

Make a base and lay decking. It is a quicker option than a slab base and it is easier to fix walls to. Erect studwork frames, clad with timber and add windows, roof and door.

Making the base

1 Lay a 'floating' frame for the decking using concrete pads. Here nine pads were laid, providing a supported span of around 1m in each direction. Both new and recycled joists were used. Ground is rarely totally flat, so level the framework using short lengths of offcut timber or bricks placed between pads and joists. Check carefully with a spirit level. All recycled timber should be treated with a wood preservative, paying particular attention to sawn ends. Any short lengths of offcut timber are best immersed in the preservative so that it is fully absorbed into them.

Building on concrete pads

As an alternative to laying a solid concrete base, pads of concrete will usually suffice for relatively lightweight wooden structures. Pads should be placed every metre or so. Dig holes at least 30cm square and at least 30cm deep. Fill the bottom with a layer of hardcore, tamping down firmly, and fill each hole with a strong concrete mix of around one part cement to five parts ballast. Allow to dry thoroughly, ideally for at least a day.



2 Lay the decking, which will become the shed floor. The decking here was cheaply bought gravel boards, though recycled decking planks could be used just as easily. ➤



1



2

Building the shed



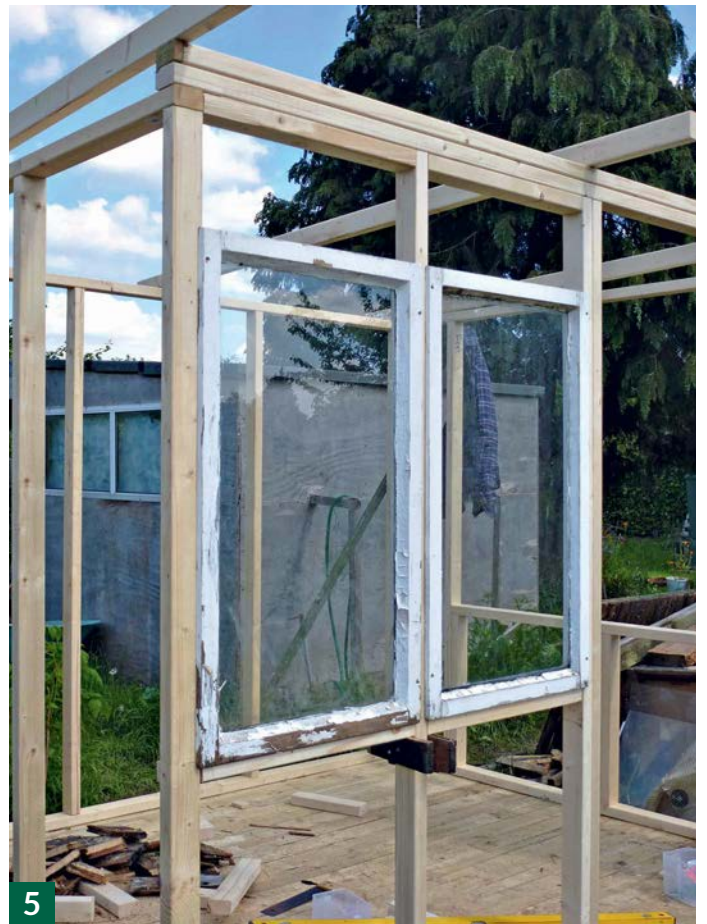
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3 Make frames for the walls and windows. Studwork timber is cheap, light and, being of a regular size, convenient to use. Position uprights ensuring that the spaces between them allow for the recycled windows to be fitted. Diagonal bracing will keep the frame square during construction.



4

4 Add timber cladding from whatever boards are available. Here some were used from the original old shed.



5

5 Position windows as required. Timber-framed windows can be screwed into the studwork walls. Make good any gaps around the windows with fresh putty or weatherproof caulking or filler.



6 To provide a slight slope for the roof, build up one end of the walls with a couple of extra layers of studwork timber. It's not essential but a waterproof, breathable membrane can be used on walls, seen here as the grey material.

6



7

7 Fix more timbers to provide a support for the roofing panels. It's good to have an overhang to avoid any rain entering above the doors.

8 Continue by adding more cladding and windows. Here an old piece of strand board (OSB) quickly covers the rear wall of the shed. ➤



8



9

9 Add flat sheets of timber, in this case strand board (OSB), for the roof base. Nail or screw the timber sheets to the roofing timbers prior to covering with a layer of roofing felt. This is attached using a heavy-duty stapler or short-clout nails.



10

10 Add lengths of timber to cover the ends of the roof rafters. Here an old door was used on its side to fill in the bottom half of one wall.



11

11 Add roofing felt. The shed is now near completion, just requiring a door, some more cladding and some finishing touches, such as covering the edges of the roofing felt.

Finishing touches for the shed



A light and airy space is achieved by including lots of windows. Glass covers large areas quickly and the effect is a great improvement on the small plastic windows in many shop-bought sheds.



Pallet planks and sections are used to provide simple shelving, and split strips from a blue-painted pallet (far left)



Make an attractive tool rack with next to no effort



Above: A found two-part, or stable, door was attached using strap hinges. These are a good choice as they are both strong and easily surface mounted. ■

The Upcycled Garden

by Steven Wooster and Susan Berry

Steven and Susan show how to create a range of useful structures and furnishings, both large and small, at relatively little expense by using mostly recycled materials.

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A woodworking glossary

The letter M



PHOTOGRAPH BY PETER SEFTON

A wheel marking gauge

MARKING GAUGE An adjustable device with a steel pin, roller or knife that marks a single layout line parallel to a wood edge.

MARQUETRY A form of inlay in which pieces of veneer are cut into shapes and inserted into another piece of veneer, which is then laminated to another surface. It is cut by scalpel, hand fretsaw or marquetry 'donkey' machine, or industrially using a laser cutter, depending on the type of work being done.



PHOTOGRAPH BY LOUISE BIGGS

Knife-cut marquetry

MDF Medium Density Fibreboard, an engineered panel product consisting of wood fibres that are glued under heat and pressure. A very stable underlay for table tops, counter tops and cabinet construction generally. A waterproof version is used for making three-dimensional signs. The term 'medium' refers to the density of the product. There is a less common high density variant which is much heavier.

MEDULLARY RAYS The structure in a tree that stores and delivers sustenance horizontally through the trunk. In some species, such as oak,

the medullary rays can be quite large. When the tree is quartersawn, the rays become visible on the face of the board and are considered aesthetically desirable.

MILK PAINT A paint made with milk solids, chemically akin to casein glue, often the original finish on antique furniture. Nowadays synthetic versions are available.

MISSION STYLE A design that emphasises simple horizontal and vertical lines and flat panels that accentuate the grain of the wood, usually oak. Gustav Stickley produced Arts & Crafts furniture often referred to as being in the Mission Style.

MITRE GAUGE A device that slides in a tablesaw or bandsaw table slot, parallel to the blade and fitted with a pivoting protractor head and fence to facilitate crosscutting at different angles.

MITRE JOINT A traditional box or picture frame joint that hides end grain. Mitre joint can be tricky to cut perfectly and align during glue-up. Such joints have limited strength without reinforcement, such as biscuits or thick veneer slips glued and fitted in slots across the joint.

MITRE SAW A handsaw used with a mitre box or a powered saw which is designed for perpendicular and angled crosscutting.

MORSE TAPER The standard design for the taper on the shanks of drill chucks, drill bits and lathe centres. The different sizes of tapers are designated by numbers, No.0 being the smallest. No.3 is common for drill chucks.

MORTISE A recess or hole drilled, routed or chiselled into a piece of wood to receive a tenon or some kind of hardware, such as a lock or hinge. Generally rectangular but it can also be square or round depending on the requirement.



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Medullary rays on oak

MOULDING A strip of wood with a shaped profile used for ornamentation or finishing.



PHOTOGRAPH BY GMC/ANTHONY BAILEY

A selection of mouldings

MULLION A vertical element that separates panes or panels inside a frame or window opening. They can be stone, brick or wood.



PHOTOGRAPH BY STEVE BISCO

Carving detail on a mullion

MUNTIN The glazing bars separating individual panes of glass. ■

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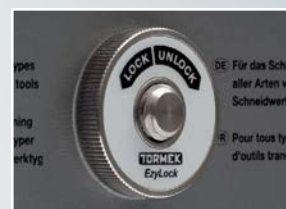
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Build a planter from pallets

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

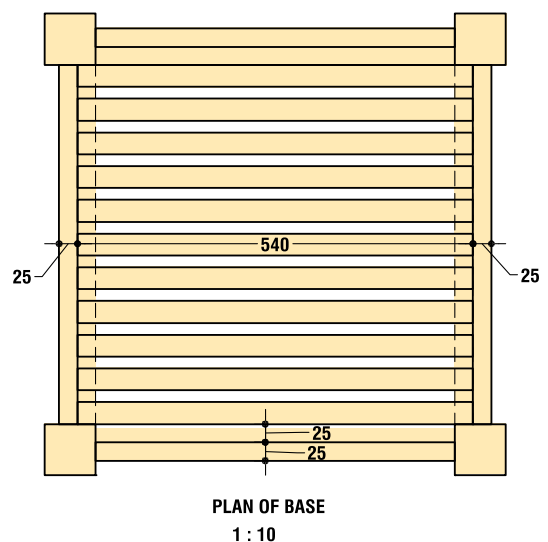
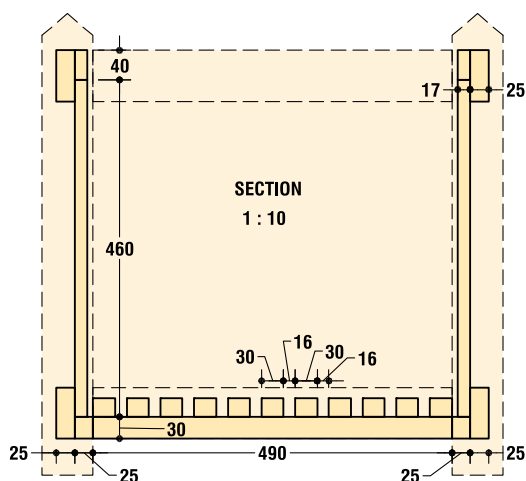
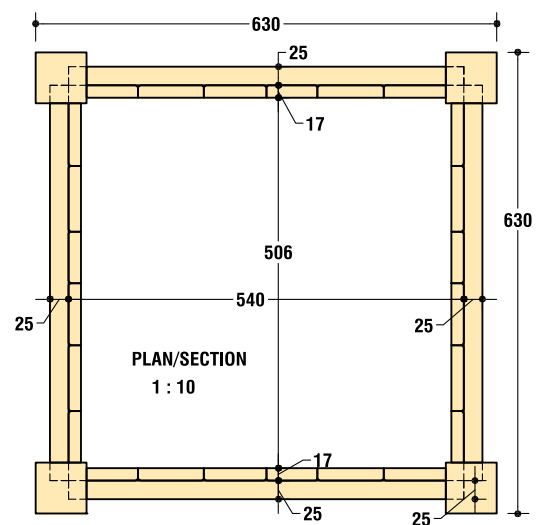
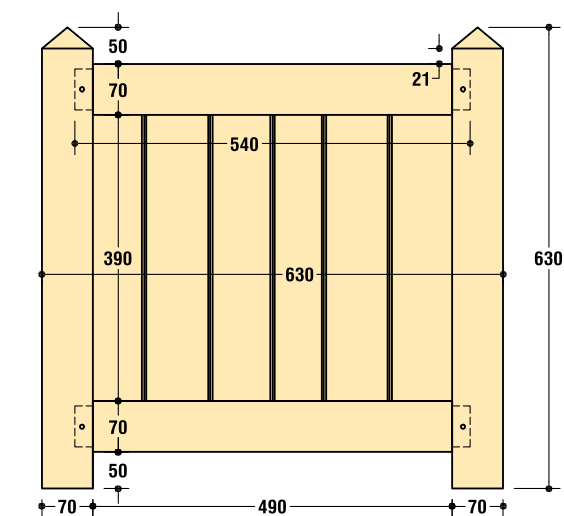
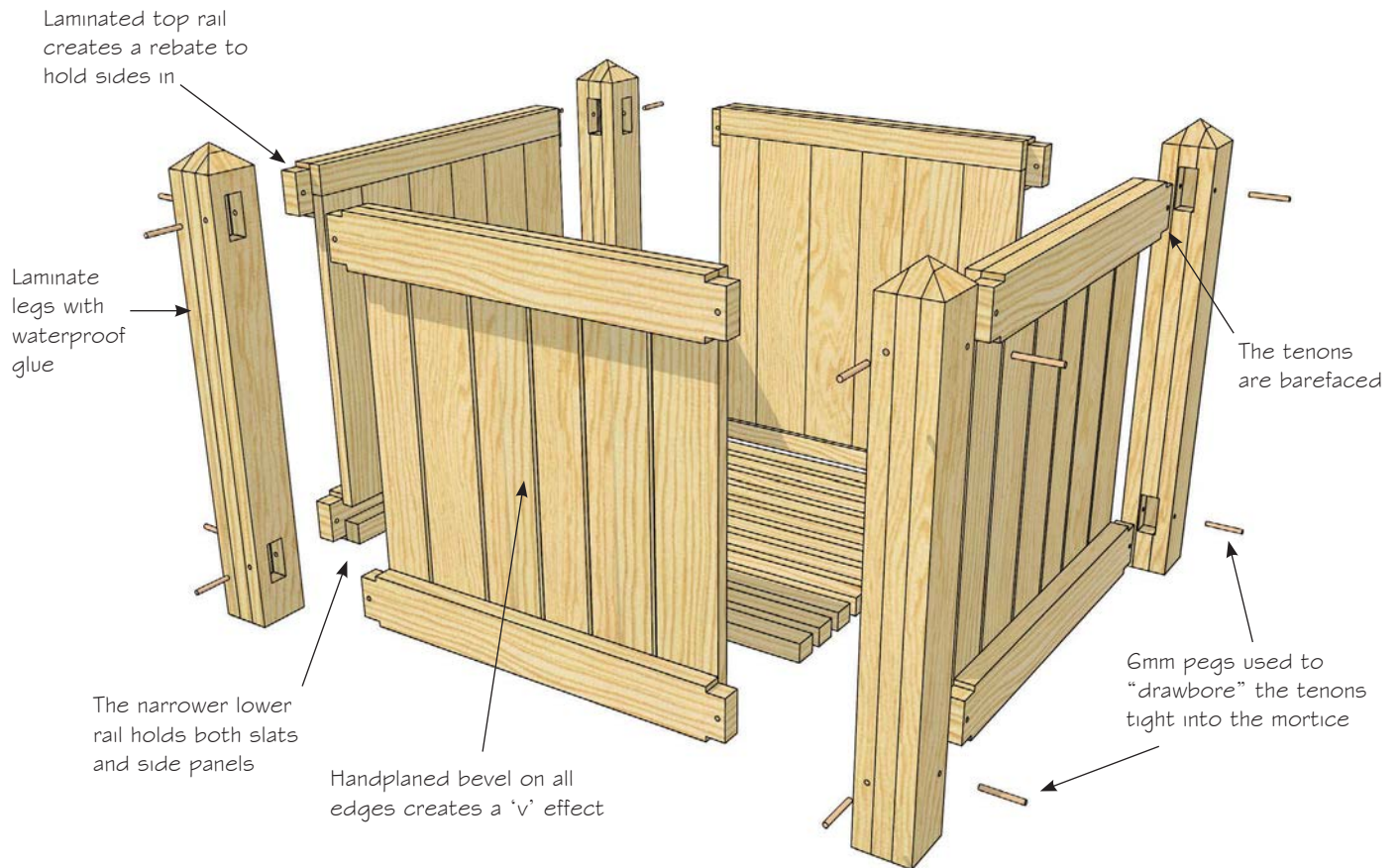
Mark Baker and **Anthony Bailey** use old pallets to create this attractive garden planter

The garden is one area where we can spend a lot of time trying to create the perfect relaxing atmosphere for that quiet time that we so deserve after a long day doing whatever comes our way.

Well, if you have a day to spare and want to create an ideal garden planter that will cost you nothing but some paint, a few screws and a bit of elbow work and give this project a try?

Cutting list

legs	12	630 x 70 x (ex)25
Top/bottom rails	8	540 x 70 x 25
Vertical board to fit 2 sides		460 x 490 x 25
Vertical board to fit 2 sides		435 x 490 x 25
Top fixing batten	2	490 x 40 x 17
Bottom fixing batten	2	490 x 30 x 25
Bottom slats	1	540 x 30 x 25



Finding the pallets



Step one is to locate some pallets. These can be obtained from companies who have deliveries. Many have to pay to dispose of the pallets so we were surprised when we asked that the answer was yes you can have as many as you want. The pallets come in both hardwood and softwood versions, We have used softwood pallets for this project and took six in all. We have used the wood as supplied and will leave the 'sawn' effect from the salvaged boards from the pallet to create a rustic texture on the planter.

Take apart the pallets. To save time, using a circular saw, we cut the boards through the ends of the pallets on the inside face of the end blocks then the rest could be taken apart with a claw hammer and block to leave the long middle sections intact. The board thicknesses may vary a few millimetres but do not worry about this, this small discrepancy will not show.

MAKING THE CORNER UPRIGHTS

1 Four corner uprights are required and since we are working with boards, the best way to create the uprights is to laminate them.

Take three boards and cut them length 630mm and 70mm width, the reason for 70mm is that the boards are each about 23.6 mm thick so once the three boards were placed together this made a square(ish) upright. Since we need to laminate them, plane the meeting faces to ensure a good fit and glue (using waterproof glue).

2 Clamp them together, then screw them together – a failsafe device should the glue fail.

3 I wanted a classical appearance so decided to mark and cut a traditional point on the top of the uprights. Mark 25mm down from the end and square this line around. Then mark the centre of the upright on the top and draw a line to meet the side marking to the centre. This will create the point, then cut it by hand or on a bandsaw.

4 Once cut, take the sharp corners off each upright with a plane.



1



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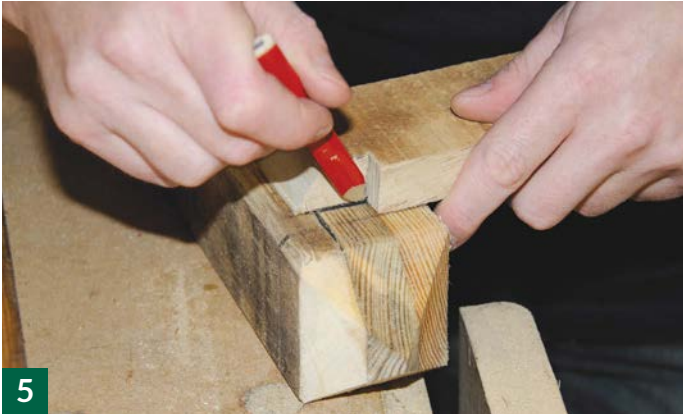


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4

CROSS RAILS



5 Now take 8 boards and cut them to 560mm length and 70mm width. These will form the top and bottom rails. At each end mark a bare-faced shouldered tenon. The shoulders are 13mm deep and the tenon is 35mm long. The shoulders will ensure a nice clean fit against the uprights. The end of the tenon needs to be mitred so it fits nicely against the other cross rail which will meet it in the middle of the upright.

6 Once all the tenons are cut you need to mark the uprights for the positions of the mortises – the holes in which the tenons fit. Measure 38mm down from the bottom shoulder of the point you have just cut, then lay the tenon up against this mark and mark the width of the tenon on the upright. This will be the mortise hole size to be cut. The shoulders on the tenon are 13mm so when the mortise is cut and all is clamped tight, the top of the rail will sit 25mm below the shoulder of the point on the top of the upright.

7 Continue this on the other four uprights until all 8 mortise hole positions have been marked for the top rails. Now measure 63mm from the bottom of the uprights and mark the mortise positions as before for the bottom rails. This will mean that the bottom of the rail will sit 50mm off the floor. Note since this is a board, it is the same width as the middle lamination of the upright.

Now cut the mortises and dry fit and clamp all the components together.

8 Once happy that everything fits and is square, glue and clamp all the side rails and uprights together. Drill a 6mm hole in the side of the upright to pass straight through the tenon and insert a 6mm dowel. This will act as a locking device should the glue fail. ➤



INSIDE FACE OF THE RAILS & BOTTOM

9 The next step is to cut and screw four lengths of timber 30mm x 30mm or so square x 490mm long around the bottom edge of the lower rails so the bottom of the wood is flush with the bottom edge of the lower rails. We found a pallet with a thicker board size in it – but 23mm square is fine. Cut four pieces 490mm long x 40mm deep and 23 mm thick (or thickness of board) and screw these to the top rails so that the top of these pieces are flush with the top edge of the rails. Then cut 11 strips of wood about 30mm x 30mm, or whatever the square is of the pallet boards you are using, and screw these equidistantly along the bottom of the planter.



SIDES

10 Now measure and fit the panels in the sides. These boards are full pallet width sizes and vary in width somewhat; just measure them out and cut what is necessary to make the boards fit. Once cut to size, screw them in place. Note the boards are supported so that if you fill the planter with earth (a membrane will have to be placed on the bottom to prevent the soil from falling through the slats) the pressure will not force the boards off the face of the planter. Everything is supported behind the rails.

FINISHING

11 All that remains is to treat the planter with a preservative, let it dry and paint with an exterior fence or panel paint of your choice. I suppose you could undercoat it and apply a top coat of your choice if you desire, but I chose a panel paint which contrasts well with the cordyline planted in it and the stones on which it was to sit. There you have it; a planter in a day and one that cost about £5 to make. ■



Meet the contributors...

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



Louise Biggs

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

Web: www.anthemion-furniture.co.uk



Paul Adamson

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

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

Web: www.pauladamsoncraft.co.uk



Andrew Potocnik

Andrew sees inspiration around him every day. He 'arrived' on the Australian woodworking scene in 1983 and since then his work has developed into areas of sculpture, furniture-making and the odd bit of cabinet work.

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Simon Rodway

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

Web: www.linemine.com/courses



Alex Burnett

Joining the army at 16, Alex became a Yeoman of the Guard, completing 25 years on the active list. He was presented with the Royal Victorian Medal by Her Majesty the Queen for his duties with

the Yeomen of the Guard. He joined the Defence Courier Service after leaving the army, and he has refurbished a cottage in Cornwall and completed a woodworking course.



Michael T Collins

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

Web: www.sawdustandwoodchips.com



Nigel Neill

Nigel lives in Northern Ireland. He has an NVQ level 3 in Wood Occupations and has been a site joiner for 16 years. He runs his own business, mainly undertaking second-fix joinery and other aspects of the trade. He has experience of coach building

and light engineering work and in his free time enjoys undertaking projects ranging from scroll work to bespoke furnishings.



Gary Marshall

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

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

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Guest Feature for 2018
Emmet Kane
Mastercraftsman from Ireland



Using a peeling jig amid freshly felled sweet chestnut coppice

Woven panel

Accomplished woodsman **Ben Law** shows you how to get weaving

The woven panel makes a good alternative to hurdles if the twisting of fibres is too much for your wrists, you have poor-quality hazel, different species available or they just seem too complex. I have been making these, either as individual panels or for large areas of fencing, for a number of years. I have made them using hazel that is too poor to twist and from young sweet chestnut that does not twist and return on itself. In fact, any material can be used provided it is supple enough to weave. Think about the durability of the material and whether to use cleft older rods or younger rods in the round. ►



Materials you will need

- 1 plank: 6in (150mm) wide x 2in (50mm) thick (the length of this plank will determine the width of the woven panel)
- 2 upright frame poles: 4ft 6in (1.37m) long x 4in (100mm) diameter. This length will give you a 4ft (1.2m)-high panel. Choose longer poles if you want a taller panel.
- 1 pole to be cleaved for the top and bottom rail: 4ft (1.2m) long x 4in (100mm) diameter (choose a longer pole if you want to make a wider panel)
- 48 cleft rods for weaving: 4ft 6in (1.37m) long x 1¼in (31mm) diameter (this is enough for a 4ft/1.2m-high panel – allow 12 cleft rods per 1ft/30cm of height)
- 5 poles for the zales (uprights): 4ft 6in (1.37m) long x 1¼in (31mm) diameter

Recommended tools

- Cordless drill
- 1in (25mm) auger bit
- 5/32in (4mm) drill bit
- 4in (100mm) nails
- 2½in (63mm) nails
- 1in (25mm) chisel
- Maul, froe, cleaving brake, cleaving adze, billhook, loppers, bowsaw, side axe

Making the frame

Use a plank as a temporary support to keep the posts upright by screwing the posts to the end grain of the plank. The length of the plank will determine the width of the hurdle. In this example the plank is 4ft (1.2m). Cleave the top and bottom rail into two pieces using a froe and cleaving brake. Pilot-drill the top rail and then nail it (using the 4in/100mm nails) into the top (end grain) of the posts, ensuring the distance between the posts is 4ft (1.2m) once it is fixed on.

Insert the bottom rail into the posts by creating a tongue on each end of the rail and a chiselled slot in the posts. I use a 1in (25mm) chisel and lay it over the end grain of the cleft bottom rail then mark each edge of the chisel with a pencil so that two parallel lines 1in (25mm) apart are clearly visible on the end grain of the cleft rail. Use the same chisel to mark two parallel lines on the post.

Saw the lines on the post with a bowsaw and then chisel out to leave a slot. Offer the lines on the end grain of the cleft rail up to the slot to determine the length of the tongue. Once decided, make cuts with the bowsaw at a right angle to the pencil lines and use the chisel to take out the waste and leave the tongue. Pilot-drill the tongues and skew



Cleaving chestnut using a froe

nail them to the posts. Skew nailing means driving in the nails at an angle rather than straight to avoid them pulling out. Two nails are often used at opposing angles. Be careful not to cut too deep into the posts when making the slot as this could weaken the panel.



The tongue ready to insert into the slot



The tongue inserted



The assembled frame

Inserting the zales

Fix the two end zales by pilot drilling and then nailing to the centre of the posts using the 2½in (62.5mm) nails. The number of zales inserted to weave around will depend upon the length of the panel and the flexibility of the weaving material used. In this project I am putting in three intermediate zales and the holes for them will be 1ft (30cm) apart. I use a 1in (25mm) auger bit. I drill the holes into the top and bottom rails about 1in (25mm) deep. The zales can be shaved down at the ends with a side axe to approximately 1in (25mm) or else a rounding plane can be used for an exact fit.

The zales are then inserted into the hole in the bottom rail and bent so that they fit into the top hole. If the zale has been cut to the correct length, any bending should have straightened out.



Drilling out holes for the zales using a cordless drill and a 1in (25mm) bit



Hole drilled for a zale in the bottom rail



The weave on its way up

Weaving the panel

Now begin the weave. Take your cleft rods and weave in and out of the zales, trimming any surplus that overlaps the end zale with loppers.

Alternate the weave each time as this will tension the rods against the zales. Leave yourself a few thinner rods for the top of the panel as these are the hardest to weave in. ➤



The panel three-quarters finished



A completed woven panel



Assembling the panels

When constructing a long line of panels for use as a garden fence, it is easier to dig the posts into the ground (use a durable species) and then fix the top rail halfway across the top of the post so that the panels link up as one continuous fence. It is also possible to vary the weave and put in extra rails to create a panel of your choice.

Panels with posts dug into the ground, forming a continuous fence. The posts and the cleft rods are all sweet chestnut



Panels made with an extra rail and a criss-cross pattern top. The frames and rails are peeled sweet chestnut, the cleft rods are hazel

Extract from:

Woodland Craft

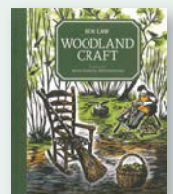
By Ben Law

Ben takes us on a rapid journey through a whole variety of woodland crafts and activities.

A directory of homegrown trees describes them in detail and he discusses woodland management and resources. From then we can study crafts for home and garden, wood fuel, crafts for building, domestic crafts and tools and devices for carrying out woodland crafts.

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Making a small stepladder

Michael T Collins

ascends the giddy heights of ladder-making with his latest handy project

Step change

In 1862, John Basely invented the stepladder by putting a hinge at the top of two ladders so that they could be folded and easily stored. Born in Pennsylvania, Basely was a master carpenter and inventor, receiving the first US patent issued for a safety stepladder. Ladders had, of course, been used for millennia prior to his invention, but the changes Basely made to the design were hugely important, including the addition of hinges and using flat steps instead of rungs for safety. As you can imagine, he went on to become a very wealthy man.

Reach for the shelves

This article will not make you wealthy, but it will give you a lift in life and an insight into the mechanics of making a stepladder. I have at least four stepladders, ranging in height from 1-2m. Often, when reaching heights for a project, a few extra centimetres make all the difference in getting to those hard-to-reach areas. Stepladders, with their large, sure-footed steps, are one of the most useful tools you can ever add to your workshop, thanks to their safe and secure functionality. This article will simply outline the process I used and, by following along, you should be able to adapt the construction to suit your own needs.

So let's step straight into work and prepare the wood.

I have a nice selection of straight-grain, rough-sawn lumber, which would work perfectly for this project. But the piece I want to use for this particular job has a slight cup and twist to its length that will need removing before I can progress with the ladder. These flaws are easy to remove –

Safety note

Michael has built a traditional pattern of short stepladder. It is not recommended that you alter the design to increase the number of steps for safety reasons.

all that's required is a methodical approach and lots of elbow grease.

Flattening a warped board

1 If you want to skip this section, then simply buy a couple of construction boards.

Start by roughly cutting the pieces to length. This serves many purposes – it breaks the wood up into smaller twisted pieces that require less work and it will generally preserve more wood on really twisted boards.

2 Snap a chalk line along the length of the boards so any bowing is cleared. Then, paying attention to the grain direction, bring the edge down to this line with a jointer plane. I keep a block of bees wax handy – it's amazing how easily a heavy plane slides across the wood when wax is applied to the sole and friction is reduced.

3 Once planed, mark it with a cabinetmaker's mark – this will be the face edge. If the board is cupped, place it so the convex side is uppermost, it is more stable this way. If the board rocks, place small wedges underneath to keep it steady. Next, using a shoulder or combination plane, flatten a 12mm section at both ends of the board to a depth that just clears the cup and at right angles to the planed face edge.

4 Sight down the board with a pair of shop-made winding sticks – a winding stick will exaggerate any twist in the board. If the winding stick 'marker' at the far end is occluded, adjust the rebate until you have the winding stick parallel. This picture shows the slight twist in my piece of board.

5 Now, snap a chalk line the length of the board on the edge, from one rebate to the other. Repeat this on the other edge. Plane each rebate slightly lower if the snap line does not lie within the board's entire length. Next, start at the planed edge and use a scrub or jack plane (with an aggressive iron 10in radius), to bring the surface down to the snap lines. Make sure you work diagonally across the board. It's a good idea to chamfer the exit side of the board so that tear-out is minimised, especially with a scrub plane that takes big bites. Check for flatness by using the edge of the sole of the plane. Finally, end with a jointer, planing

Tools and supplies

- Ripsaw, tenon saw
- Jack, jointer, router and block planes
- Marking gauge
- Assorted drill bits
- Bevel gauge
- Selection of chisels
- Spokeshave
- 2 x 5mm x 50mm carriage bolts, nuts and washers
- 2 x roofing bolts, nuts and washers



1



2



3



4



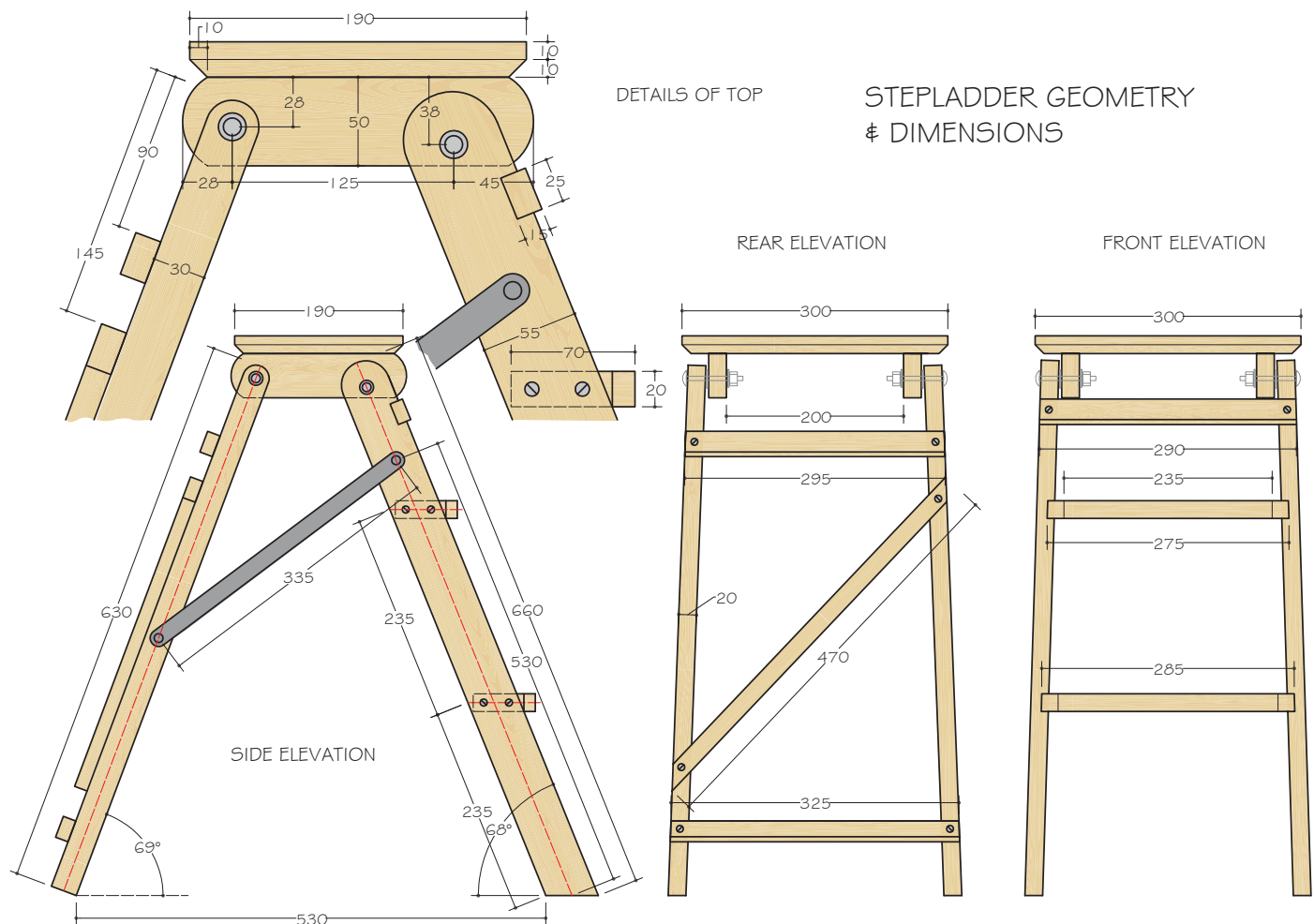
5

This is a first for me – I have never made a stepladder before, but in the immortal words of my daughter, Meredith: 'How hard can it be...?'

down the length of the board. The jointer will bring the scalloped ridges down with each successive pass. Stop once the plane is taking continuous shavings. Mark this as the face side.

From the newly planed face side, use a marking gauge and deeply mark the thickness of the wood on all edges. Repeat the planing regime on the opposite face. The gauge line will act as

a stop and 'feathering' will be revealed as you plane down to it. A pencil line would be easily missed. Check for squareness. Finally, gauge the width of the board from the marked face edge using a combination square, or marking gauge, and plane down to this line. You should now have boards that are uniformly thick and square and you will have had quite a workout. ➤



Ripping the parts

6 Lay out all the parts on the prepared boards, avoiding any knots and other defects – not good in a ladder. With a marking gauge, mark out all the widths of the parts.

7 Starting with the step supports, straight-grained and 60mm wide, roughly rip to size. It is always best to cut matching parts from the same area of the board. Plane down each part to the gauge lines.

8 As this was my first time making a pair of steps, I made a 1/8th scale model – this afforded me the opportunity to look at angles and also meant I could position the support bars in the correct location. If you change the height of your ladder and want the steps to close, you will need to find the support bars' attachment locations.

Making the step housing or dado

9 Set the bevel gauge to 68° and mark the location of the centre of each step. Don't forget to include the top and top supports in the overall height,



as per the diagram. Strike a knife line on one side of the step, then place the step on the line and mark the width of the step housing. This method will ensure that the joint is tight.

10 Mark the position of the second step and repeat the process. Use the first step support to lay out the position on the other support. I am a firm proponent of taking measurements from the actual piece rather than measuring. With the marking gauge, measure down 8mm and mark the depth on the edge of the board. This is the base of the housing.

11 Deeply score the lines and then, with a chisel or marking knife, remove a V-notch on the waste side. Do this on each line.

12 Now, with a crosscut saw resting in the V-notch, saw down to the baseline. Take your time and frequently check the exit side so that you don't cut too deep.

Note: a simple tip to keep the saw perpendicular is to look at the reflection in the saw blade – the wood and its reflection should be coplanar.

13 Remove the waste with a chisel. Work from both sides to avoid breakout.

14 Now mark and saw off the foot angles. These must match the angle of the steps.

15 Finally, lay out the rounded end with a compass and saw off most of the waste before cleaning up the end with a block plane.

The top

16 The top is made from a single board, 300mm x 190mm, with grain oriented parallel to the longest edge. Edges have a 10mm chamfer that takes the dimensions to 280mm x 170mm.

17 Housings for the leg supports are cut into the underside of the top and are positioned the width of the step support from the chamfer. ➤



18 Remove the waste in the same way as for the step housings. I used a small router plane to speed up the removal.

Assemble the steps

19 Measure and cut the steps to width. The width is the length of the step housing plus 12-15mm that protrudes at the front.

20 Add a small thumbnail profile.

21 Dry-fit the steps with screws, drill pilot holes and countersink. The step supports are angled out. Note the angle of the back supports is different to the front angle. Position the holes in the top of the step supports and the back supports, as per the diagram. Drill all the holes. All the pivot points are held together with 50mm x 5mm-diameter carriage bolts with a washer placed between the wood surfaces and the nut to lessen wear. I used two bolts to hold the metal support measuring 40mm x 6mm, locking all the nuts with thread-lock. Locknuts would work too.

Tip: If you need to cut bolts to length, thread a nut on to the bolt prior to sawing. This way, any roughness in the thread is sorted by removing the nut.

22 Install what I call the 'splay stops' – a bar that rests up against the underside of the top support when the steps are opened and stops the front legs sliding out.

23 Mark the location of the splay stop on the leading edge of the step supports. Pair the step supports and remove the waste.

Finishing up

24 I have always eased sharp edges with a couple of passes of a block plane, but I recently discovered a simple technique which involves rubbing the edges with a burnisher. This works perfectly well on softwoods, but I'll stick to my block plane for hardwoods. Reassemble all the parts and glue and screw them all together. Secure the back supports in place.

You can leave the steps natural or, if you prefer, finish with a couple of coats of stain. And there you have it, a small, sturdy stepladder that will provide years of use and raise your woodworking skills to greater heights. ■



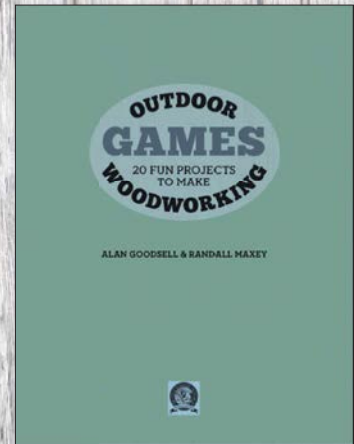
BOOK REVIEWS

The **Editor** was in the garden looking all forlorn – we just knew these two books would suit him down to the ground

Outdoor Woodworking Games – 20 Fun Projects To Make

By Alan Goodsell & Randall Maxey

Now is definitely the time to be thinking about using your garden and one option is play, in the form of outdoor games – always fun to do with family and friends. Some of the projects in this book are outsize versions of table-top games such as lawn chess, others are old favourites, croquet for example, and games that are new to me such as cornhole, tumbling timbers, join four up and ladder toss. Games of skill and even strategy feature in this book with plenty of clear, instructive photographs to show you how to make and play the games, along with drawings to guide you. None of them involve expensive materials and all are achievable with some standard workshop tools. Noughts and crosses or a duck shoot anyone?



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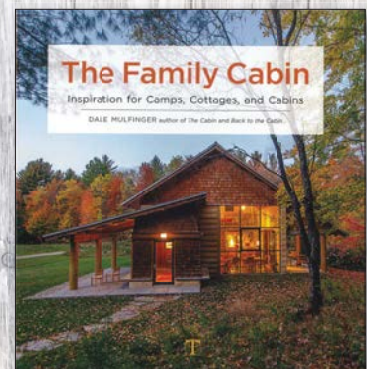
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The Family Cabin – Inspiration for Camps, Cottages, and Cabins

By Dale Mulfinger

Originating in the US, as you might have guessed, I suspect that even for many Americans this book will represent something beyond their grasp – a 'dreamspiration' book, if you will. From the smell of the print to the glorious pine-wooded vistas on far shores and mountain eyrie, from shore to shingles to pine clad interiors, these hideaways and retreats, both traditional and contemporary, seduce the reader with their warmth and homeliness to suit all tastes and needs. Homes that keep growing, a view for everyone, enjoying nature's bounty, fun and functional, concrete thermal walls, prefab cabin and off-grid. Whatever you are pining for, this is a great coffee-table book that brings out the Davy Crockett in all of us.



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NEWS & EVENTS

All the latest events and news from the world of woodworking

Retreat of the permafrost

Understanding a surge (but less than predicted) in methane gas in the atmosphere since 2006.

By **Gary Marshall**

Methane CH₄ is a greenhouse gas which is 20-25 times more effective at warming our atmosphere than CO₂ (some say nearly 30 times over a century timescale). While still only a trace gas in our atmosphere, levels of methane recorded since 2006 have risen alarmingly, but not as much as some figures would suggest... read on.

Sources show that methane occurs naturally mainly from tropical wetlands – about 80% of natural emissions. Also, maybe surprisingly for some of our readers, 9% of natural emissions emanate from termites. However, it's thought that man-made or man-influenced emissions are most likely to have given rise to the increase. CH₄ from natural sources contributes about 44% of total emissions. Man-made



A cemetery slowly sinking into the permafrost in Alaska



Permafrost in Greenland

sources (such as fossil fuel energy production, methane from farmed ruminants and rice production) have grown to around 56%.

Scientists such as Dr John Worden from the US space agency's Jet Propulsion Laboratory in Pasadena, California, and colleagues, have been doing some hard sums trying to see why the increase has happened. They're doing this because when all the known sources of methane emissions are added together, the result is far more than the actual current levels.

As the levels of methane increase, so does the average atmospheric temperature of the Earth. There are other possible 'nasties' awaiting us round the corner. As the globe heats, so permafrost retreats. In the formerly deep-frozen areas of Siberia and Canada, bubbles of methane are emitted from recently released rotting organic material-lined lakes. Should these methane-rich lakes merge and permafrost retreat increase, mega-emissions have been predicted by some researchers. Already some areas of permafrost resemble 'Swiss cheese', as Bob Berwyn from Inside Climate News reported in July last year. These areas are methane 'hot-spots'. Such emissions are considered geological releases – rather than man-made – but,



Bare patches of permafrost surrounded by withered grass

of course, if our activities are warming the Earth, I'd say that was man-made.

It is known, again from global monitoring, that numbers of wildfires have decreased as the amount of land under agricultural use has increased. Even taking into account the 12% decrease in wildfires since 2006, the actual recorded data shows less methane in the atmosphere than many estimates predict. I don't pretend to understand the figures, but whatever they are – and whether or not they reconcile – is of less concern to me than the complex computer models that suggest methane's growth rate is 'close to a path that would take the world into a very challenging future'.

PHOTOGRAPHS COURTESY OF SHUTTERSTOCK

Web links for you

Facebook

woodworkingideas1

More amazing woody inspiration. I particularly like the carvings made from weatherbeaten branches and posts with beautifully executed other-worldly faces by Michel Lajeunesse. Also bulging circular grid shelves that create a big impression in a room.



Twitter

Lee Jenkins @Firebird422

Click on Lee's gallery squares to see his slightly folk or naïve interpretations of bird carvings. Not for him the intensely tricky, fine-carved feather detail – instead it is all done with paintwork. Add a block of weatherbeaten wood to sit a bird on and you have some lovely clean-lined sculptures.



EVENTS

The Midlands Woodworking & Powertool Show, Notts. 22-24 March 2018, Newark Showground.
www.nelton.co.uk/midlands-woodworking-power-tool-show.html

Yandles Woodworking Show, 13-14 April 2018, Martock, Somerset.
www.yandles.co.uk

Weald of Kent Handmade Fair, 29 April-1 May 2018, Penshurst Place, Tonbridge, Kent. A fun family day out with lots of craft stalls, music, food and drink, held in the striking landscape of Penshurst Place. RHS and English Heritage cardholders get free entry
www.thecraftshows.co.uk/kent/spring

Nunhead Cemetery Open Day, 19 May 2018, Nunhead Cemetery, Linden Grove, London, SE15 3LP – walks, talks, choir, food and drink and bodgers among the trees...
www.fonc.org.uk/2018-open-day.html

Vimeo

Woodworking: <https://vimeo.com/43846942>

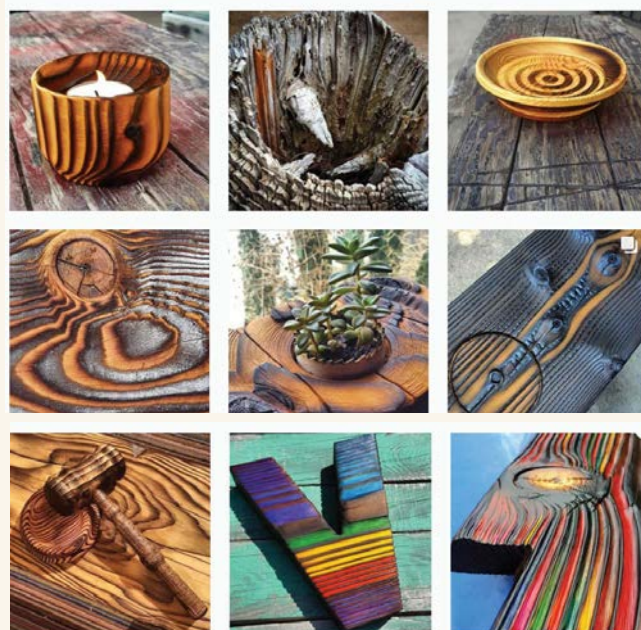
A clip of a Vietnamese woodcarver creating a beautiful pierced panel using a coping saw and carving gouges. Judging by all the finished examples hanging up in the background, these are all to sell to tourists.



Instagram

bigreds_og_woodgrainreveal

Phew what a scorcher! This guy's speciality is scorching wood to emphasise and reveal the pattern in the grain and then add colour in many cases to produce some amazing results. I'll never look at a piece of grainy pine in the same way again...



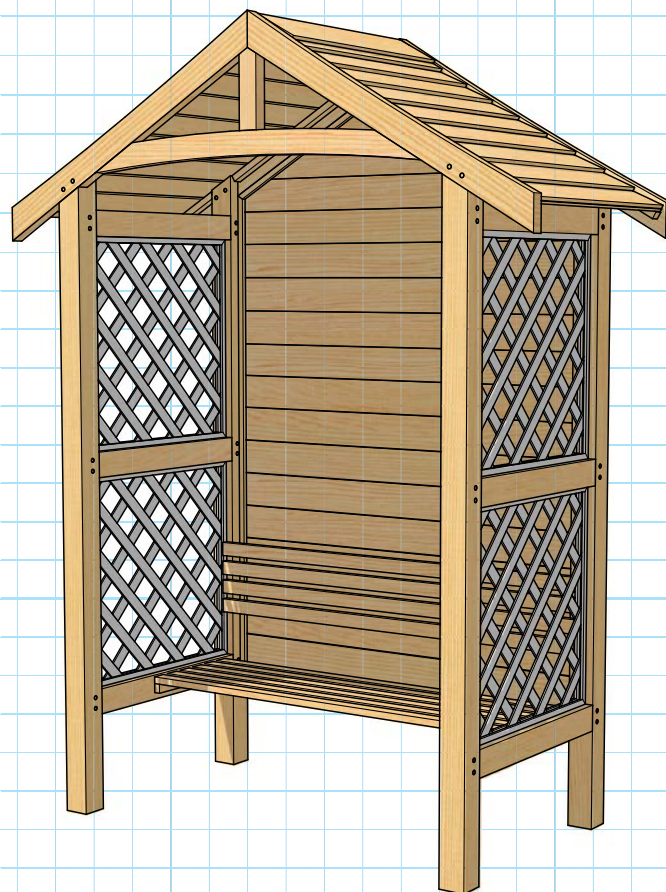
PLANS 4 YOU

Garden seat

Simon Rodway finds time to relax in an English country garden

Cutting list

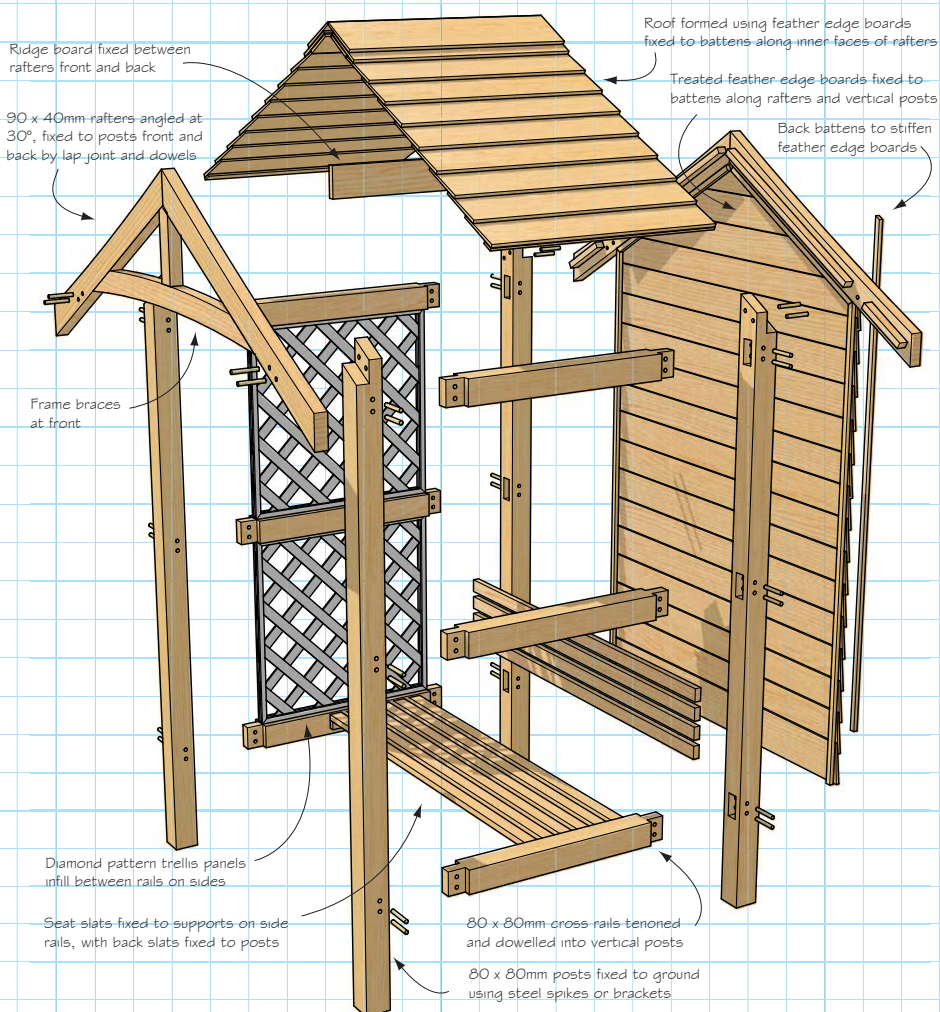
Posts	4	@	2020 X 80 X 80
Rafters	4	@	1125 X 90 X 40
Side rails	6	@	790 X 80 X 80
Ridge board	1	@	750 X 100 X 22
Horizontal brace	1	@	Ex 1165 X 100 X 40
Vertical brace	1	@	235 X 60 X 40
Seat slats	6	@	300 X 44 X 22
Back slats	4	@	1350 X 44 X 22
Seat slat supports	2	@	370 X 44 X 22
Roof covering	22	@	750 X 150 X 12
Back panel	18	@	1300 X 150 X 12

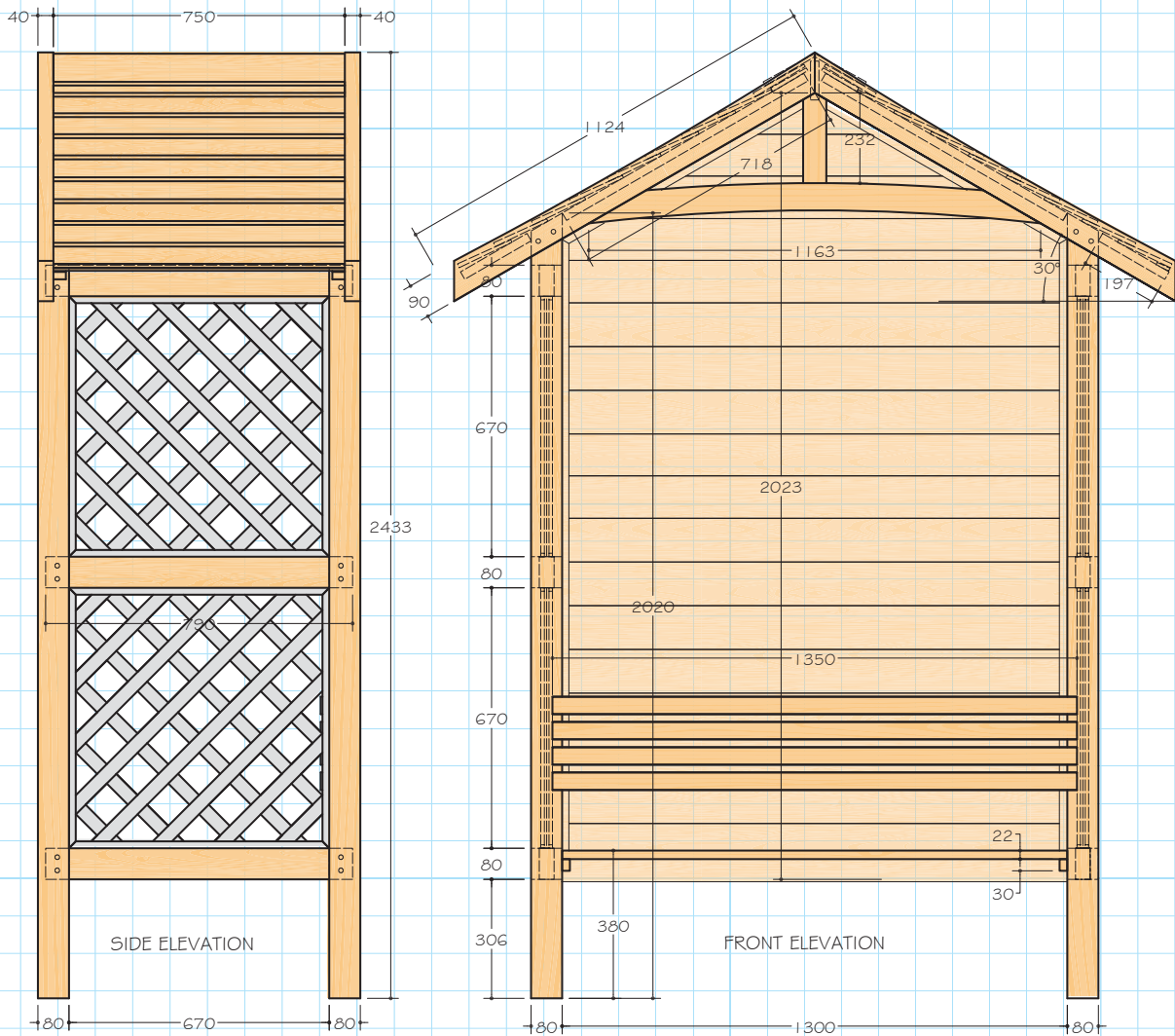


Number of feather edge boards required will depend on board widths and lap chosen for roof and back. Battens for fixing roof and back to suit. Trellis side panels of your choice, to be sourced at outset of job.

Given the variability of our weather, a semi-enclosed and covered seating area for the garden doesn't just seem like a nice idea, but an essential way to enjoy the seasons in comfort. Like most garden structures, there is a wide variety of design types for garden seats, from panelled Victorian classics to rustic or modern versions, and I've chosen something that can be adapted to reflect one or more of these. However, it is intended to have a subtle Japanese flavour from the outset, something that could easily be emphasised by adding a few more suitable details to the roof and rafters.

The frame is made from available treated sections from a supplier such as Wickes, with four vertical posts mounted in steel support spikes or brackets fixed to the ground. Having had some fence posts which are only five years old rot through and fall over recently, I would always choose this type of fixing method over directly into concrete, but the steel





fixings may need to be disguised, either by boxing in to create a foot, or by just growing a few plants around the base of each.

The side rails are joined to the posts using dowelled mortise and tenon joints, and the rafters are also joined to the posts at the top with dowels and an angled lap joint.

The rafters have a shallow curve formed along the top edges (maybe use a simple template for this to get consistent results), and a couple of bracing pieces are fixed to the front pair to add rigidity and visual interest. A quick look online will suggest all kinds of variations if you want to carry the eastern theme a bit further. A simple ridge board is fixed between the joints of the two pairs of rafters to add rigidity to the roof front to back.

The side panels are simple diagonal

pattern trellis fixed between the rails and posts, and it is always a good idea to source these panels at the outset so that you can fit the side opening dimensions to them, rather than the other way round.

To keep the cost down and for maximum practicality, I have gone once again for feather edge boards for the back panel and roof covering, fixed to battens along the inside faces of the rafters for the roof, and to rafters and vertical posts for the back. You can always use an external wood stain if you want to vary colours, but I've found that feather edge is great to work with and fix, comes pre-treated and is a relatively inexpensive way to cover large areas externally without the headaches that the alternatives present. The roof in this case will probably be more showerproof than watertight,

but this is in keeping with the spirit of this kind of seating, in my opinion. You could, of course, add side panels of feather edge below the trellis if you want to make your seat a bit less draughty. The back panel can be made a bit more rigid by adding vertical battens to the back face, depending on the thickness of the feather edge you are using.

The seat itself is a simple assembly of horizontal slats fixed to side supports screwed to the inner faces of the bottom rails for the seat, and directly to the posts for the back. The slats should have a small roundover along the front edges for comfort. Judicious weatherproofing at timely intervals should ensure that your initial investment in work and materials is repaid over many years of seasonal enjoyment. ■



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Forsa 8.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 2600 mm	£5,420.00	£6,504.00
Forsa 9.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer (as illustrated)	NA / 6.5 + 1.0	107 mm x 3200 mm	£5,575.00	£6,690.00

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

Kuksa bench



PHOTOGRAPHS BY PAUL ADAMSON

Following on from the article in the December issue, **Paul Adamson** shows us workholding for kuksa making

This is another simple project to make a holding device for woodworking. This is the type I use with students on courses for carving wooden cups called kuksa. It's basically a chopping block with raised sides so that the workpiece can be wedged in place quickly, after the main carving work on the outside has been completed.

It is relatively quick to make and employs some simple green woodworking techniques in combination with a chainsaw to speed things up.

You can do away with the chainsaw if you are not familiar with these though, and I recommend some training before using one, and some protective equipment.

All the materials are gathered freely from sustainable woodland management works, and these parts were gathered at the same time as harvesting the carving wood required for running courses, as I needed to replace some of the benches I've been using for the past few years. ➤



1 The legs for these benches can be made in two ways – either in the round from coppice poles, or cleft from a larger main stem of a tree. Here you can see how the round stem has been split into rough halves and quarters, ready to be trimmed up with the axe if needs be.

I cut all to a length that sets the bench at around hip height once the bed is cut into it, and the amount of leg tenon is allowed for. It's around 1m.

2 Here are some nice cherry poles. It saves a lot of work, but they will probably slightly split on the ends when dry. It's not really a problem, to be honest.



3 Here is the running split – I start this off by using a heavy wooden baton to force in the axe to the end of the log, aiming for the centre. Then, along the split, wooden wedges can be used to continue its path, taking them out and moving them along until you reach the other end. If the split runs off from the centre, then metal wedges or old axe heads can be used to correct. Froes can also be used but work better for steering the split when working on the quarters and eighths.



4 I use a 32mm hole for the legs to fit into the log, so to get the legs down to this diameter, I first make a gauge by drilling a hole into a scrap piece of wood. Then using a sharp hatchet or axe I trim up the end of the legs along a length of 150mm, roughly round and oversized. You could let the legs season now for several months before finishing to size, if the wood is still green.

shaved area. The legs often get stuck into the bed if not, due to the taper – a pain when trying to transport the bench. Even more so when you have seven of them. You can, of course, use specialist tenon cutters for this part of the process.

5 Then jump on to a shave horse and carve down to size, checking the gauge makes it all the way along the

6 Two sets of legs finished. A set of round poles and a set of split ones.

7 To support the log while drilling the mortise for the legs, I use a ratchet strap and two further heavy logs. The log here is 650mm long by



180mm dia. Using a long auger bit as in the picture with an eye for the handle, or a decent power drill and spade bit, drill the mortise to a depth of 100mm. You have to allow for the legs to splay to make the bench stable in use. Approximately 30° seems to do the trick, both out to the side and the end to the log.

8 All holes drilled. Note how they are offset, so as to reduce weakness in one area. Care is needed to drill the holes at the correct angle.

9 Pop in the legs and stand up the bench, giving the legs a gentle tap to settle the splay. Twisting the legs around slightly may also improve the way the bench sits. If needs be, trim off the legs until it's at the desired height and level.

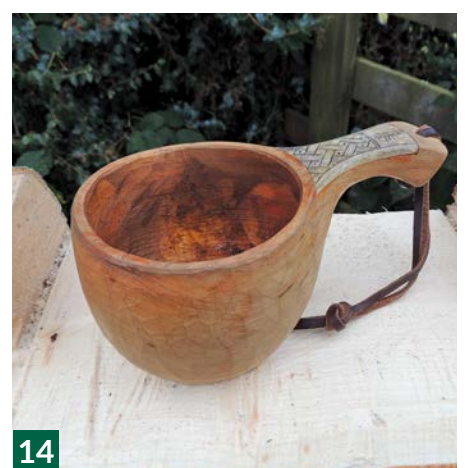
10 I cut out an end section with the chainsaw when felling and converting the tree. A bowsaw and hatchet will also work to split this out. This part is sometimes handy for shaping the sides of cup handles. It's around 100x80mm. The extra locating groove is more for small bowls and useful for shaping the external rim is 50x30mm. This part can simply be created with a gouge and baton.

11 The bed I cut out with the chainsaw also, but unless you are familiar with boring into wood with the tip of your bar, I wouldn't recommend it. Also, unless your saw is sharp it won't want to cut along the grain of the wood. Again, two bowsaw cuts and a hatchet and baton will split this out eventually. The beds of my benches tend to be 260mm long by 70mm deep. It means I'm not using lots of blocks and wedges for the cups I make, but it does limit the products made. Simply increase the bed size as you require.

12 The last couple of jobs I like to do is to remove the corners on one side of the bed, and to create holes for attaching holdfasts to aid carving.

13 All done and ready to go. Dowels, pads and wedges will hold each blank that is worked on.

14 A finished and well-used kuksa – one of many that will be produced on the bench. ■



Hercules propellers

All propellers are definitely not the same, as the **Editor** found when he went for a spin in the Cotswolds

The labours of Hercules

Twelve years ago Rupert Wasey, founder of Hercules Propellers, put together his own replica biplane called a Flitzer, working from drawings. Unfortunately, the propeller simply wasn't capable enough for the plane so Rupert, with his engineering background, embarked on a journey, learning about the design and construction of traditional wooden aircraft propellers and aerodynamics

Hercules Propellers are tucked away on an industrial estate in a steep-sided river valley in Stroud, Gloucestershire, in newly built premises designed to sit comfortably with all the surrounding Cotswold stone buildings. Indeed the whole valley is lined with industrial buildings, many of which date to the manufacture of military uniforms in the 17-18th centuries and later as engineering factories. Apparently the canal is going to be reopened for leisure use, right outside the works, but Rupert seemed quite unfazed by the prospect of a waterside frontage.

from books and manuals. The interest in the subject had died along with their creators, postwar, as the jet age had dawned, but thankfully there was enough written material to learn how to fashion what is the key component of a flying machine with its complex, compound curvature. There is a real science and an art to propeller design and in the past eight years Hercules has built 650 unique propellers that have been delivered to places all over the globe.

All propellers are not the same

Each propeller has to be matched to the plane, the engine and the performance requirements. Then

there's the fact that the engines, and therefore the propellers, do not all rotate in the same direction (the US has got this sorted but not the rest of the world). Vintage blades have protective work-hardened brass leading edges and modern propellers have a hard urethane infill. A propeller can be made for anything from a 30hp light plane up to a 2000hp Merlin Spitfire engine, so the range is potentially huge. There are the finish coatings, of course, which have to be ultra-tough to withstand the stress of pulling an aircraft through the air at speed, the punishment of the elements and gravel and debris sucked up off the ground. All this at what Rupert tells me is the optimum rotational speed of Mach 0.8,



A newly-made vintage style propeller with brass leading edges

PHOTOGRAPH BY GMC/ANTHONY BAILEY



Not all offices have propellers on the wall!

PHOTOGRAPH BY GMC/ANTHONY BAILEY



Even the office furniture has propeller blade handles



A paint finish blade on a Pitts Special aerobatic biplane

PHOTOGRAPHS COURTESY OF HERCULES PROPELLERS EXCEPT WHERE STATED

very nearly the speed of sound – an unsafe place where no propeller must be allowed to spin...

Spin doctor

On the day of my visit, a lady from East Anglia, who was staying with her sister in the Midlands came into the Hercules reception area, filled with its bevy of propeller blades and other aviation artefacts. She was bearing a long bubble-wrapped package containing a blanket-covered propeller which

she had found in the loft at home. It turned out that she and Rupert knew each other well – indeed, the world of private aviation is a small one filled with friends and acquaintances. Her late husband had been a lifelong aviator, and in her retirement she, too, had decided to learn to fly. But the propeller needed changing on her vintage Auster Trainer and this one from a Tiger Moth appeared in good order and would be a good fit. Rupert checked it over and determined that it was completely intact and safe to fly, but the paint job was coming loose, so it was decided to strip it off and refinish with a tough, modern paint system. Interestingly, the rear of a

propeller blade has to be matt black, however fancy the front surface is, because of the risk of glare when the sun is behind the pilot.

While in conversation the woman observed: 'You know, in this country you are never very far from water when you are flying. That's what it is like as an island nation.' Rupert added: 'Most people get in a jet plane to get from A to B and don't enjoy it; we, on the other hand, can fly pretty quickly anywhere in the country – but we choose not to because we enjoy the experience of flying, free as air, no need to rush at all.'

It was a very relaxed tea-break conversation between fellow aviators. Indeed, Rupert then put the aircraft's code into Google so she could see it at various stages in its history before it came into their ownership. It seems propellers and aircraft are very personal possessions. ►

A typically beautiful Hercules propeller



PHOTOGRAPH BY GMC/ANTHONY BAILEY

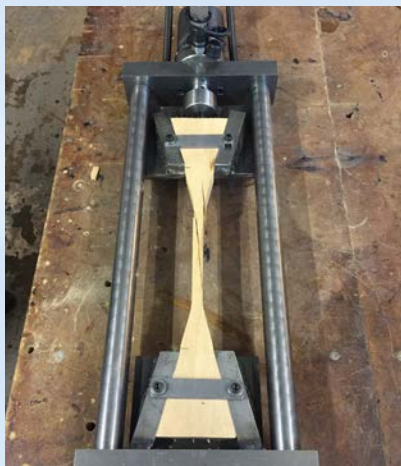


Unwrapping the exciting 'loft find'

'I decided on Hercules as the company name as I was sweeping the path in my garden and saw the name on a cast-iron drain cover – even the typeface is the same'

Testing materials

Hercules Propellers has three different stress-testing machines which are used to check batch samples of timber to ensure they are strong enough for the demands of high-speed rotation and all the forces that could potentially destroy propeller blades. The IZOD machine is designed to test for brittleness; the force registers on a dial, another hydraulically pulls the wood apart and the third applies bending and breaking force. You cannot be too careful in the high-stress flying environment.

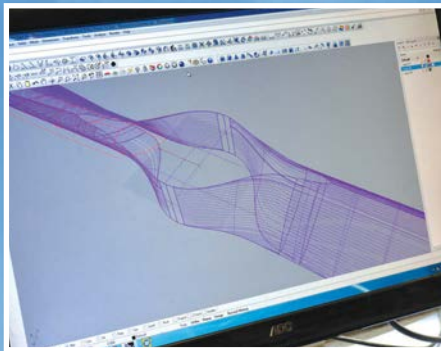


The hydraulic pull test



A CNC machined propeller

PHOTOGRAPH BY GMC/ANTHONY BAILEY



3D modelling of a blade



The machining head at work



A partly machined blade. Note the step cuts at this stage

CAD/CAM

The reason I visited was to see how you make a propeller. In this day and age, hand-making is impractical and massively time consuming. Instead, the dimensions are keyed into a software programme, which Rupert and Jan Carson created, which calculates the dimensions. These are then fed into a 3D CAD programme called Rhinoceros. This allows a built-up picture of the blade which can be viewed from any angle. From this, a tool path for the cutter is then generated. The tool will not only cut the shapes but needs to extract itself so it can go to the next cutting position. The complete

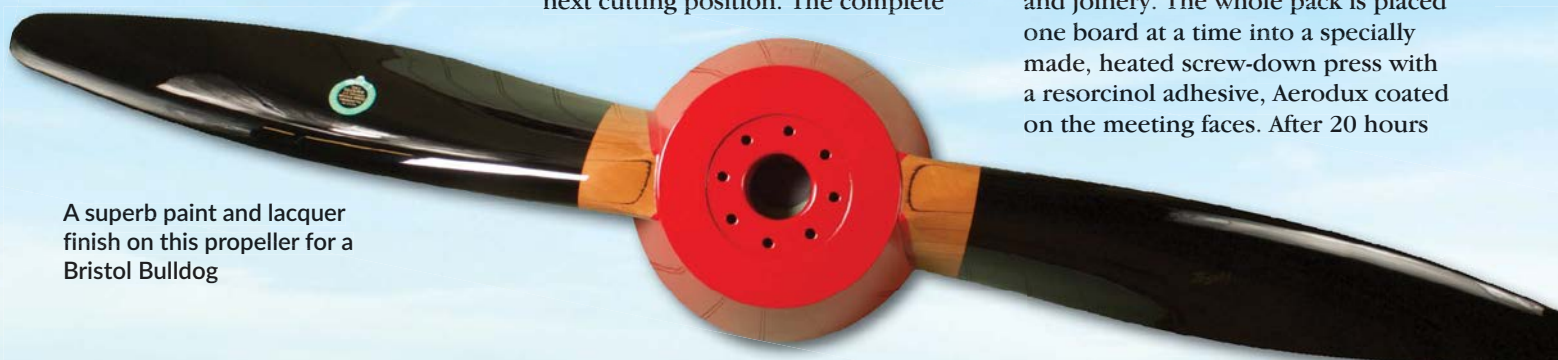
machining sequence is the tool path.

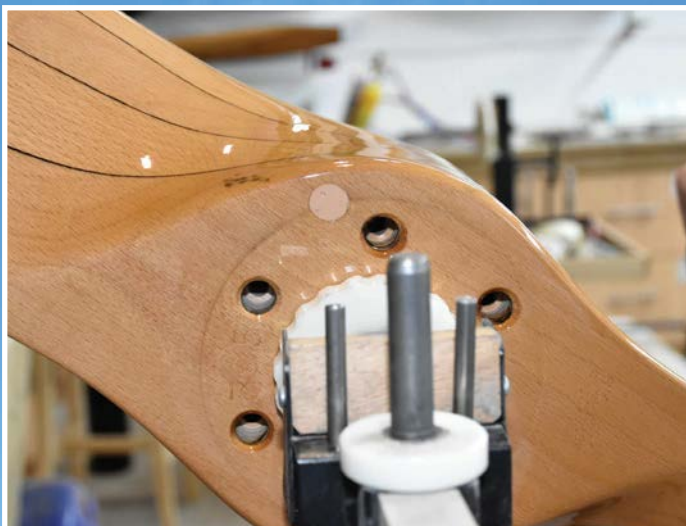
The considerations when creating a blade design are pitch distribution, pitch distance, chord (width), camber ratio and thickness. The blade's length is actually termed 'diameter' as it has to rotate.

To make a propeller

First, planks of kiln-dried beech are cut to length and width on the sawtable. Traditionally, Honduras mahogany was the timber of choice but its use is now restricted. The cut boards are then thickened without overhand planing first as would happen with cabinetwork and joinery. The whole pack is placed one board at a time into a specially made, heated screw-down press with a resorcinol adhesive, Aerodux coated on the meeting faces. After 20 hours

A superb paint and lacquer finish on this propeller for a Bristol Bulldog





Note the light coloured plug where a balancing weight has been installed



A very glossy finish and the unmistakable Hercules logo

the new propeller blank is taken to the CNC rig which Rupert and his engineer father created. It is extra long and narrow without a bed and with special clamps to hold the blank tight. Although Rupert showed me a drawer full of CNC machine tooling, there is one cutter head that normally does almost everything. It had to be made up with an extra-long shaft as it has to go through the cross plate in the middle, which is quite deep. After rough-shaping the same head retraces its steps to fine-machine the shape and then bore the bolt holes for the vital aluminium 'crush plate' which holds the propeller on to the engine drive shaft.

Balancing and finishing

Having created an almost perfect propeller profile, it now needs sanding to a superfine finish using a Mirka sander with inbuilt extraction and fitted with Abranet Ace mesh abrasives from coarse to 500 mesh fine grades. Rupert said: 'It costs more but lasts

at least twice as long, so I call that cheap.' The blade dimensions are then checked to an accuracy of 0.2mm. The finished blade is then mounted on a simple rig to check whether the blades are in balance – and just as you have car tyres balanced with lead weights, so the propeller is drilled in line with the fulcrum and fitted with one or more tiny lead weights, as an out-of-balance propeller would cause vibration.

The Hercules logo is applied before expert spray-coating on the blade. This is done in an enclosed spray room with extraction and filter. It is a four-component clear lacquer which is tinted a brownish colour as beech looks very pale. The finish 'off the gun' is superb.

After that, the tips are often painted a bright contrast colour – white or yellow are common. The masked edges of the paint leave a tiny lip that could cause it to tear off at speed so Darren Varley, the spray expert, feathers all the paint edges down with wet and dry paper until they blend in smoothly. ➤



Rupert demonstrating the balancing jig



Darren removing masking tape from painted tips



A sideline is making laser cut toy kits

The battle For British

A while ago Rupert Wasey bought what remained of a company called Hordern-Richmond – a respected aviation business of yesteryear who once built light aircraft – from Permali who had drawings from a company called Rotol. This was a joint venture between Rolls-Royce and Bristol Aero Engines, created to develop the perfect propeller blades for the WWII Spitfire. Now Rupert has a prize – the original unsullied master drawings of Spitfire blades.

The significance of this is that 80 flyable examples of all marks of Spitfire exist around the world and whenever they need new blades the only choice currently is German-made by Hoffman.

You might infer that this is an uneasy situation and one that will be soon resolved when Hercules brings production of these iconic blades back to Gloucestershire, where they were first made.

In the meantime, the very dense Hydulignum phenolic resin-based laminate is still available and Rupert is cutting through old 'Spit' blades to check the modern equivalent is just as sound.

The waste pieces are being turned into pens and desk sets and sold under the Hordern-Richmond brand. However, balancing a propeller with four variable pitch blades is a challenge compared to the fixed two-blade type, so he has devised a special balance rig so all four blades will match perfectly.



Above and right: Old Spitfire blades which Rupert is using to compare with modern Hydulignum

PHOTOGRAPHS BY GMC/ANTHONY BAILEY



Rupert about to take off in his Flitzer biplane

I came away from the Stroud works much wiser and enthused by what Rupert Wasey and his team have achieved; they really are reaching for the skies... ■

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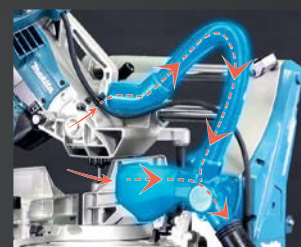
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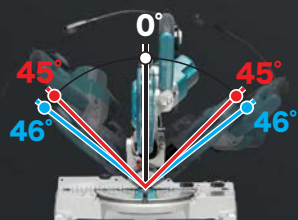
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Max Cut: 46mm x 92mm



Bevels 46 degrees to the left and right



Laser line



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Trees for life – sapele

When we buy a sheet of plywood it's easy to forget that all those laminates represent real trees, especially facing veneers such as sapele...

Sapele (*Entandropbragma cylindricum*) is sometimes referred to both erroneously and with unintended accuracy as 'sapele mahogany', being a far-flung cousin of mahoganies, which this tree frequently stands in for on account of its similarity of appearance. It is most often used as facing veneer for plywood but can also be had in solid form. While its exploitation has helped sate our desire for dark mahogany-type material in furniture and joinery, taking the pressure off the usage of actual mahoganies to a degree, it now finds itself on the 'red list' of tree species as mature examples aren't being replaced at an adequate rate to sustain supply. While not endangered as such, the species is feeling pressure – but then where can you still buy genuine planked English oak in quantity?

The tree

The tree grows up to a height of 45m, exceptionally more. The leaves are deciduous in the dry season, alternately arranged and pinnate (opposite) with five to nine pairs of leaflets each about 10cm long.

The flowers appear when the tree is leafless, each about 5mm in diameter with five yellowish petals. The fruit is a pendulous capsule about 10cm long and 4cm across. It splits open into five segments, scattering 15-20 seeds.



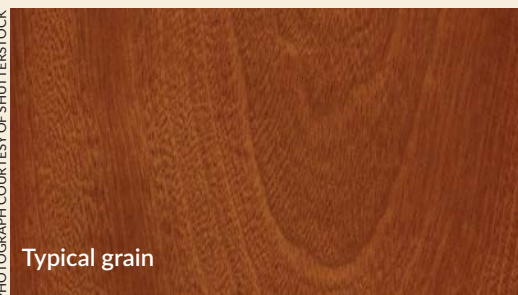
PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS



Above: Sapele tree, Brazzaville, Congo
Right: Seed leaflets

Appearance

Newly cut, the heartwood is pink but darkens to a red-brown or purple-brown on exposure. The sapwood is clearly defined white to pale yellow. The grain is moderately interlocked or wavy with a fine texture. It can exhibit a range of attractive figures – ribbon, beeswing, quartersawn regular stripe, fiddleback, mottled or roe.



Typical grain

Showing the polished grain created when turning



PHOTOGRAPH BY RICHARD FINDLEY

Uses

Because sapele substitutes for mahoganies and has similar characteristics, it is frequently used in similar ways. While it is perfect for standard veneered manufactured boards, depending on the cut and individual tree, it can vary from relatively plain grain to highly figured. It can still be found as facing veneer on doors manufactured in the 1980s and '90s that have cardboard cores. Apart from veneered and solid wood furniture and joinery, it has been used in acoustic and electric guitars, ukuleles and harps and for the Basque txalaparta percussion instrument. It finds uses in boats, flooring and sports goods.

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS



Array mbira musical instrument



PHOTOGRAPH BY GMC/ANTHONY BAILEY

The Editor's own tool cabinet with sapele doors and backboard



Working characteristics

Sapele has medium bending strength, low steam bending properties. It works well with hand and machine tools with a moderate blunting effect on cutting edges. Although it planes and moulds well, the interlocking grain can cause tear-out unless a reduced cutting angle is used. It bores, routs and carves well and accepts nails and screws as well as taking stains, varnishes and paint. It can be glued easily and polished to an excellent finish after surface preparation. It can be dried rapidly but is prone to distortion, although less so in quartersawn stock. It has a moderate tendency to movement in use.



PHOTOGRAPH BY RICHARD FINDLEY

Making a batch of small boxes

Durability

The heartwood is moderately durable and can be attacked by pinhole and marine borers, but is resistant to preservative treatment. The sapwood is vulnerable to the powderpost beetle and moderately resistant to preservative treatment.

Future

This species' status varies from one country to another. Better research is needed but there is limited evidence of certified supplies. It is listed as vulnerable by the International Union for Conservation of Nature (IUCN). If you want to learn more about the current status of living species around the globe visit the Red List website: www.iucnredlist.org

Left: Part of a batch of turned cabinet feet



PHOTOGRAPH BY RICHARD FINDLEY

Peace pole, Kumasi, Ghana



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is more

Tricks *of the* trade...

PHOTOGRAPHS BY GMC/ANTHONY BAILEY



...Avoiding splits

Nailing or screwing wood or MDF can easily result in splitting of the core material – how do you prevent it happening?

There are several different strategies for avoiding the chance of wood splitting when screwing or nailing.

First, modern twinfast wood screws claim to be able to drill their way into the wood, which is true in the crudest sense. They may even be designed to self countersink but, for the neatest, most split-free result, pre-drilling is still necessary, especially when screwing close to the edge of the material as the wood fibres part too easily under pressure.

You may only need to do this in the topmost component – this works for nailing too, if you are fixing two things together.

The second trick is to place a clamp either side of the area being screwed or nailed. The pressure should be enough to keep the wood fibres together

while screwing or nailing without pre-drilling. This also works with the edges of MDF board which can 'puff' very easily when you fix into them.

The third trick with screws is to choose a thinner gauge. It should be noted that not all screws are the same and if you wonder why you can buy cheap ones rather than the more expensive ones side-by-side in the same shop, just hold them together and notice the differences in construction.

The more expensive screws may possibly be had in thinner sizes, but the more complicated design, which includes a plain section designed to bend and unbend under load – a torsion zone – means better strength but less likelihood of splitting. The head recess will also be more resistant to burring over, so it will drive more neatly in a cordless drill. ■



Many modern screws are designed for self-drilling but it doesn't always work. (Top: traditional brass screw, Bottom: modern self-drilling screw)



Nails are notorious for causing splits but clamping prevents this quite easily



Pre-drilling even in rather thin components can avoid splitting



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

SOLDERING *for woodworkers*

‘Live-wire’ Alex Burnett explains how to do workshop soldering without getting your fingers burnt...

Maybe not the average topic for an article to be found in a woodworking magazine but it is a required skill to master for safety and to complete a job which requires some electrical skills. It is also applicable for low-voltage applications such as model railways and audio.

I have been in the electrical side of the business for many years. When I started I spent a good six months simply mastering the skill of soldering. Of course this covered much heavier soldering irons for some quite heavy jobs, but the aim of this article is to show the skill of soldering wires.

Low-voltage joints

A typical type of soldering would be the joining of two wires where lengthening is required. Obviously in an ideal world you would replace the whole length with a single length, but we don't always live there so we have to join up wires – let's make them as safe as possible. Any such join must be correctly and safely insulated and is only suitable for low voltages. Mains voltage must use proper insulated connectors.

Electrical safety

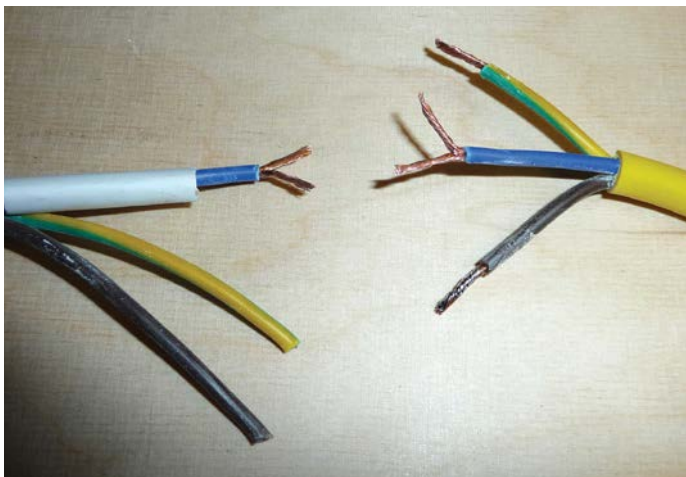
Only attempt wiring work, including soldering, if you are confident you understand what you are doing. It is ALWAYS done with a circuit completely disconnected and dead, i.e. no current present. 240 volts is more than enough to electrocute and kill, three phase 400 volts or devices fitted with capacitors (which store electrical energy) must never, ever be worked on in any way. The advice given here is for simple, straightforward wire repairs only.

Danger

First, always make sure the cable you are about to deal with is disconnected from the mains of any other source of power – 220 volts, 24 volts or 12 volts can all cause unexpected excitement, or even kill you. I used to wear a ring on my little finger. I was disconnecting a battery, the connection to earth was undone so all was well. Unfortunately on the other side of the large generator the ‘other’ 12-volt battery wasn’t, so it went battery terminal – spanner touched the chassis of the generator, ring got red hot in an instant and hurt a lot. I had to have it cut off and I haven’t worn a ring since, so be really careful.

Tinning wire ends

This is done to make it easier to push into a terminal and prevent loose strands sticking out to make spurious contact. Using strippers, remove about 10mm insulation and use your fingers to twist the thin wires together in one core, making a neat shape to solder. Apply heat from the soldering iron. Once it gets hot, dab the wire with the end of the solder until it melts and flows through the wire. Don’t use too much or you will get a lump of solder on the wire. If this happens you can reheat and shake it off. Repeat for each core i.e. live, neutral, earth (some wires lack an earth). A ‘tinned’ (soldered) example is the bottom right lead.



The twisted wire ends

Joining two wires together

Strip 10mm of insulation and divide the core wires in a V-shape with equal core wires in each, shown in the above photo on blue wires. Push the two Vs into each other and twist them in different directions to make a smooth joint. Apply heat and then solder. Slide heat-shrink over joint and heat gently until it shrinks, making a tight insulated cover, or wrap with insulating tape. The two blue wires have been prepared for joining in above photo, with wire-ready heat-shrink tubing placed on one side.

Joining three wires together, determine the routing to be followed by the wires after joining. Strip the wires to about 10-15 mm and divide them into V pairs. Push the two Vs of the wires going in similar direction into the V of the remaining wire, twist together and solder to a smooth joint. Slide heat-shrink over and heat to produce a smooth joint.

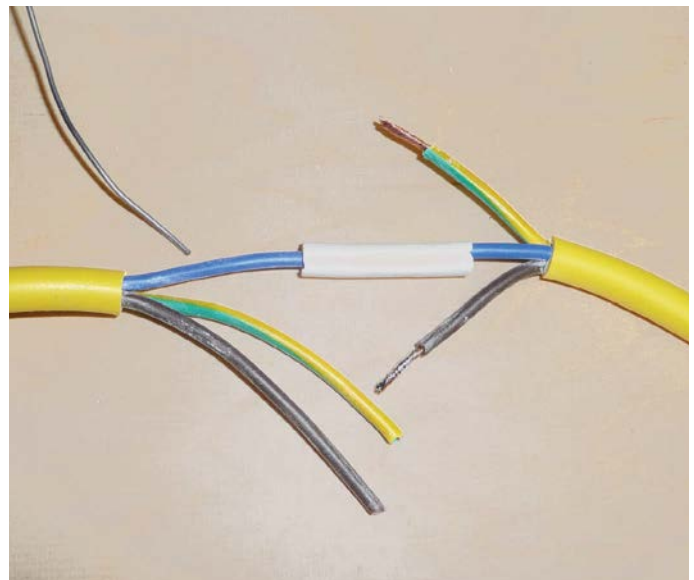
Avoid single spurious wires protruding from a joint – these can pierce the insulation and cause a short circuit. Cut them off or file them away. Larger or heavier wires will require more insulation to be stripped off. Time and experience will



PHOTOGRAPHS BY ALEX BURNETT EXCEPT WHERE OTHERWISE STATED

Tools

Here are the tools I use for soldering. From top left: Stanley knife for scoring insulation; solder and soldering iron with sponge-tip cleaner on a short lead to 3-pin flat plug; heat-shrink tubing, available in different sizes and colours; wire cutters and insulation stripping tool and samples of wire.



Shrink-to-fit sheathing

indicate how much to trim back to make your joint.

When buying wire cutters, close them up and hold them up to the light. If you can see light between the cutting edges, don’t buy them. Also, buy with good insulation over the handles.

All the parts and tools you need can be found at CPC.co.uk, **Screwfix Direct** or other good tool outlets
Be safe. ■

Woodland ways

PHOTOGRAPHS BY GARY MARSHALL UNLESS OTHERWISE STATED

Tree ID part III – by twigs & buds

Gary Marshall invites us to branch out in our attempts to identify tree species

Twigs on trees and hedgerow shrubs grow, break off, die, are cut or browsed each year. On most broadleaved trees they are, in healthy plants, prolific. This is simply because they give rise to new flower and leaf buds. Like most things in nature, trees generally produce more twigs than would be needed just to sustain life. In times of drought, trees can conserve water by cutting the sap supply to a percentage of twigs – these then wither and drop off. In high winds it's no big deal for trees to lose masses of twigs. Cutting and browsing will often encourage a plant to put out stronger, more resilient twigs.

The treatment trees' twigs have experienced during life determines their overall shape. For example, take a forked ash tree. Ash twigs have a strong, black, leading bud, but either side of this bud are two small black buds. Should a young ash tree lose its leading bud – say, to frost – the two sub-buds can then shoot equally strongly, giving rise to a forked tree.

Twigs take many forms – smooth, hairy, corky, some with prominent old leaf scars and others of distinctive colours. Thus twigs can aid tree identification. My usual word of warning: as with all ways of identifying trees, whether by leaf, bark or twig, it's better still to clarify your judgement by looking for other 'treey' clues. With blackthorn or hawthorn look also for wizened sloes or haws. With sycamore, look for fallen leaves.

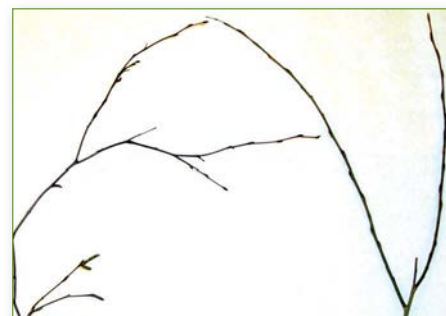
With all twigs look at the arrangement of the buds. These can be: clustered or radially arranged, e.g. oak; opposite, e.g. maples; or alternate, e.g. hazel.

Remember, trees having opposite, alternate or radially arranged leaves on their stems in summer will have opposite, alternate or radially arranged buds on their twigs in winter. Visit the same trees in all seasons. More is learned that way.

Here's a small gallery to help ID – it shows the diversity of twigs even in the same species. ■

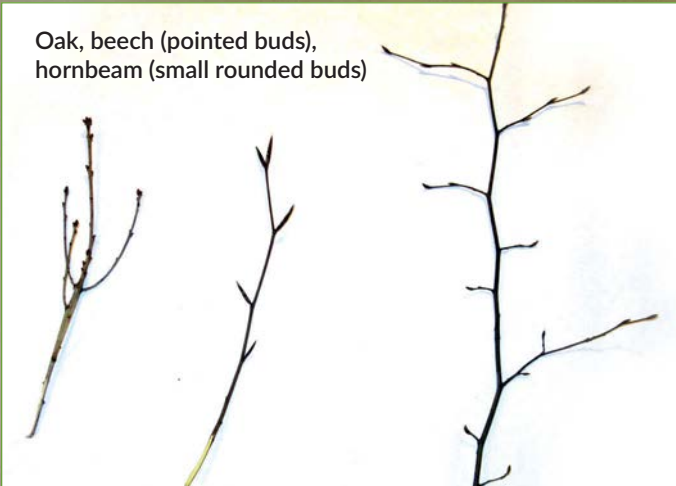


Horse chestnut – note the shiny, sticky buds and prominent leaf scars



Silver birch, crack willow

Oak, beech (pointed buds),
hornbeam (small rounded buds)



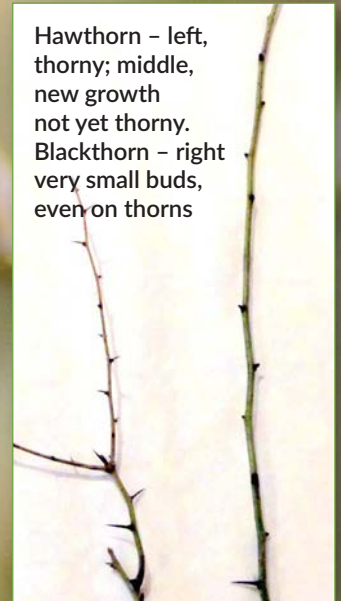
Young beech twigs



Hawthorn,
alder (alternate
glaucous buds on
small stalks)



Hawthorn – left,
thorny; middle,
new growth
not yet thorny.
Blackthorn – right
very small buds,
even on thorns



Spindle (left) and dogwood, both with opposite buds – but
dogwood with coloured stem. Two right-hand photos both oak



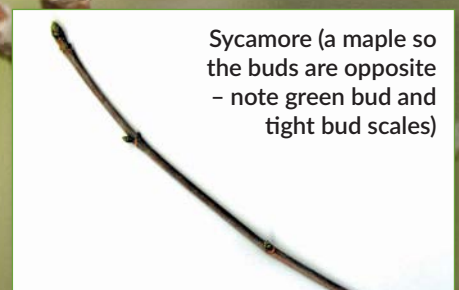
English elm left, field maple right. Both
have corky twigs but elm's buds are
alternate while all maples are opposite



Hazel (variations)



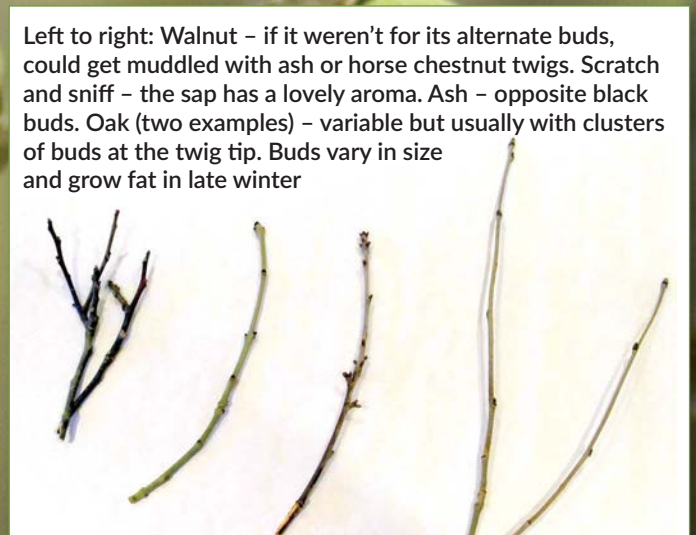
Sycamore (a maple so
the buds are opposite
– note green bud and
tight bud scales)



Ash – opposite black buds



Left to right: Walnut – if it weren't for its alternate buds,
could get muddled with ash or horse chestnut twigs. Scratch
and sniff – the sap has a lovely aroma. Ash – opposite black
buds. Oak (two examples) – variable but usually with clusters
of buds at the twig tip. Buds vary in size
and grow fat in late winter





Tools needed

- Measuring tape
- Chopsaw
- Benchsaw
- Thickness planer
- Router
- Slot cutter
- 18-gauge nail gun
- Sash clamps
- Belt sander/orbital sander
- Plane iron

Materials needed

- Two 2440 x 200 x 38mm lengths of American white oak
- No.20 biscuits
- Piece of 3mm hardboard
- Tin of spray adhesive
- Black leatherette
- Hook and loop-backed abrasive paper 240-400 grit (belt sander 80-120 grit sandpaper)
- 4x50mm screws
- 25mm 18-gauge nails
- Finishing oil

PHOTOGRAPHS BY NIGEL NEILL

Sewing machine table conversion

Nigel Neill creates an 'oh sew clever' table

1 I was asked by a client to strip down an old characteristic sewing machine table and bring it back to a high standard fit for display purposes in a household. I wanted to clean down the cast iron, which was suffering from flaking paint and a general patina, and remove the damaged wooden-veneered top.

While researching on various search engines I didn't see a particular style that stood out with a classical twist in my opinion. I have always liked the

method of herringbone carpentry and decided upon choosing that style for the revamp. The client's only wish was that it had to be made out of oak. I was all for keeping to the original dimensions of the top but decided later that I would slightly enlarge it for more of a stance and for usage.

2 I visited a local hardwood supplier and purchased two 2440 x 200 x 38mm planks of American white oak with the straightest edge I could find.



3 At the first stage I needed to machine the timber and remove any surface defects, thus displaying the grain. I machined the oak down to a thickness of 35mm. This process entailed inserting both planks, in turn, into the thickness planer at every increment of adjustment. This was a crucial step, which ensured the outcome was two planks of timber the same thickness.

4 After the oak had been surface planed I needed to get the edges straight to have something to work with. I first ran the oak through the tablesaw a few times to help straighten the edges, with a little aid from the guide fence.

5 I needed to perfect the edge quality I wanted to achieve, so I used my trusted Stanley No.6 plane and then checked the squareness with my sliding square before carrying on to the next step.

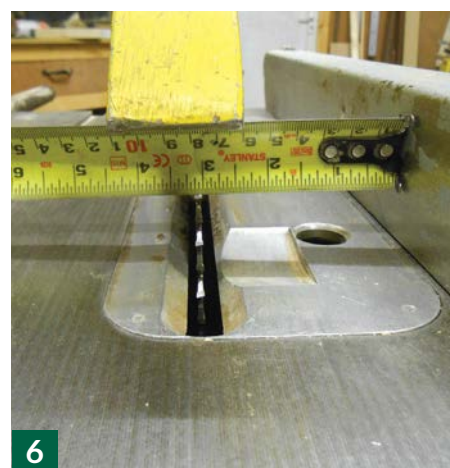
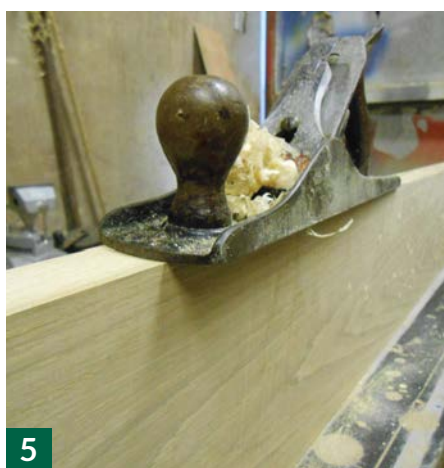
6 I decided to rip the two lengths down to the width of 75mm. This was decided after looking at a few offcuts of timber I had in the scrap bin because I didn't want the 'bulky look'.

7 When this was accomplished I did a dry mock-up to see what my plan would look like. A plywood template cut at the finish size and a sliding square aided this procedure in keeping things correct.

8 All the pieces laid out gave a good impression of how the herringbone pattern should be and helped me consider how I was going to joint all the short and long-grain joints in the middle of the panel.

9 After the dry mock-up I needed to do the jointing. I wanted to achieve a strong bond rather than just a glue-up. I thought biscuit jointing was a fast and sufficient approach, I already had a biscuit slot cutter that I purchased from Axminster a number of years ago for my 1/4in router, which can cut either a single or a double slot.

10 After measuring the thickness of the timber to suit the slot cutter I started the process with two sets of cuts on each side of the boards. When this task was completed I glued the biscuits in place along the sides and started the build-up. ➤



11 I needed to cut the triangular shape pieces for the middle and corners with my chopsaw to finish the design but they were dangerously small to cut slots into so the best option was to glue and nail them in place in the larger boards with my Bostitch 18-gauge nail gun.

12 The outer boards were first glued and jointed together to get the overall structure correct, then the shorter middle pieces could be fitted in tightly to complete the design.

I wanted to conceal the end grain and the most aesthetically pleasing option was to make a border from the leftover material. Again this was 75 x 35mm stock with a 30° undercut bevel cut 12mm down into it from the underneath face. When this was accomplished the board was cut into four lengths longer than needed and then recut with a 45° mitre on one end. The mitred end was positioned so the heel finished in line with the panel end and the opposite end marked and cut at 45° and repeated until the framing was complete.

13 Then I used biscuits and glue to assemble it with some sash clamps to hold it all in position until it was set. Then I undertook a thorough belt sanding to get rid of the hardened excess glue and level the surfaces. An orbital sander and fine abrasive were used to remove the previous sander scratch marks.

14 After a final wipe down I coated the table top in Osmo wax oil, I love the way the grain 'pops out' once the oil touches it. A good three fine coats were sufficient for this project.

15 For the underneath side I wanted to do something different and thought I would use some black-grained leatherette I had left over from another job.

16 I simply cut a 3mm hardboard template to suit, the leatherette being cut slightly bigger than the hardboard. After coating each meeting face with spray glue I covered the hardboard with the leatherette and folded over the edges.

17 Before fixing the top to the frame I got a local jeweller to engrave a logo on to a silver plaque and securely fixed it into place with



two panel pins. At this stage it was a case of positioning the top with the frame with equal overhang and using the original fixing holes on the frame to fix it in place. I used a furniture wax to coat the tip of the screws before inserting them into the pre-bored holes in the oak panel. This was to allow easier screwing to avoid the fear of the screws snapping. I am pleased with the finish of the overall project and admire the grain of the oak. I also think the base and the top complement each other. The client was very happy with the result too. ■



Coming next month in
Woodworking
 CRAFTS

Building the ultimate router table

- Woven will basket making
- Carved family motif
- Curved-leg plant pot stand
- Choosing and cleaving green wood
- Oak table restoration

ISSUE 39
 ON SALE
 12 APR

PHOTOGRAPH BY GMC/ANTHONY BAILEY



PHOTOGRAPH BY THOM ATKINSON

PHOTOGRAPH BY JOHN SAMWORTH



PHOTOGRAPH BY PAUL PURNELL

PLUS: Tricks of the trade – dowel making • Trees for life – lime
 Woodland ways – wildlife surveys • Ask the experts



Patchwork brooch

Andrew Potocnik takes inspiration from the intricate designs on a patchwork quilt and creates this charming brooch

My partner is a keen quilter who is always looking to experiment with new techniques where she cuts fabric into little pieces and then stitches them together into intricate large pieces of material. It's similar to what we do with wood, especially those who indulge in segmented turning, so it was obvious I'd soon see a way of converting one of her new quilt patterns into a piece of turned work.

Unable to help myself, as soon as my mind fires up, I begin to write notes and sketch possible developments in the idea, working out how to convert the ideas into reality along the way. And so this idea evolved. Rather than working on a full quilt scale, I opted to bring it down to the size of a brooch.

INFORMATION

Time taken: 10 hours

Cost: £10

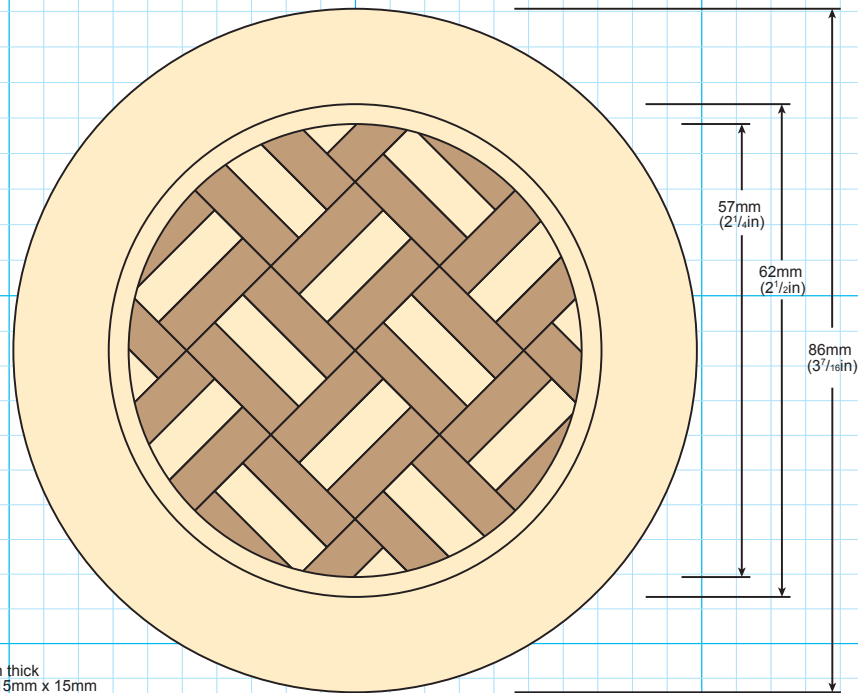
TOOLS REQUIRED

- 12mm bowl gouge
- Curved scraper
- Granny-tooth scraper
- Parting tool
- Custom-made 0.75mm thick parting tool
- Diamond pointed scraper

ADDITIONAL TOOLS

- Planer/thicknesser
- Custom-made jig
- Chopsaw
- Rubber band
- 2 pieces of MDF – to act as pressure blocks
- Gap-filling PVA
- Double-sided tape
- Vernier calliper
- Pieces of veneer
- Range of abrasives
- Attachment or clasp
- PPE: facemask, respirator/dust mask and extraction

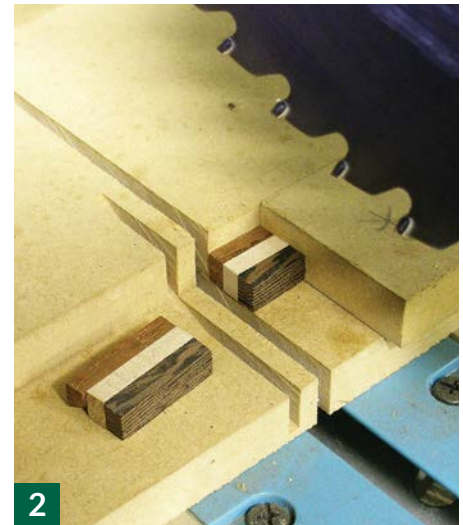
PATCHWORK BROOCH DIMENSIONS



Veneer inlays = 0.6mm thick
Patchwork squares = 15mm x 15mm

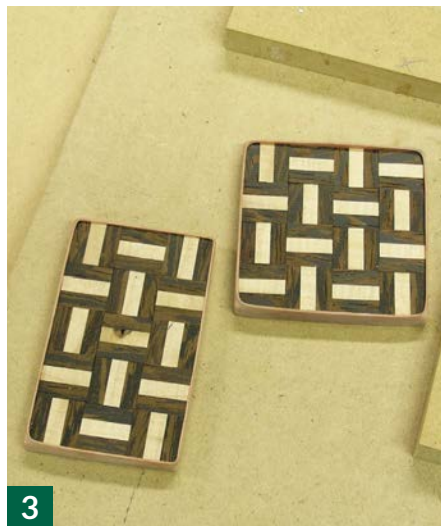
1 Begin by cutting, planing and thickening strips of contrasting timbers. Look for variation in colour and grain pattern before gluing strips of three together and then cutting and planing those down again.

2 You will need to create a custom-made jig and attach it to a chopsaw. Mine has an adjustable stop block to the right of the blade so I can vary the size of blocks I cut – in this case blocks of 15mm. After a couple of test cuts, you may find it necessary to hold these blocks down with masking tape to secure them properly. The same can be done with the long strip of material, especially as the strip becomes shorter.



3 Once a number of blocks have been cut, test a variety of arrangements to see which combination works best, holding them in place with a rubber band.

4 Now make another jig so you can glue and clamp the blocks together quickly, easily and complete the operation in one go. Glue two pieces of MDF, clamp to a baseboard and check to ensure they are at right angles to each other. Place a small piece of paper in the jig so that any glue that squeezes out will not bind the blocks to the jig. Also, wax the inside edges of the jig. ➤



5 Next, using a gap-filling PVA, apply to all mating surfaces. Place the blocks in the jig and clamp with the aid of two more MDF pressure blocks.

6 Once dry and pried free of the jig, you then need to mark the centre of the patch-worked block...

7 ... and attach it to a carrier using double-sided tape. I prefer to use cloth tape as it has a bit more 'give' on slightly uneven surfaces. Plus, if you can find double-sided carpet tape, it will have a great deal more grip. Use the tailstock centre to help centre the block.

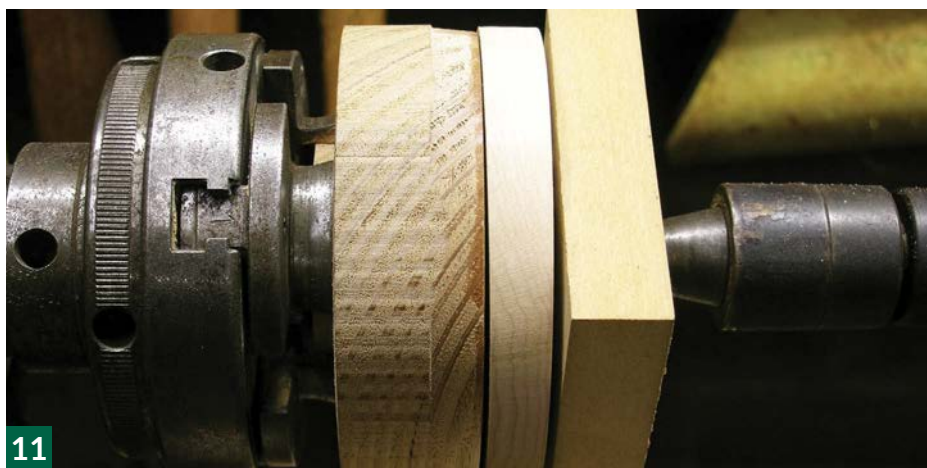
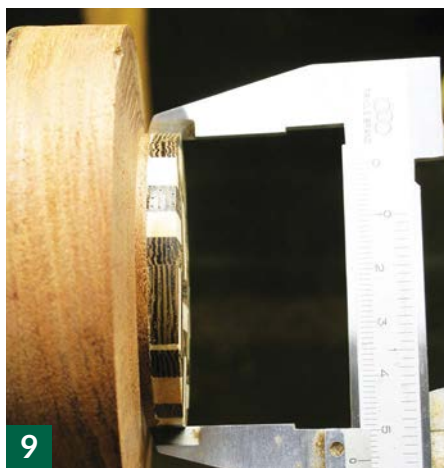
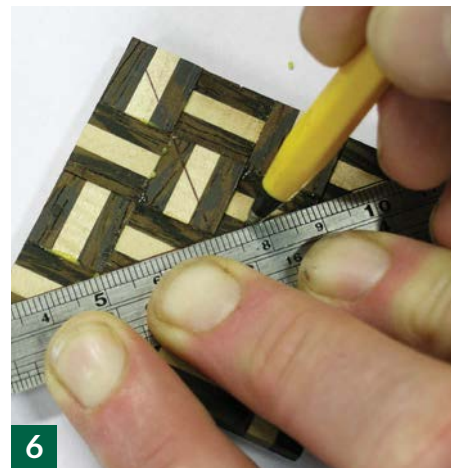
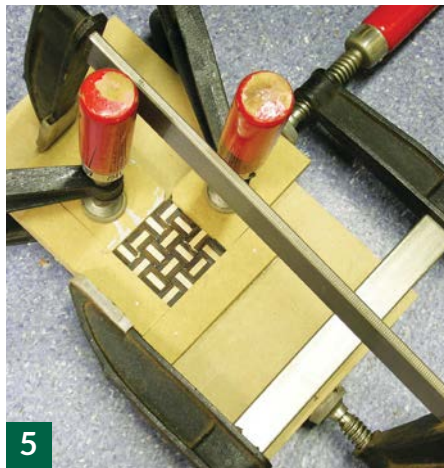
8 You can now trim the block down to a circular disc with parallel sides...

9 ... before checking for straightness and squareness with Vernier callipers.

10 Attach a piece of figured maple (*Acer campestre*) to a carrier and trim down to size before cutting a recess to accept the 'patchwork' disc. Be sure to take accurate measurements using the Vernier callipers and make frequent checks to ensure the two pieces will meet neatly, without any gaps.

11 Next, glue the two pieces together using a gap-filling PVA glue, then clamp into place with the tailstock centre. Use a piece of MDF, which will act as a buffer. This will also ensure the pressure is distributed evenly and that all material meets correctly.

12 Leave the glue to dry overnight, then you can trim the face of the



Handy hints

1. Never be afraid to look beyond wooden creations for inspiration and the development of new ideas.
2. If your partner is a quilter, a brooch may just be an excuse for spending a few extra hours in the workshop.
3. It may be possible to use some of your wonderful small pieces of treasured timber to create a block of many colours, providing you can cut them accurately.
4. Combining timber's particular qualities, such as colour, texture, grain and inherent quirks can highlight these wonders of wood as features.

brooch to a gently curved convex surface. However, it is important to keep in mind how much of the original block will actually remain in the finished item. You don't want to destroy all the work you've put into making the patchwork block right now.

13 Here's the next most important stage in the process – cutting detail lines to create definition and highlights. Using a specially made parting tool, make two cuts to accept veneer inlays. I made this parting tool from an ordinary hacksaw blade, ground to a parting tool-like tip and honed to match the width of veneer, using it as an oilstone. Do this just as you would a plane blade, measuring constantly with Vernier callipers to ensure the measurements match. With the veneer glued into place – note the groove is about 3mm deep and the veneer about 5mm wide – there is a chance it will not press right into the bottom of the groove, so there is excess veneer left to turn off.

14 Once the excess is turned away, trim the overall diameter to a suitable size, then sand all surfaces through to 320 grit.

15 To finish off the back of the brooch, part off and saw it free from the unwanted stock. Mount on to a homemade or bought jam-fit carrier. Unfortunately, I made the jam chuck recess slightly too big. If this happens line the inner edges with several layers of thick PVC electrical tape. Carve a groove into the carrier to allow a thumbnail access and prise the brooch free once completed.

16 The final touch requires cutting two neat V-grooves, which allows a space for your name and the timbers used followed by an attachment of a clasp. Buyers like to know the materials their purchases are made from, and if they don't, they should. Likewise, why should any maker apply their name to their work? Apart from identifying your work and intellectual right to claim ownership of something you have developed, there is also the promotional aspect where a prospective purchaser may like the item you've produced and can connect your style to similar works that appeal to them.

17 As for this brooch, it was ready for the next quilters' meeting and debate about how it was made. ■



12



13



14



15



16



17



KITTED OUT

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

TEST

Trend T35A extractor

The Trend T35 extractor

Mark Baker tries out the new wet and dry extractor from Trend

We all know that certain power tools can generate a lot of dust in use and finding effective ways of minimising the risk of exposure to and ingestion of it is vital to our wellbeing. Trend has introduced The T35 M-class wet and dry extractor, which may well help as part of a package of measures to minimise exposure to dust.

It is supplied with a HEPA cartridge filter and a micro-filter bag in dust filtration mode, a polyurethane foam filter for vacuuming wet areas, a 5m hose, floor-cleaning kit with valve, a stepped adaptor, round brush, crevice

tool, upholstery tool and instruction manual!

I know I might be in a minority, but I read the instruction manual, which is clear and concise, and fitted the dust filter bag in the slot on the inside of the inlet point. I fitted the hose, with its 39mm external diameter pipe and a stepped adaptor, before coupling it to a sanding unit and the sander plugged into the power take-off socket.

I proceeded to sand the workbench top with 100, 150 and 180 grit abrasives to remove scuffs, bumps and build-up of gunk ready for refinishing.

The unit is powerful and works very well. The hose is flexible enough to move easily with the motion of the tool and, while not quiet, it is significantly quieter than some of the older models of extractor I have used in the past.

Anyway, I usually wear ear defenders when using such powered tools.

I also like the fact that the extractor has a 7m lead, so you can position the unit well away from you.

This unit has an auto-shake facility to clear the filters, ensuring efficiency for as long as possible.

Verdict

I must admit I did not try to vacuum any wet areas, so I cannot comment on that, but I did use the unit on various power tools over an extended period and it didn't cause any problems in use whatsoever.

It is robustly built and should

TECH SPEC

- 27-litre capacity impact-resistant body/container measuring 350 x 390 x 610mm with castors
- Dust class category M rated to EN60335-2-69, for dust with workplace limit values > 0.1 mg/m³.
- Powerful but quiet 1400 watt silenced motor (max. 1600 watt).
- Power tool take off with auto-start feature of up to 2200 watts and eight-second run-on delay.
- Auto filter shaker and blockage warning light.
- Extra-long 7m power cable.
- Extra-long 5m hose with power tool adaptor.
- HEPA (High Efficiency Particulate Air) cartridge filter with 0.3 micron filter efficiency and nylon pre-filter.
- Includes floor-cleaning kit, power tool adapter, crevice tool, upholstery tool and foam filter.
- Container outlet plug for ease of emptying liquids.

Price: £418.80 inc. VAT
Contact: www.trend-uk.com



The T35 in use



PHOTOGRAPH COURTESY OF TREND

withstand the rough and tumble that these units are expected to put up with. It is easy fit and change attachments and accessories, it is powerful suction wise and is easy to use. I think it is well worth considering if you need a decent workshop extractor. ■



Hultafors saws

Hultafors is perhaps best known for its range of axes, but it has now introduced a range of saws which cover a wide variety of applications and which are said to give precision and control. They come in a distinctive red, grey and black livery and cover everything from floorboard sawing to tree-branch trimming to sawing through concrete construction blocks. The short handsaws start at £17.90 Bow saws start at £21.10 Larger hack saws start at £19.18 Ryoba saw: £43.15 Jab saw: £16.30 Concrete saw: £60.73 www.hultafors.co.uk

Veritas micro-adjustable wheel marking gauge

The Veritas micro-adjustable wheel marking gauge has a stainless steel rod that features a built-in adjustment mechanism. The cutter can be fine tuned within a range of just over 6mm using a fine-pitch internal thread for slow, very precise setting. Locking knobs keep the setting from shifting in use. The offset placement of the rod through the brass-faced aluminium body ensures a large reference surface and square registration on the stock and prevents the gauge rolling off the bench. The hardened steel wheel cutter has a single-sided bevel that pulls the gauge face against the stock and scribes perfectly, even on cross grain. It can also be used for transferring dimensions such as tenon shoulder and mortise depth. When not in use the cutter retracts into a hollow in the gauge face for protection.

Veritas micro-adjustable wheel marking gauge: £36.89
For more information and current pricing, please visit www.brimarc.com



MINI TEST

Hope drum sanders

Sure sanding with a drum

If you need to sand internal curves on the lathe or a pillar drill then Hope drum sanders are the perfect way to do this. The components of the system are three diameters of solid heat-dissipating aluminium drum, a 2MT Morse taper adaptor or, alternatively, a kit for the pillar drill comprising a hex-ended chuck adaptor and a dead centre for the bottom end for the chosen size of drum to mount on. There is also a safety drawbar for lathe work. In addition, Simon Hope supplies Indasa hook and loop abrasives in 1m rolls from 80 grit right through to 1200 grit.

For lathe use with the drum and adaptor mounted on the headstock, you can either bring up the tailstock centre to fit in the hardened insert in the end of each drum or use without, but insert the threaded drawbar so there is no danger of the Morse taper coming loose.

The abrasive is cut to size using the measurements shown on the not-to-scale drawing supplied. Simon recommends using scissors to cut the abrasive but using a utility knife on the reverse side will avoid resharping – just throw the blade away.

The abrasive is inserted into the drum slot so it is away from you on the lathe and can't 'pick up' and become detached. Extraction is essential as a lot of very fine dust is generated.



PHOTOGRAPH BY GMC/ANTHONY BAILEY



PHOTOGRAPH BY GMC/MARK BAKER

Working with the pillar drill entails drilling a 40mm diameter recess in a piece of board to take the lower part of the dead centre. If you have a 65mm diameter Forstner you can let in the upper section of the dead centre as well. In any case you will still need a thin board cut to fit around the drum to bring the table surface up enough to ensure there is complete abrasive coverage when sanding.

Verdict

Considering how solid and well balanced the drums are and the accuracy of the adaptors, it is not over-priced. You get safe, reliable and accurate sanding with no run-out because both ends of the drum are fully supported. There is a helpful film on Simon Hope's website which demonstrates how to use on the lathe and pillar drill.

Simon Hope drum sanders

25mm dia. drum: £20
40mm dia. drum: £22
60mm dia. drum: £26
2MT lathe holder: £14.00
2MT drawbar: £21.50
Pillar drill holding and centring kit: £27.00
Visit: hopewoodturning.co.uk



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Oak drop-leaf table

Oak leaves may fall, but **Louise Biggs** is there to pick them up again...

With one leaf hanging off its hinges and the other leaf loose and split, my client brought in his drop-leaf table for some much-needed TLC. Although the colour of the top was bleached he requested that, apart from a coat of wax, the tops were not to be touched.

Tool list

- Screwdrivers
- Drill and drill bits
- Rubber mallet
- Hammer
- Sash and G cramps
- Fore plane
- Flush-cutting saw
- Squares
- Personal protection equipment

Assessment

- On both leaves there were splits along the butt joints joining the sections of timber.
- The hinges cut into both leaves were loose or detached due to the screws pulling out of the timber.
- The rule joint on one leaf was broken over half the length of the flap.
- The joints on the table frame were all loose.
- The knuckle joints, although somewhat loose were tightly held by the metal pin.
- When re-gluing the splits in the leaves, the surfaces would need to be clamped together exactly flush as they could not be levelled after.



Table with its one leaf hanging off the hinges



Loose hinges where the screws had pulled out of the timber



Top surface of the broken rule joint on the leaf

STAGES OF RESTORATION

Table frame

1 The leaves and the centre top were removed from the table frame and marked for their positions in relation to one another and the frame. The two swing legs were held with knuckle joints to supporting timbers which were glued and screwed to the top centre rail. Marked to indicate where each leg went, the screws were removed and the support timber prised from the centre rail.

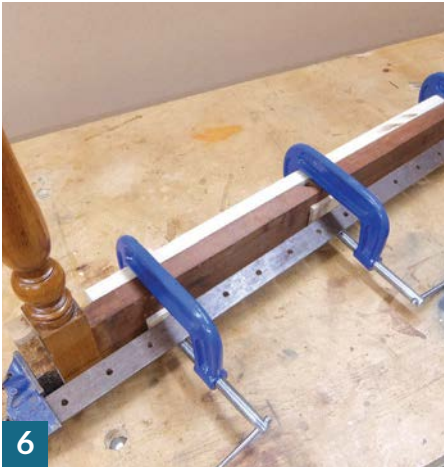
2 The remaining frame was gradually knocked apart with a rubber mallet and using protective blocks where a little more weight was required from a hammer. In a logical order the top frame was parted from the turned uprights.

3 The turned stretcher rail was then removed before removing the turned uprights from both shaped feet sections. It is important to mark the position of each piece and in which direction they face, but it is best to mark the low tack tape before applying to the timber sections as the writing can transfer and mark the polish.

4 The only joints not loose on the frame were the sliding dovetails joining the centre top rail to the top blocks of the legs. In order to re-glue the frame square and parallel this unfortunately meant that the entire frame would need to be glued up in one go. A modified cold animal/hide glue was used as this gave a longer working time than the standard animal/hide glue. With sash cramps and protective blocks set to length and within easy reach, the main frame was re-glued with the use of a second pair of hands.

5 Both swing legs were loose on their respective rails so the joints were knocked apart. The knuckle joints were slightly loose due to wear around the metal pin. To tighten the joint a new, slightly larger pin could be inserted. As it was, any attempt to remove the pin was unsuccessful, probably due to a bend in the existing pins. Any further force would have led to damage to the knuckle joint so the decision was made to leave well alone, as the damage would have far outweighed the small amount of movement. Further information on knuckle joints can be found in an article by Michael T Collins in issue 36. ➤





6 For each swing leg, the rails joined by the knuckle joints were firmly clamped to a straight board. The legs were then re-glued into position and clamped with a sash cramp. With the whole section set on a flat board the legs were checked for square using a large square, checking that they remained parallel to the rails. When dry, each swing leg section was glued and screwed back to the main frame.

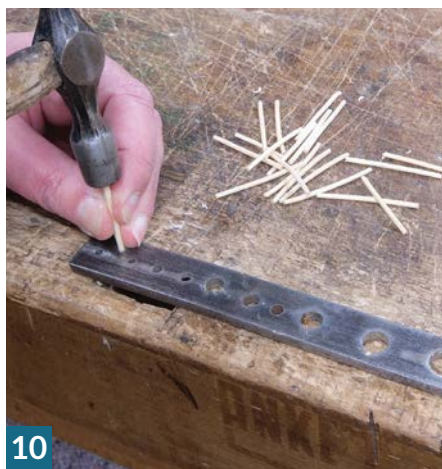
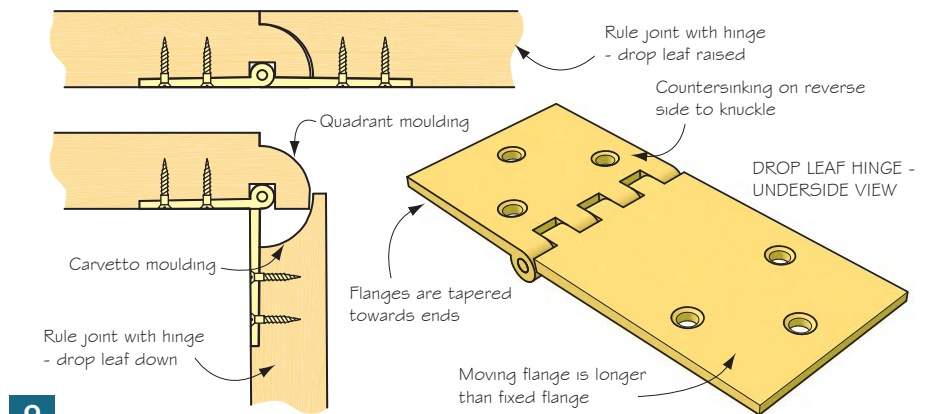
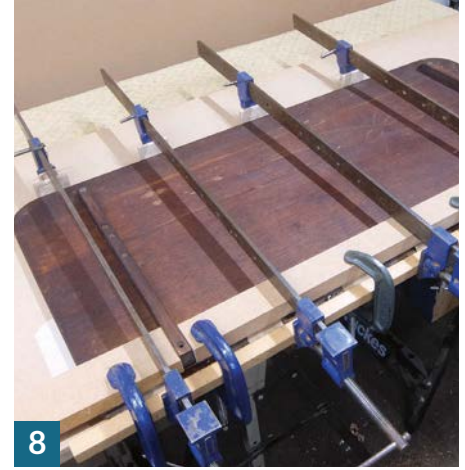
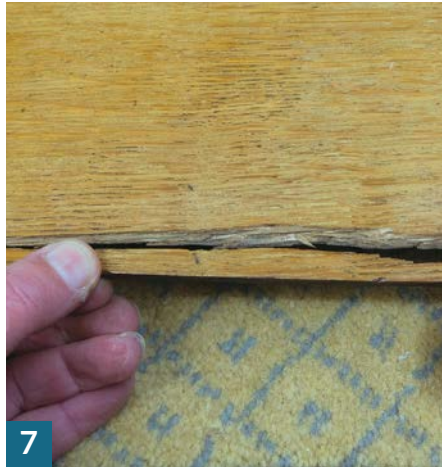
Repairing the rule joint

7 The broken edge to the rule joint was fragile and was repaired before the splits in the leaves. As the polished surface could not be disturbed it was important to get the strongest repair possible while keeping the top surfaces flush. The position of the break left only a small surface area for re-gluing.

8 Cramps were prepared along with protective blocks. Newspaper with a thin coat of wax would prevent the blocks from adhering to the surfaces. Using the same modified cold animal/hide glue, the break was glued. Blocks were loosely clamped in place with the G cramps to hold the surfaces level while positioning the sash with narrow block along the width of the table leaf. The sash cramps were then tightened at the same time as the G cramps in order to pull the joint together in both directions.

Rule joints

9 Rule joints are used to join the central top to the table leaves on drop-leaf and gate-leg tables. The main central top, which is fixed to the frame, is cut to have a quadrant (rounded) moulded edge. The top edge of the leaves are cut with a carvetto (hollow) moulded edge. When the leaves are raised the two mouldings intersect so



all that is seen is a straight line, with a minimal clearance gap.

The hinge is a specific rule joint hinge – the countersinking on the screw holes is on the reverse side to that of the knuckle. One flange is wider than the other, the smaller flange incorporating the knuckle. When fitting the hinge the knuckle is recessed into the quadrant moulding. The further the knuckle moves to the outer edge of this quadrant the larger the clearance gap becomes.

10 To strengthen the carvetto moulding very fine dowels were



formed to act as pins through the break. Using a piece of 6mm steel bar, a 2mm hole was drilled through the plate. Short, fine sections of timber were tapered to round with a chisel to act as a starting point before each piece was gently hammered through the plate, cutting them to fine, round dowels.

11 With a corresponding 2mm drill, a row of holes was drilled alternately at an angle as shown while keeping parallel to the top surface. By drilling at an angle the glued dowels act a lock to prevent the re-glued outer

edge from breaking away. When dry, the protruding ends can be cut flush with the narrow edge.

Repairing the table leaves

12 Each table leaf was made up of two sections of timber, butt-jointed together. At some point support battens had been fitted to the underside of each leaf. Having repaired the rule joint attention was turned to re-gluing the other leaf, which had split along the glue joint. The battens were removed and the two sections separated.

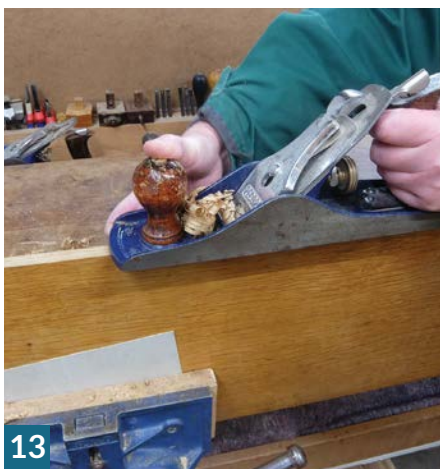
13 Each joint edge was slightly convex along its length due to movement in the timber. A fore plane was used to shoot the edges straight, making sure to also keep them square. A slight concaved edge is preferable to having a slightly convex edge as clamping the leaves will allow for a tight joint.

14 Using waxed battens with newspaper to keep the two surfaces flush over the joint, the two leaf sections were re-glued. Two pairs of hands are recommended in order to tighten all the cramps. Where the surfaces were not pulling up flush, small, thin pieces of card were used under the blocks in order to push one edge down slightly further than the other. Any minor splits were glued in the same way.

15 The existing screw holes were plugged with oak pegs cut flush when dry. As the centre top was slightly thicker than the leaves two stout timbers were placed underneath against the top surface and clamped



12



13



14

in place. This kept the polished top surfaces flush. The hinges were then refitted to the central top. On the leaves, one screw in each hinge was fitted and the movement of the leaf checked before inserting the remaining screws.

16 The battens were refitted and the frame screwed back to the

central top. Now it was back on its feet, the table's leaves were raised to make sure no other adjustments were necessary. Very carefully, any slight damage to the broken rule joint was picked out with tinted polish to match. Finally, the table was waxed with a slightly tinted wax before being sent home. ■



15



16

Art Deco-inspired bird



PHOTOGRAPHS BY PAUL PURNELL

Paul Purnell lets his artistic imagination take flight with this decorative carving

The distinctive style of decorative arts and architecture known as Art Deco derived its name from the Exposition Internationale des Arts Décoratifs, where it was first exhibited. This took place in Paris in 1925 and it became a major style in the UK in the 1930s.

The then modern, garish style that used expensive materials such as silver, ivory and jade, was a reaction against the austerity imposed during World War I.

Although it had fallen out of fashion by the time of World War II, it is still an inspiration for arts and fashion today.

Art Deco is characterised by smooth lines and clean shapes that were often symmetrical or geometrical in design. Animals and birds are often depicted. The Art Deco style often used for bird sculptures has been the inspiration for this project of a generic-style bird on a geometrical base.

Cutting & shaping

1 Make a side template from the drawings and use it to bandsaw the blank.

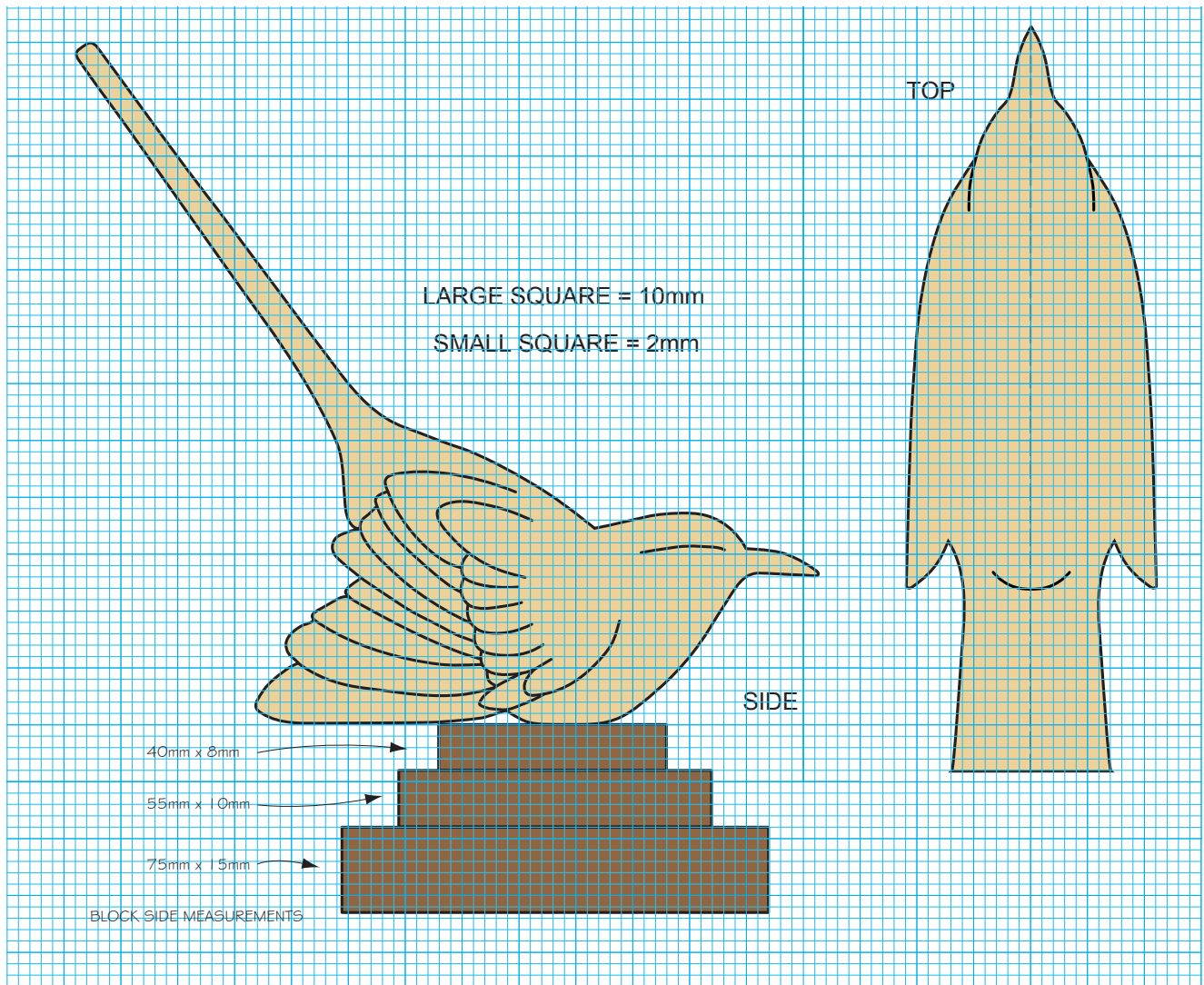


Tools

- Bandsaw
- Rotary tool
- Assorted burs
- Cushioned-drum sander
- Split-mandrel sander
- Carving knife

Materials

- Piece of spalted beech: length 140 x height 130 x width 50mm
- Three pieces of mahogany: length 75 x width 65 x depth 15mm; 55 x 45 x 10mm; 40 x 35 x 8mm (these measurements are the finished sizes)
- Sandpaper of assorted grits down to 800
- Wood glue
- Epoxy glue
- Finishing oil



2 Draw a centreline around the blank. Using the top view drawing for reference, shape the head and tail with a coarse burr in a rotary tool.

3 Use the same burr to round over the head down to the scapulars as shown.

4 Round over the top of the body to meet the top feathers of the wings. Do not take any material from the bottom edges of the wings.

5 Using 120 grit on a cushioned-drum sander, give the piece a general sand. Do not sand the beak. Check for symmetry and adjust if necessary.

Interesting fact: After Miami, Mumbai is the second city in the world with the most iconic Art Deco architecture.



6 Draw on the wing features.

7 With a coarse burr, round over the breast and remove the excess wood from the tips of the primary feathers. Sand with 120 grit. Redraw any feather details removed during the sanding.

8 Draw on the upper and lower tail coverts. The top finishes approximately 80mm from the tip of the tail and the lower 65mm. Define using a coarse cylinder burr. Make sure that you don't reduce the thickness of the tail below 4mm.

9 Using 120 grit paper, round over the hard edges of both sets of coverts. Sand the tail to an approximate thickness of 4mm. Finish the sanding by hand with a block to achieve flat surfaces.

10 With a combination of coarse and medium burrs, remove the wood from between the wings to create the bottom of the body. Take the thickness of the wings down to 3mm.

11 Sand the lower body and inner surfaces of the wings with 120 grit paper.

Adding fine detail

12 Use a carving knife start to define the feathers of the wings. Start with the secondary coverts and alula. Lightly round over with 120 grit in a split-mandrel sander.

13 Now define the primaries with the carving knife, then sand.

14 Draw the midpoint along the upper surface of the tail. Use a combination of the cushioned drum



Tip: If you are using spalted wood, as I have, the density can vary from soft to hard. Do not use too much pressure when using aggressive burs as they will dig in any soft area and could ruin the carving.

sander and a sanding block to bevel the upper surface from the middle down to the edges.

15 With a ruby flame in a rotary tool define the cheeks of the face. Blend the edges with the split-mandrel sander.

16 Draw on the beak and define with a truncated-cone burr. Sand using sanding sticks or something similar that will not flex. As this is a very stylised bird it gives you license to add your own elements of style. This photo shows how I have finished the head and beak – you can choose to do something different.

17 Use the ruby burr to define the eye channels and sand.

18 The bird is finished other than a thorough sanding. I have taken this carving through 240, 400, 600 and 800 grits.

Making the base

19 Cut the three layers of the base from mahogany using the bandsaw. The measurement of the bottom piece is 75 x 65 x 15mm; the middle piece is 55 x 45 x 10mm and the top layer is 40 x 35 x 8mm. These are the finished sizes so cut slightly larger to allow for sanding.

20 Sand and then glue the layers together.

21 Use your choice of finishing oil for bird and base. When dry find the position for the bird on the base you prefer and drill a hole in the bird and upper layer of the base to accommodate a wooden dowel. Glue the bird to the base. This is the finished carving.

22 View from the rear showing detail of spalting. ■



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22

Ask the experts

Another selection of awkward questions for our experts to answer



ANTHONY BAILEY
Editor,
Woodworking
Crafts magazine



MARK BAKER
Group Editor,
GMC woodworking
magazines

IT'S JUSTIFIED AND IT'S ANCIENT...

☞ We recently moved into a Victorian terraced cottage which we have been told dates to 1827 and was originally built as a bakery but never used as such. Instead, it became a grocer's shop, followed then by a butcher's, both serving the big houses round about. In the late 19th century new wing properties were added, creating the current terraced houses. Our bedroom seems to have the oldest floorboards in the house, and they do creak a bit when we walk on them. We are about to get a new carpet laid so I lifted a section of the old carpet that was left behind and found it had been screwed down with modern screws and a piece of tin sheet, nailed I guess, over a hole in the boards. I'm not sure how to deal with the creaking as I haven't tried lifting floorboards before. Any advice please? ☞

Nat and Gail Benton

Anthony replies: Well, as always the question is a simple one – in this case creaking floorboards – but the answer is more complicated.

The presence of modern power-driven screws placed near the sides of each floorboard suggests it was done by a carpenter, or at least someone who knew what they were doing. Normally screws aren't put in the middle of a floorboard as that is often where services, e.g. pipes and wires, are fed through holes in the joists below. This type of screw is normally driven in with a cordless drill into what can be age-hardened timber joists, with floorboards that can be a bit split up or brittle. Trying to withdraw the screw without burring the head recesses can be tricky – the screws may just stay put and not wish to come out. The screw heads are fat so you can't just lever up the floorboards as you can with old fashioned nails.

You are left with cutting across floorboards to no



Treading the boards – old and creaking or brand new

deeper than the floorboard thickness to avoid damaging the joists or services. It is a job for a special plunge circular saw with a depth-setting facility, being run along the middle of a joist line. This can be spotted by the presence of old nails, or slip a thin object down between the gappy floorboards and see if you can detect the solid sound of a joist, not the dull tap of wires or metallic response of a pipe. Incidentally, old properties can have rubber-insulated wiring. Hopefully this has been dealt with as it can be a safety hazard if it has denatured. Recent work may even have included plating over joist sections where services run through to protect them. Cutting across a metal plate can be a bit exciting with some sparks and a damaged sawblade. If you get this far and lift any sections of floorboard you then need to insert packing pieces of something such as plain roofing felt or thick cardboard to help disrupt the irritating harmonic of dry timbers rubbing together – but it isn't guaranteed to work. Then you have to firmly fix it all down again taking care to avoid further damage.

It may be wiser to seek professional help instead.

IS SIZE IMPORTANT?

☞ I want to upgrade from a cheapo router bought at a supermarket to a better quality model that will last. Do I go for a big machine or just something in the middle, size-wise? How much should I spend? ☞

Wes Reardon

Anthony replies: Starting with the last sentence first, if you have the money, spend what you like – unless of course you have a small

voice, real or imagined, telling you not to. Do you need a big machine – I guess you mean a ½in shank 2000 watt router? Probably not, unless you intend doing joinery work and the like. If you want it to last, then buy the best quality you can if you are serious with your routing. Go for a mid-size Bosch blue professional model or even a Festool if you feel so inclined. Expensive yes, but built to last. Just make sure you arm your new router with good-quality cutters to match with it.

The Bosch GOF 1250 CE gives you the best of everything



LOGGING ON

👉 I'm a convert to a woodburning stove and love it for the heat output and being self sufficient for energy – well, almost. Two things really. One is the recent concerns about creating more pollution and the other is how timber can ever be truly dry if it is stored either out in the open or only with top cover. Enclosing wet logs with doors or a tarpaulin surely isn't good either? I'd like to build up a store of my own logs ready for next winter instead of buying as I have access to some trees that need lopping or felling. 🐼

Gem Ransome

Anthony replies: The two questions are intertwined in a manner of speaking. Cut logs, whenever they are produced, need time for the sap to dry out. This is different to being wetted on the outside with a bit of rain, hence organised log piles are often left out in the open. The elements will eventually ensure the timber is left lifeless and the cells in the wood will shrink and harden, but those same elements can also give them a soaking. Husbanding your log piles is therefore essential if you can't organise covered storage for all of it. Move logs that have been exposed for some months into a dry, airy location to complete their seasoning ready to burn and don't stack any logs on the ground to



Let the airflow get to your logs once they are cut

avoid rot and improve airflow. The final touch of drying is to bring logs into a hopefully warm house in good time before you need to burn them so they are in their final dry state. Drying logs properly ensures you aren't burning wet instead of wood. It improves burning efficiency, reduces flue liner damage and yes, it keeps atmospheric pollution to a minimum. Set correctly, a woodburning stove should only produce a small amount of visible smoke, less than open hearth fires and some older oil-fired boilers.

DON'T BE BLUNT

👉 I've got a couple of relatively new hand planes, a block plane and a smoothing plane. I tried sharpening with a diamond plate and the block plane isn't bad, it cuts quite well, but the Record smoother is dreadful. I got what I thought was a sharp edge and it cut hardly any softwood before it seemed to go blunt again. Is it me or is the blade duff? 🐼

Andy Gibson

Anthony replies: Um, excuse me but, well, in a way, I'd like to say it was your sharpening technique which is the problem, but I fear it is a defective blade which doesn't say much good about the state of hand-tool manufacture. Unfortunately, I think more recent examples of traditional hand tools at the lower end of the price range have proved to be of low quality in certain regards, particularly cutting edges. Yours may be an unfortunate one-off but I suspect it is symptomatic of a wider problem of cost cutting and quality control.

If the plane is good in other respects it is quite easy to upgrade the blade for a better one if you don't mind



The Ray Iles carbon steel blade is the much thicker one

spending some money. There are some fancy options with exotic steel alloys but, for lower cost, I have previously chosen blades from Ray Iles. These are thicker than the originals and are made from carbon steel. You should find they do all you want at a reasonable price. Find them at: www.oldtoolstore.co.uk

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Not so dusty

Project-building with MDF



This article describes how you can fashion a safe solution to the problem of machining MDF, especially face machining where a lot of dust is created in the process. Some routers have better extraction but you can take matters into your own hands by making a special sub-base that draws up fine dust from around the cutter itself. In this instance it is a bed headboard being made, but the same add-on base will obviously work with many other routing tasks.

THE JIG

Dust is the enemy of woodworkers. Fine, invisible dust less than one micron in size can penetrate human tissue – that means skin and lungs. So when we want to machine a material such as MDF – especially when face moulding – it generates a lot of dust. We need to consider how to deal with this. So, I thought I would try to mimic several routers on the market that have in-built extraction, by making an add-on base through which the dust is drawn immediately sideways and up the extraction spout. It adds a little thickness to the router base but, in most cases, cutters will still project enough, or you can fit a collet extender.

1 I used very thin 1.5mm birch ply for the top and bottom faces, which are cut slightly larger than the intended router base size. The ply is so thin a Stanley knife and straightedge are best to score it and finally ‘crack’ the ply by bending so it parts cleanly.

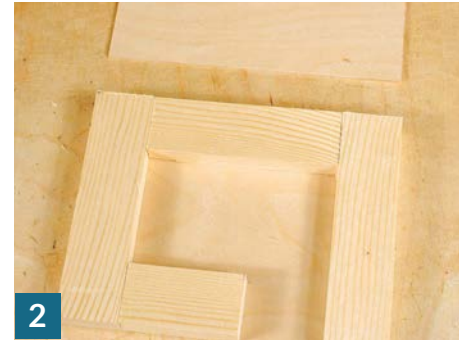
2 Cut some pieces of softwood fillet to make the frame of the base, ensuring all cuts are square, and leave a slot for the extraction spout. Glue and sandwich the pieces between the top and bottom plies and clamp up carefully. Wipe off any excess and leave to dry.

3 Trim the sandwich square and mark on both faces where the dust outlet slot is. Nip off the corners evenly with a saw. Make a hole roughly in the middle of both faces using a router and straight bit.

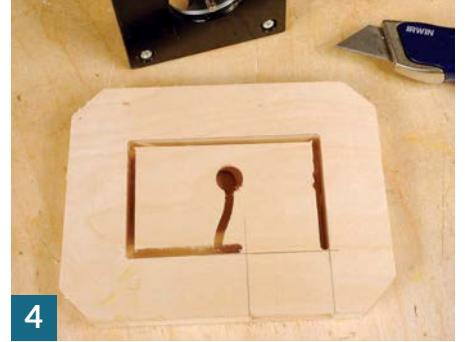
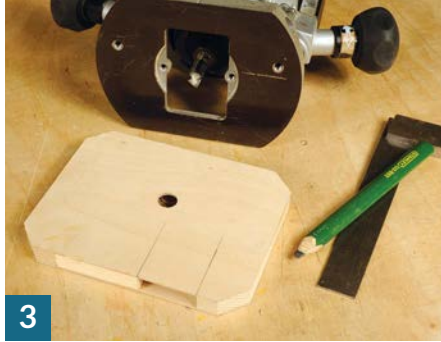
Safety note

Although home woodworkers encounter lower levels of wood dust than are experienced in industry, they may be more at risk through taking inadequate precautions. There is a very good FAQ page on the Health & Safety Executive website which gives useful safe working guidance. www.hse.gov.uk/woodworking/faq-mdf.htm

4 Now use a straight template trimming bit entering through the hole on the face and machine away the centre area running against the inside faces of the fillets. Any lumps of glue may foul the run but you can see them now to clean them off. Repeat machining from the other face. Take great care to stop at the dust outlet pencil lines or you will machine into the ply and ruin it. Use a Stanley knife and straightedge to cut along the un-machined portions.



5 Use contact adhesive to stick a piece of laminate sheet to the underneath face to protect it and allow the sub base to glide easily. Cut away waste overhanging the edges with a Stanley knife. Repeat step four to remove the centre piece of laminate.



6 Use a bevel cutter to machine a small bevel on all outside edges but avoid the dust outlet slot. These last sections can be done with a hand file. Mark, drill and countersink the holes for the fixing bolts to the router base.



7 The top side needs a tiny rebate to take a rectangle of polycarbonate with rounded corners that just sits in flush, and is trapped by the router's own base.



8 You need a rigid extraction spout. I decided to use a sink waste pipe and an elbow bend. The bottom of the elbow is cut flat, sanded and a flat piece of plastic conduit bonded to the cutaway underside and another flat piece glued over the portion that shows above the sub base. Once fitted into the sub base, the setup seems to give close on 100% dust removal with an extractor fitted. ➤

The cutters

Quite a selection of cutters have been used for what seems a simple project. A 12mm straight makes the opening in the extraction sub base followed by a tiny Trend profile trim cutter then an equally tiny rebate cutter to fit the polycarbonate sheet in the top. Next is a small, classical face-mould cutter for the panel effect. The larger-profile trim cutter rounds the headboard corners, then a 19mm straight cutter is used to clear the bearings on the next two cutters. The 9.5mm straight makes the headboard leg slots and then a dedicated router drill countersink makes the screw holes in the legs.



MAKING THE HEADBOARD

1 The first step is to measure up and mark out the board size required. This will generally be the same width as, or wider than, the bed width and then cut to size. Mark out any detailed shaping, in this case the rounded corners and the positions for the panel shapes which will be face moulded.

2 Fit the face-moulding cutter and the newly made router extraction sub base. Clamp a straightedge in place after measuring the cutter to sub base edge distance, aligning it with the panel markings at both ends of the line. I found a waste piece of plastic with a projecting pipe that I could locate safely in the ventilation slots on the top of the router.

3 Make sure the extraction is linked up to the sub base and switch on. Plunge and machine the first panel moulding line, ensuring you do not overrun. It is better to slightly undercut the line and then the adjoining machining will probably run neatly into the first.

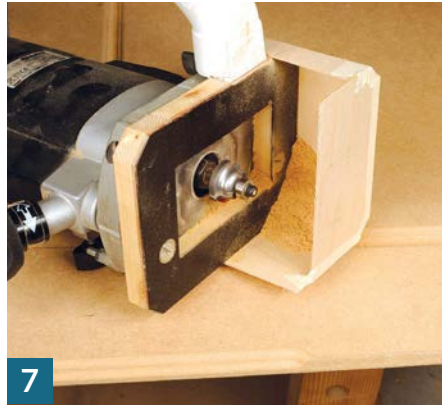
4 Continue to machine all panel lines, dust free, until the panel shape or shapes are complete. With poor or no extraction this operation is very unpleasant, so our newly made sub base will make all the difference. Note how a line-undercut has produced a slight point in the corner which can be carefully cleaned away with a gouge. The pencil stop mark is to avoid overrun, which is worse.

5 In order to machine the rounded corners a shaped template is clamped underneath for a straight bearing-guided profile cutter to follow. A simple spout shape is screwed to a 9mm piece of board to act as an extraction sub base when hooked up to a vacuum unit. It works effectively with this type of cutter.

6 The back edges of the headboard need a round over. This time dust escapes around the top of the large diameter cutter so the extraction sub base needs to be refitted. A lot of dust is ejected below so I used a second extraction sub base to which I glued a thin ply shield and a base piece. This collected the dust ejected from the side.



7 The front edge can be made to look better and feel more comfortable by applying an ogee moulding using a bearing-guided cutter. The sub base stays in place to draw up dust. When one side is machined, rest the router carefully so you can collect the dust safely from the dust shield then proceed with the next.



8 A headboard normally needs fixing using two slotted legs that slide on to bolts fitted on the back end of the bed. These can be machined best on the router table using a straight cutter in several passes until the cutter breaks through the leg. Fit a stop at the out-feed side so the cuts finish at the same position at each pass. Note the slight notch-out to prevent dust packing and stopping the cut short. The extraction hood is holding the component down and a set of spring fingers press against the side.



9 Drill and screw the legs to the headboard and, if you have a router drill-countersink, you can use that to make the holes. This is an efficient way to drill accurately.



10 Undercoat the headboard with a paint designed for porous board such as MDF, so the edges are sealed before applying proper top coats. Rub down the surfaces, especially the mouldings, so they are smooth after the base coat.

Finishing

Achieving an ultra-smooth finish on cut or 'end grain' MDF after painting is quite difficult as the paint really hardens the fibres. ■



Safe standing

Putting a router down with the body still plunged because you want to stay at a particular cutter depth setting or because an overlong cutter is fitted, presents a problem. You can make a thick MDF block with a routed-out opening to rest the router on, but an even simpler way is to use Celotex polyurethane foam board that is used for building insulation. The advantage of this is it gives a good support surface and cuts really easily so there is no strain or wear on the cutter, but it doesn't make dust as it is trapped underneath. To give it nonslip grip I use spray adhesive and let it dry off before mounting the workpiece. Best of all, offcuts can be found in builders' skips everywhere.



Celotex foam makes a great sacrificial work surface



Screwing the headboard support brackets in place

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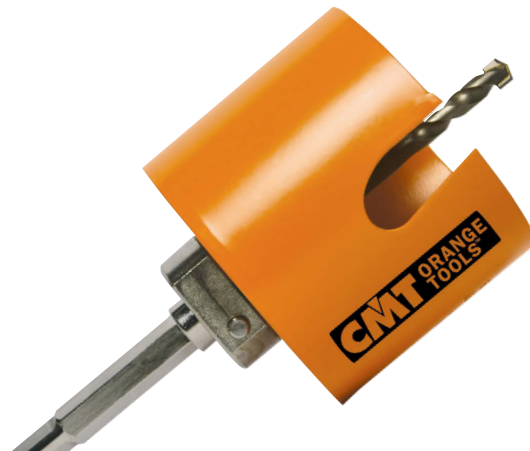
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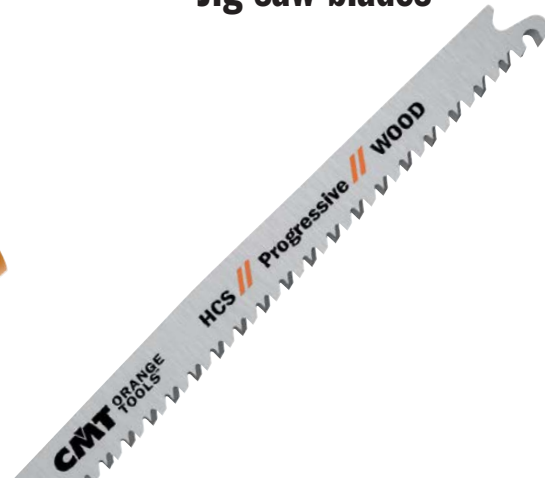
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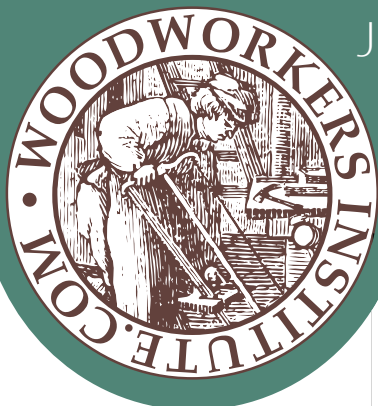
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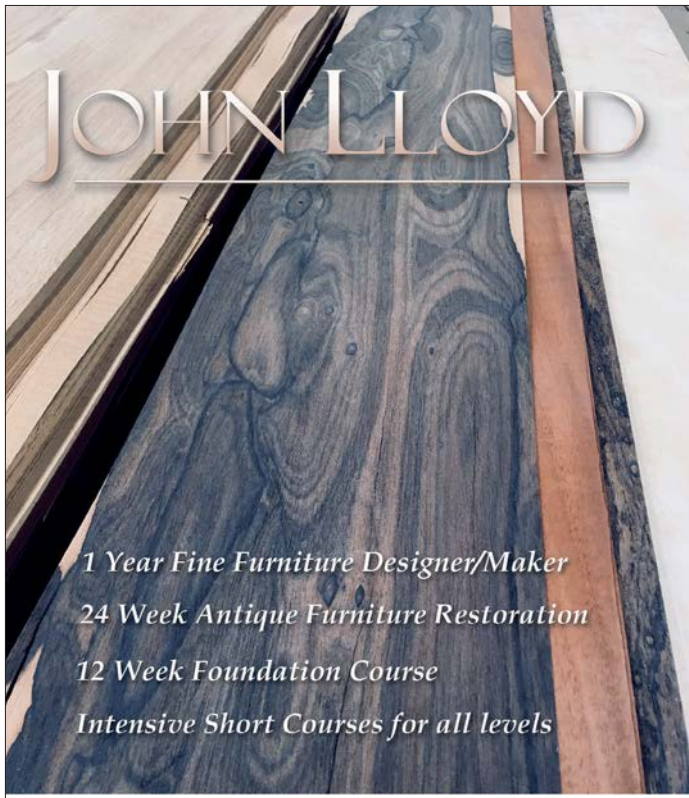


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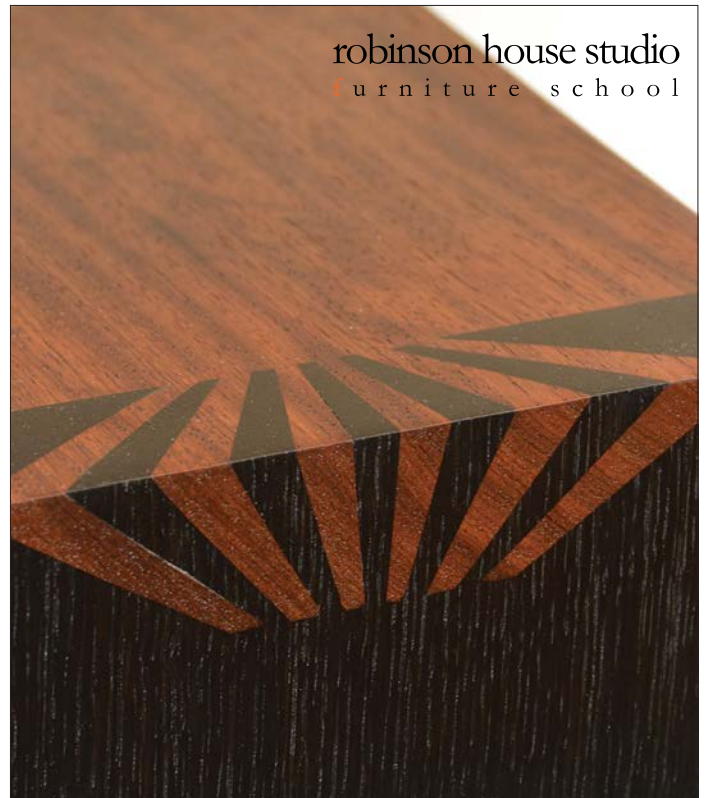


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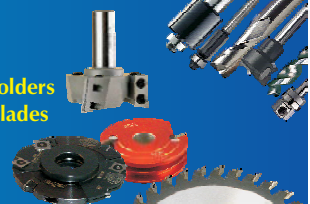


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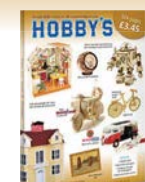
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THE MODELMAKER'S YEARBOOK



Focus on...

The strangler fig

The stuff of fiction and nightmares – a tree that takes over wherever it grows

Silent assassins

The strangler fig is a common name for a fig (*ficus*) sub-group of 12 species which have the bizarre habit of developing from often bird-dispersed seedlings in crevices high up around a 'host tree', gradually enveloping it, sending roots down and taking over as they reach for the light above. They occur in dense forests where there is intense competition for light, which is vital for photosynthesis to occur. The host tree can become overwhelmed and die, leaving a hollow core created by the interwoven trunks of the developed fig trees.

If you have ever had the opportunity to visit Ta Prohm temple at Angkor in Cambodia you will have seen at first-hand how the strangler fig can take over ancient buildings, creating a scene more like myth than reality. No wonder it has played a starring role in films such as *Lara Croft: Tomb Raider*. Although strangler figs are parasitic killers, committing arboricide on their host trees, they do in fact promote biodiversity on account of the fruits which attract frugivorous animals – monkeys, birds, bats, coatis, kinkajous, peccaries and rodents for example.

It's nice to know these weird trees do more good than harm in rainforests around the world. ■



Top : Ta Prohm temple, Cambodia
Above: A strangled host tree
Left: A trapped cherub sculpture



The strangler fig has overtaken the stone structure of Ta Prohm temple

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