

Furniture & cabinetmaking

DESIGN • INSPIRATION • PROJECTS • TECHNIQUES • TESTS • NEWS • EXCELLENCE

Engineered precision

TECHNIQUES FOR

- Multiple dovetails
- Wooden hinges
- Sliding doors



Bridge City Tool Works

Win one of three heirloom
quality layout tools

Living history

Joshua Klein explores the life
and work of Jonathan Fisher

Well oiled

Steve Koonic reveals
Osmo's best kept secret

Clarke TABLE SAWS

LEG STAND KITS
FOR CTS10D
AND CTS11
ONLY £27.59
INC VAT

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

INCLUDES
LEFT
& RIGHT
TABLE
EXTENSION

CTS10D

MODEL MOTOR BLADE EXC.VAT INC.VAT

CTS800B 600W 200mm £72.99 £87.99

CTS11 1500W 254mm £149.98 £179.98

CTS10D 1500W 254mm £169.98 £209.98

*was £185.99 inc. VAT

**BEST
SELLER**

Machine Mart

**65 SUPERSTORES
NATIONWIDE**

**WHERE QUALITY
COSTS LESS**

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

CTS14

- 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
£129.98
EXC.VAT
£155.98
INC.VAT

SHOWN WITH
OPTIONAL LEG KIT
CLKS £19.98
EXC.VAT
£23.98 INC.VAT

Clarke TABLE SAW WITH STAND

NEW

CTS16

- 1600W motor
- 250mm blade size
- 0-45° tilting blade
- Cutting depth: 73mm at 90° / 53mm at 45°

INCLUDES LEFT & RIGHT TABLE EXTENSION

FROM ONLY
£99.98
EXC.VAT
£119.98
INC.VAT

Clarke 40" WOODTURNING LATHE

Ideal for woodturning in the workshop

- 1016mm distance between centres allows for turning longer spindles
- Inc. tool rest, tail stock, drive centre, face plate & 3 chisel
- Large turning capacity of 350mm
- 4 turning speeds

CWL1000B

ONLY
£136.99
EXC.VAT
£164.39
INC.VAT

LOCKABLE
TAILSTOCK

BENCH
MOUNTED

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

CDE7B

CWVE1

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

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

MODEL MOTOR FLOW BAG CAP EXC.VAT INC.VAT

CWVE1 1100W 183 M³/h 50Ltrs £109.98 £131.98

CDE35B 750W 450 M³/h 56Ltrs £144.99 £173.99

CDE7B 750W 850 M³/h 114Ltrs £159.98 £191.98

Clarke MORTISING MACHINE

CBM1B

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

CHISELS
AVAILABLE FROM
£8.39 INC.VAT

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

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

Clarke RANDOM ORBITAL SANDER

CROS3

- Adjustable front handle improves control
- 7000-14000rpm
- INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

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

Clarke ELECTRIC POWER FILE

CPF13

- Variable belt speed
- Tilting head
- Black & Decker

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

BELT SIZE (mm) EXC.VAT INC.VAT

MODEL MOTOR (mm) EXC.VAT INC.VAT

CPF13 400W/230V 13x457 £49.98 £59.98

KA900E 350W/230V 13x455 £59.98 £71.98

Clarke CORDLESS STAPLE/ NAIL GUN

CONSN18LIC

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

ONLY
£109.98
EXC.VAT
£131.98
INC.VAT

SPARE NAILS /
STAPLES IN STOCK

ELECTRIC AND CORDLESS
MODELS IN STOCK

Clarke 18V BRUSHLESS COMBI DRILLS

CON180LI

powered by
Li-Ion

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

*was £203.98 inc. VAT

MODEL VOLTS BATTS EXC.VAT INC.VAT

CON18LIC 18V 2x 2.0Ah Li-Ion £109.98 £131.98

CON180LI 18V 2x 4.0Ah Li-Ion £159.98 £191.98

Clarke BOLTLESS SHELVING/BENCHES

150 PER SHELF

350 PER SHELF

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

MODEL DIMS WxDxH(mm) EXC.VAT INC.VAT

150kg 800x300x1500 £29.98 £35.98

350kg 900x400x1800 £49.98 £59.98

Clarke WHETSTONE SHARPENER (200MM)

CWS200B

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

ONLY
£119.98
EXC.VAT
£143.98
INC.VAT

Clarke WOODWORKING VICES

STANLEY
Record

VV7

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

MODEL MOUNTING JAW (WIDTH/OPENING /DEPTH)mm EXC.VAT INC.VAT

Clarke Bolted 150/152/61 £14.99 £17.99

CHT152 Clamped 72/60/40 £18.99 £22.79

Stanley Multi Angle Record TV75B Clamped 75/50/32 £21.99 £26.39

Clarke VV7 Bolted 180/205/78 £29.98 £35.98

Clarke 13" MINI WOOD LATHE

CWL325V

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 BISCUIT JOINTER

TC-BJ900

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

2 YEAR
GUARANTEE

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

Clarke BELT SANDERS

BS1

ABRASIVE SANDING BELTS IN STOCK

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

MODEL MOTOR M/MIN EXC.VAT INC.VAT

Clarke BS1 900W 380 £36.99 £44.39

Clarke CBS2 1200W 480 £79.98 £95.98

Makita 9911 650W 75-270 £89.98 £107.98

Clarke CIRCULAR SAWS

CON185

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

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

MODEL MOTOR MAX CUT (mm) EXC.VAT INC.VAT

COS185B 1200W 65/44 £41.99 £50.39

CPT800 1200W 60/45 £59.98 £71.98

CON185 1600W 60/40 £62.99 £75.59

Clarke PLANERS & THICKENERS

CPT800

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

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

MODEL PLANING MAX THICK. CAPACITY EXC.VAT INC.VAT

CPT800 6" 120mm £179.98 £215.98

CPT600 8" 120mm £219.98 £263.98

CPT1000 10" 120mm £299.00 £358.80

BLACK & DECKER POWER PLANERS

TE-P1850

- 82mm cutting width

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

MODEL MOTOR DEPTH OF CUT EXC.VAT INC.VAT

Einhell TE-P1850 850W 3mm £54.99 £65.99

B&D KW750K - GB 750W# 2mm £57.99 £69.99

TURBO AIR COMPRESSORS

airmaster

8/250

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

*V Twin Pump

MODEL MOTOR CFM TANK EXC.VAT INC.VAT

8/250 2HP 7.5 24ltr £89.98 £107.98

7/250 2HP 7 24ltr £94.99 £113.99

11/250 2.5HP 9.5 24ltr £109.98 £131.98

8/510 2HP 7.5 50ltr £119.98 £143.98

11/510 2.5HP 9.5 50ltr £139.98 £167.98

16/510 3HP 14.5 50ltr £209.00 £250.80

16/1010 3HP 14.5 100ltr £259.98 £311.98

Clarke HARDWOOD WORKBENCH

CHB1500

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

FROM ONLY
£149.98
EXC.VAT
£179.98
INC.VAT

Clarke DETAIL SANDERS

CDS-1V

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

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

MODEL WATTS EXC.VAT INC.VAT

PS105 105W £19.98 £23.98

CDS-1V 280W £29.98 £35.98

ALL MODELS INC. SANDING SHEETS

VAC KING WET & DRY VACUUM CLEANERS

CON300

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

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

*SS = Stainless Steel

MODEL MOTOR CAPACITY EXC.VAT INC.VAT

CVAC20P 1250W 16/12ltr £49.98 £59.98

CVAC20SS* 1400W 16/12ltr £59.98 £71.98

CVAC20PR2 1400W 16/12ltr £64.99 £77.99

CVAC23SS* 1400W 19/17ltr £67.99 £81.99

CVAC30SSR 1400W 24/21ltr £89.98 £107.98

Clarke OSCILLATING BELT & BOBBIN SANDER

COBS1

- Sand concave, convex, straight or multi-curved pieces
- Dust collection port
- Inc. 6 sanding sleeves/bobbins

PRICE CUT
NOW FROM
£129.98
EXC.VAT
£155.98
INC.VAT

MODEL SHEET SIZE MOTOR EXC.VAT INC.VAT

COS200 190x90mm 150W £16.99 £20.39

CON300 230x115mm 330W £29.98 £35.98

Clarke 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
£111.59
INC.VAT

Clarke 6" BELT/ 9" DISC SANDER

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

FROM ONLY
£239.99
EXC.VAT
£286.99
INC.VAT

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock
- Quality Induction 250W motor

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

NEW

Clarke 4" BELT/ 8" DISC SANDER

- Includes 2 tables
- 550W 230V motor

FROM ONLY
£159.98
EXC.VAT
£191.98
INC.VAT

Clarke DISC SANDER (305MM)

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

PRICE CUT
NOW FROM
£124.99
EXC.VAT
£149.98
INC.VAT

FROM ONLY
£149.98
EXC.VAT
£179.98
INC.VAT

MODEL SHEET SIZE MOTOR EXC.VAT INC.VAT

CBS1-58 305mm 900W £149.98 £179.98

Clarke SHEET SANDERS

CON300

- Ergonomic design for optimum comfort

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

*was £39.59 inc. VAT

MODEL SHEET SIZE MOTOR EXC.VAT INC.VAT

COS200 190x90mm 150W £16.99 £20.39

CON300 230x115mm 330W £29.98 £35.98

Clarke OSCILLATING BOBBIN SANDER

COBS1

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

PRICE CUT
NOW FROM
£129.98
EXC.VAT
£155.98
INC.VAT

MODEL SHEET SIZE MOTOR EXC.VAT INC.VAT

COS200 190x90mm 150W £16.99 £20.39

CON300 230x115mm 330W £29.98 £35.98

Clarke OSCILLATING BELT & BOBBIN SANDER

COBS1

- Sand concave, convex, straight or multi-curved pieces
- Dust collection port
- Inc. 6 sanding sleeves/bobbins

FROM ONLY
£179.98
EXC.VAT
£215.98
INC.VAT

BUY NOW SPREAD THE COST

- Over 12, 24 or 36 months
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- 12.9% APR, 10% Deposit*

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AND PRICE CUTS

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- ONLINE
- PHONE

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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

BEST SELLER

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

CMS10S2

BLADE MAX CUT
DIA/BORE DEPTH/
(mm) CROSS EXC.VAT INC.VAT

MODEL	210/30	60/120	£89.99	£107.99
CMS10S2	254/30	78/340	£139.99	£167.99

Clarke ELECTRIC HEATERS

DEVIL 7003

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

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	£69.99	£83.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£109.00	£130.80
DEVIL 6015	400V	5-10-15	£169.00	£202.80
DEVIL 7015	400V	15	£199.98	£239.98

Clarke BENCH BANDSAWS

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

£129.99 EXC.VAT
£155.99 INC.VAT

CBS190B

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

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

QUICK RELEASE FENCE
DRIVE-BELT TENSIONING

CBS300

FROM ONLY **£219.99** EXC.VAT
£263.99 INC.VAT

Clarke PROFESSIONAL BANDSAWS

Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table

- Table tilts 45°
- Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick
- Induction motors
- Includes stand

MODELS ALSO FEATURE:

- MULTI-STEP DUST EXTRACTION OUTLET
- FLEXIBLE LED WORKLIGHT
- REMOVABLE DUST TRAY
- BLADE TENSIONING CONTROL

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

Clarke MITRE SAWS

CMS210

• Quality Range of Mitre saws and blades in stock

• Laser Guide
• Sliding Compound

PRICE CUT NOW FROM **£54.99** EXC.VAT
£65.99 INC.VAT

• Was £71.98 inc.VAT

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

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating

DUAL VOLTAGE 230V
110V 10A 400W FROM £226.80
£79.99 EXC.VAT
£95.99 INC.VAT

• Propane Gas Fired

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

Clarke STATIC PHASE CONVERTERS

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

PC60

FROM ONLY **£229.99** EXC.VAT
£274.99 INC.VAT

CONVERT 230V 1PH TO 400V 3PH

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

Clarke CONTRACTOR ROUTERS

• Powerful heavy duty machines ideal for trade and DIY use

CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

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

CR1200

NEW

• DIY

MODEL	MOTOR PLUNGE (W) (mm)	EXC.VAT	INC.VAT	
CR1200	1200	0-55	£44.99	£53.99
CR1C*	1200	0-50	£46.99	£56.99
Bosch	1400	0-55	£89.99	£107.98
POF1400ACE				
CR2	2100	0-60	£119.98	£143.98

Clarke GRINDERS & STANDS

• Stands complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

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

STANDS FROM ONLY £47.98 inc.VAT

• With Sanding belt
• 8" whetstone & 6" drystone

MODEL	DUTY	WHEEL DIA.	EXC.VAT	INC.VAT
CBG6RP	PRO	150mm	£32.99	£39.99
CBG6R2	DIY	150mm	£42.99	£51.99
CBG6RSC	HD	150mm	£54.99	£65.99
CBG6SB*	PRO	150mm	£54.99	£65.99
CBG6RWC	HD	150mm	£59.99	£71.98
CBG6W* (wet)	HD	150/200mm	£56.99	£68.99

Clarke DRILL PRESSES

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

FROM ONLY **£66.99** EXC.VAT
£80.99 INC.VAT

CDP152B

B = Bench mounted
F = Floor standing

MODEL	MOTOR (W)	SPEEDS	EXC.VAT	INC.VAT
CDP5EB	350/5	£66.99	£80.99	
CDP102B	350/5	£79.98	£96.98	
CDP152B	450/12	£149.98	£179.98	
CDP202B	450/16	£189.00	£226.80	
CDP10B	370/12	£198.99	£238.79	
CDP452B	550/16	£229.00	£274.80	
CDP352F	550/16	£229.00	£274.80	
CDP502F	1100/12	£499.00	£598.80	

Clarke DIESEL/PARAFFIN HEATERS

• Ideal for fast efficient heating
• Extra-long run fuel tanks - up to 53 litres
• Variable heat output with thermostat control

XR80

FROM ONLY **£189.99** EXC.VAT
£226.80 INC.VAT

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

Clarke JIGSAWS

CON750 *DIY Professional

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

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

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC.VAT	INC.VAT
CJS380*	420W	55/6mm	£15.99	£19.19
CON750H	750W	80/10mm	£27.99	£33.59
Bosch PST700E*	500W	70/4mm	£49.98	£59.98

Clarke ROUTER TABLE

CR1

Router not included

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

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

Clarke ROUTER TABLE

CR1

Router not included

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

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

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

CMFT250

FROM ONLY **£39.99** EXC.VAT
£47.99 INC.VAT

Clarke SCROLL SAWS

CSS400C

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

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

MODEL	MOTOR RPM	EXC.VAT	INC.VAT
CSS400C	1200	£79.99	£95.99
CSS16VB	90W	£50-1600	£94.99
CSS400C	90W	£50-1600	£114.99

Clarke 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

CDTJ12

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

Clarke ROUTER TABLE

CR1

Router not included

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

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

Clarke ROUTER TABLE

CR1

Router not included

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

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

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

CMFT250

FROM ONLY **£39.99** EXC.VAT
£47.99 INC.VAT

Clarke SCROLL SAWS

CSS400C

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

• 50mm max cut thickness
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• Includes a 1/2" comb template guide & holes for bench mounting

CDTJ12

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

Clarke ROUTER TABLE

CR1

Router not included

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

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

Clarke ROUTER TABLE

CR1

Router not included

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

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

VISIT YOUR LOCAL SUPERSTORE OPEN MON-FRI 8.30-6.00, SAT 8.30-5.30, SUN 10.00-4.00

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DESIGN & INSPIRATION

Get inspired by the great design styles of the past, some vintage tools or plan your next museum trip



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This month we're going back to July 2001 and issue 54 for another look at Robert Reid's writing desk



Welcome to...

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...the bumper issue

Back in the day when short trousers were reserved for schoolboys only and not postmen, I'd be looking forward to picking up a bumper issue of the *Beano* or *Shoot* around about this time of year. Crammed with extra content, double features, competitions and puzzles it was about as much excitement as you could handle. Well dear reader, prepare to revisit the glory days of magazine publishing with our own cleverly disguised bumper issue. Laid out in glorious technicolour over 80 pages we've got not one, not two, but three projects for you to devour this month from David Barron, Charles Mak and David Waite. We've got a review of Osmo's best kept secret courtesy of Steve Coonick, plus a roundup of the latest auction news from David Stanley's most recent tool sale. On the tech front, I do hope you're sitting down for this next one, we've got perhaps the most exquisite alternative to using metal hinges I've ever seen from Kristian Frandsen. Kristian is a cabinetmaker from Denmark where they have a knack for engineering good taste, style and precision into everyday objects. His article alone is worth the price of an annual subscription and if you don't agree, you're wrong!

You'll find a Bridge City tool on many a woodworker's wish list so it's with a fair degree of excitement that we've teamed up with Axminster Tools & Machinery to make your dreams come true with another chance to win one of three incredible layout tools. So there you have it, issue 279, never knowingly undersold. Listen, if you can't blow your own trumpet now and again what's the point in having one.

Derek Jones

Derek Jones
derekj@thegmcgroup.com

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Exclusive to
Axminster*



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Bridge City Tool Works enjoys a worldwide reputation for designing sophisticated, highly functional woodworking tools. As leading designers in the industry, they have been innovating how to make traditional hand tools for 35 years.

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making and integrating hinges by hand

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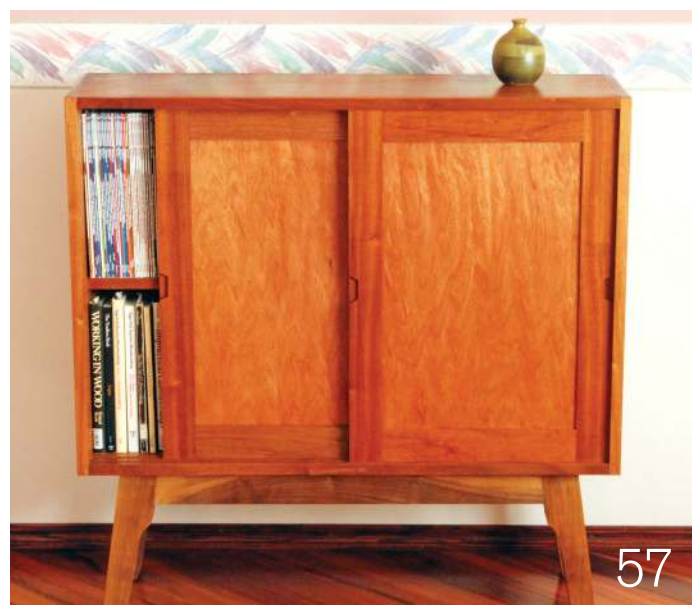
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Don't forget there are plenty more articles and discussions to be found on the Woodworkers Institute & Forums
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John began his publishing career as a graduate trainee at Cambridge University Press. He later set up a small publishing house in Cambridge under his own name devoted to highly illustrated books in the decorative arts. He is the publisher of David Russell's book *Antique Woodworking Tools*.

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David Barron

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Steve is a classically trained fine furniture designer/maker with a background in engineering. He studied under master craftsmen David Savage and Darren Milman at the internationally renowned Rowden Woodworking School of Fine Furniture, England. The founder of KOOS furniture located in north Cornwall, he is driven by a passion for design, precise craftsmanship, sustainability and endless learning.

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Kristian Frandsen

Kristian trained as an apprentice of The Royal Craftsmen at The Royal Household of Amalienborg in Copenhagen. He then studied at Capellagården (Sweden's School of Arts & Crafts) for two years. He received the Danish Arts & Crafts Silvermedal in 2015, while designing and making his masterpiece as a cabinetmaker, rewarded with the highest possible honour, the Grand Silvermedal. In 2016 he established his workshop named Snedkersind (Danish for 'a maker's mind'). He makes both commissioned furnitures and personal projects, while maintaining his interest and passion for restoration.

Web: www.snedkersind.dk



Charles Mak

With previous careers in hospital management and corporate compliance, Charles semi-retired in 2005, the same year he joined Lee Valley Tools/Veritas as a part-time Customer Advisor. He became interested in hand tools after realising that his customers were often more knowledgeable than he in traditional woodworking. To fix that, he bought many of the tools he sold, put them to use in his own shop and made mistakes until he could write or teach about them.



David Waite

David was involved in scientific research for over 20 years prior to enrolling on a one-year designer/maker course at Waters and Acland. In 2017 he decided to create the luxury hand-crafted furniture business Four Limes Design. Its remit is to create bespoke fine furniture that will last for generations.

Web: fourlimes.design

Instagram: [@fourlimesdesign](https://www.instagram.com/fourlimesdesign)



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PRINTED IN THE UK
Stephens and George Print Group

DISTRIBUTION Seymour Distribution Ltd
Tel: 020 7429 4000

Furniture & Cabinetmaking magazine (ISSN 1365-4292) is published every four weeks by Guild of Master Craftsman Publications Ltd

SUBSCRIPTION RATES (includes p&p)
UK Europe Rest of World
12 issues £51.00 £63.75 £71.40
24 issues £102.00 £127.50 £142.80
US subscribers visit www.lightningpublications.com for subscription rates in USD \$.

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Collector's cabinet

**David Barron transforms
a Georgian table into a
smart new cabinet**



A while back I inherited a nice Georgian drop-leaf table, which was sad in three ways. Firstly because I inherited it after the death of a relative, secondly the low current value of a 200-year-old piece and thirdly having to cut up 30in wide Cuban mahogany boards. Although, as the boards had cupped (the result of spending the last 25 years against a radiator) I didn't feel quite so bad when I was at the bandsaw. Given the table's condition and low re-sale value, I decided to use the wood to make a brand new collector's cabinet.

Working this fine wood with both hand and machine tools was a joy, the timber is a far cry from what gets passed off as mahogany these days. Planing the surface revealed a beautiful pale orange colour and a nice surprise was the emergence of some lovely figure on the edge of the boards, I was feeling much better! Careful planning was needed to make sure all parts came from the two leaves, there was very little left over.

The cabinet was designed to keep a military medal collection in 11 very shallow drawers with space below for reference books. These collector's cabinets were very popular with gentlemen collectors of Victorian times and ironically are now far more valuable than drop-leaf tables of the same era. Mahogany was also the wood of choice, but I wanted this one to have a slightly more modern appearance.



Georgian mahogany drop-leaf table top



Planing the edges
using a long
shooting board



All the carcass boards prepared



The cabinet was designed to store medals in shallow drawers



Dovetails

The carcass was dovetailed on all four corners, I used a 1:5 angle which was structurally suitable for the relatively soft mahogany and thin parts. My magnetic guide was very helpful in speeding up the process for all the dovetails.



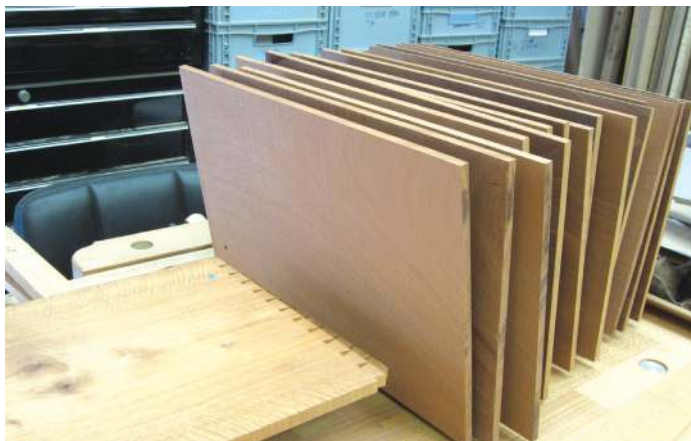
Cutting the carcass dovetails using a 1:5 magnetic guide

Drawer supports

For the drawer supports I prefer to use solid wood rather than the traditional framework; although it uses more wood it is quicker and more structurally harmonious. I re-sawn the very thin supports oversize and allowed them time to settle, although the timber was so well seasoned after all this time that there was very little movement. For the drawer support grooves there was no ideal solution. The fence travel on my router table couldn't cope with all the grooves and it was the same with the fence on a hand-held router. I worked out a method using a hand plane but stopped cuts aren't easy and I didn't fancy the work involved in making 22 grooves by hand! In the end I used the tablesaw, which allowed perfectly paired grooves on each side and took no time at all; the only downside was the grooves would pass all the way across and would show at the back of the cabinet. I thought I could live with this, but before completion I filled each of the notches with small pieces of matching wood and they were barely visible.

Gluing up

Gluing up the cabinet also required some thought. A dry trial showed that gluing all the shelf supports in at the same time would be very fiddly – not what you need when the glue is setting. I did manage to include two central supports that helped keep the sides square while the glue dried. Once set, the remaining shelf supports were inserted one at a time and squeezed in until they were flush with the front. The front of the cabinet needed to be flushed off before moving on to making and fitting the drawers. Used with care, a jointer plane would have coped with this task, but a much easier and less risky way was to use one of my large sanding boards. Normally the work is taken to the board for flattening but it was much easier to use the large board on top of the carcass. It didn't take long to get it perfectly flat and all with no risk of tearout. Andrew Crawford sells these large abrasive sheets and I got the idea of using a sanding board from him a few years ago.



Re-sawn shelf supports being allowed to settle before final planing



Grooves for the shelf supports being cut on the tablesaw



The carcass glued up, the shelf supports will be glued in later

The drawers

With the carcass done it was time to make the 11 drawers. In order to get nice matching fronts I cut 1.5mm slices (finished to 1mm) of highly figured stock on the bandsaw. I then cut through dovetails on the front before gluing on the veneers to create nice, sharp half-blind dovetails. Not only does this allow best use of the figured wood but it also makes the dovetails quicker to cut as well as giving an attractive thin lap, which would have been very risky to attempt from solid stock.

For the rear of the drawers I brought the backs in and attached them with through-wedged tenons. This rear protrusion of the sides meant that the whole of the drawer contents could be viewed without the drawer falling out, a technique that I first saw used by Alan Peters and one I've used many times since.

The contrasting maple drawer sides were individually fitted into their respective openings so that they ran smoothly but with no wobble. The front and backs were fitted slightly oversize ready to be trimmed to a fit after the drawers had been assembled. Grooves for the drawer base were cut on the router table using the top edge against the fence, this way the back piece could be trimmed off completely to allow the drawer base to slide in to a perfect fit. I also used this top edge on my dovetail alignment board so that all the grooves lined up perfectly.

For the drawer pulls I cut a groove in the middle of all the fronts on my tablesaw and fitted small pulls, which all lined up. This simple solution would not visually fight with the figured drawer fronts.



Shooting the drawer parts to fit



Using my large sanding board to get all the parts flush



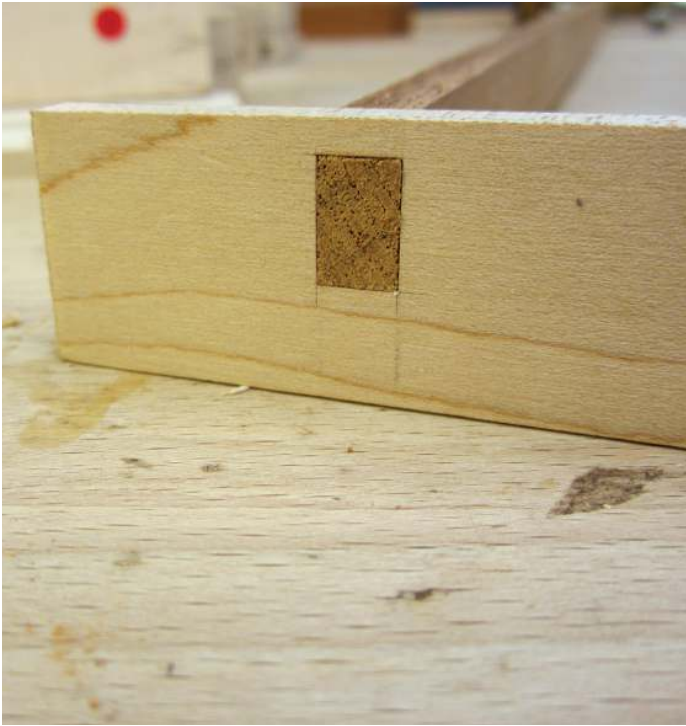
All the sides fitted in their openings and numbered



Bandsawing the drawer fronts from figured stock



The bulk of the waste removed for the mortises in the sides



Test fitting the tenon which will be wedged later



Gluing on one of the false fronts with plenty of clamps



Cutting the mortises for the bridle joints on the bandsaw



Cutting the tenons, with the same fence setting, using an offset board

Door joints

The door had bridle joints on the corners, which I made on my bandsaw using a carbide-tipped blade for a smooth cut. Keeping the fence in the same position I inserted an offset board, the exact width of the bandsaw blade, which allowed me to cut the tenons to a perfect friction fit. The centre panel was book-matched from the last of the figured stock and the rear panel had multiple book-matched strips of figured veneer attached to finish it off nicely. I fitted a good quality lock but made my own small keeper (to match the carcass width) from some brass plate.

Finishing touches

I lined all the drawers with some lovely soft burgundy pig suede (again from Andrew Crawford) and used some 0.75mm thick card and plenty of double-sided tape to make a neat job. The suede has a nap that looks much darker in one direction than the other, so I took care to make sure the nap ran the same way for all the drawers.

The inside of the cabinet was finished before assembly with two coats of shellac sanding sealer followed by wax. The shellac gives a nice sweet smell to the interior and the wax greatly assists in cleaning off any glue squeeze-out. After experimenting with various finishes for the exterior I decided the shellac/wax combination gave the best result here as well. I used three coats of shellac sanding sealer on the outside, gently cutting back with 320 grit between coats, then waxed with a high carnauba content wax which dries hard and prevents any finger marking.

The whole project took more than 100 hours' work and it was a pleasure to give this wonderful mahogany a new lease of life. *F&C*



Lining the drawers with burgundy pig suede

News & Events

Contribute to these pages by telling us about matters of interest to furniture makers.

Call Derek Jones on 01 273 402 843 or email derekj@thegmcgroup.com

Please accompany information with relevant, hi-res images wherever it is possible

PHOTOGRAPH COURTESY OF THE WOOD AWARDS



Wood Awards 2018 winners announced

The winners of the annual Wood Awards were announced at a ceremony held on 20 November at Carpenters' Hall in London hosted by David Hopkins, Director of the Timber Trade Federation.

In the furniture and product categories, the Bespoke award went to CLEFT, a series of cabinets made from Japanese timbers. The cabinets were designed by Peter Marigold, working with Adanori Tozawa of woodworking manufacturer Hinoki Kogei. Edward Barber and Jay Osgerby's Ballot Chair won the Production category. Ellen Svenningsen from the Building Crafts College was

named the best Student Designer for her piece Objekt Bord, while Ben Smith, also of the Building Crafts College, won the Student Designer People's Choice Award for his Super Desk.

The Wood Awards is the UK's premier competition for excellence in architecture and product design in the world's only naturally sustainable material. The Awards aims to recognise, encourage and promote outstanding design, craftsmanship and installation using wood.

Contact: The Wood Awards Web: woodawards.com

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Edward Barber and Jay Osgerby's Ballot Chair design won the Production award

PHOTOGRAPH COURTESY OF THE WOOD AWARDS



Ellen Svenningsen won the Student Designer award for the Objekt Bord

PHOTOGRAPH COURTESY OF AXMINSTER TOOLS & MACHINERY



Matt Estlea demonstrating at the Open House

Open House at Axminster Tools & Machinery

Over 200 visitors attended an Open House at Axminster Tools & Machinery's HQ in Devon. Visitors were able to experience around 40 demonstrations and get hands-on with many tools and machines. Among the demonstrators were familiar names such as box maker Robert Ingham; Peter Parfitt, inventor of the UJK Parf Guide System and Parf dog; woodworker Matt Estlea and woodturner Colwin Way. Approximately 160 visitors signed up for the guided tour around the site. An Axminster director led each tour, taking visitors to the engineering facility where woodturning chucks and accessories, bandsaw blades and many products in the UJK Technology range are manufactured. Proceeds from the day were donated to the British Heart Foundation.

Contact: Axminster Tools & Machinery
Web: www.axminster.co.uk

Nellie's Tree crowned UK Tree of the Year 2018



PHOTOGRAPH BY ROB SPANNEY/THE

Nellie's Tree will represent the UK at the European Tree of the Year Award

Nellie's Tree, a beech tree in Garforth near Leeds, was named UK Tree of the Year after winning a public vote against the national winners from Wales, Scotland and Northern Ireland, run in conjunction with the BBC's *The One Show*. It is known as the 'Love Tree' by locals due to its romantic history. Nearly 100 years ago, Vic Stead would walk from his home in Garforth to visit his sweetheart Nellie, who lived in the nearby village of Aberford. One day, he came across three beech saplings on his route, and grafted one sapling between the other two to form the letter N, for Nellie. Nellie's Tree will now be put forward as the UK's entry for European Tree of the Year, which will run in February 2019.

Contact: The Woodland Trust
Web: www.woodlandtrust.org.uk

Events

Information correct at time of publication,
check websites before planning your visit

The January Furniture Show

The January Furniture Show gets the new year off to a great start by revealing the newest launches and freshest trends at the UK's largest furniture event. Over 500 exhibitors will be at the show, ranging from the biggest brands to emerging designers, and offering a comprehensive mix of classic and contemporary furniture, flooring, lighting and accessories.

When: 20–23 January
Where: NEC, North Avenue, Marston Green, Birmingham B40 1NT
Web: januaryfurnitureshow.com

Start the year by discovering the latest trends at The January Furniture Show



PHOTOGRAPH COURTESY OF THE JANUARY FURNITURE SHOW

Top Drawer

Top Drawer is the UK's leading retail trade event, showcasing a curated edit of over 1500 brands. This year's show includes a brand new sector, Home Grown, featuring design-led and innovative products from leading UK designers and brands.

When: 13–15 January
Where: Olympia London, Hammersmith Road, Hammersmith, London W14 8UX
Web: www.topdrawer.co.uk

imm cologne

Trendsetters and creative newcomers will present the innovations for the coming year at imm cologne, the international interiors show in Cologne. All the major innovation drivers, market leaders and brands will be there.

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Where: Koelnmesse, Messepl. 1,

50679 Köln, Germany
Web: www.imm-cologne.com

The AIS Furniture Show

Organised by buyers with a wealth of experience in the independent sector, The AIS Furniture Show offers a commercial mix of brands, making the show perfect for independent retailers.

When: 18–21 January
Where: Cranmore Park Conference & Event Centre, Cranmore Avenue, Shirley, Solihull, West Midlands B90 4LF
Web: www.thefurniture-show.co.uk

Maison & Objet Paris

At this trade fair in Paris, the Maison sector features the best decoration and home interior solutions organised by style, while Objet showcases the best objects and decorative accessories

organised by product category.

When: 18–22 January
Where: Parc des expositions Paris Nord Villepinte, ZAC Paris Nord 2, 93420 Villepinte, France
Web: www.maison-objet.com/en/paris

The Winter Decorative Antiques & Textiles Fair

More than 150 dealers from the UK and Europe will take part in the Winter edition of the Decorative Antiques & Textiles Fair, bringing a beautiful variety of antique and 20th-century design drawn from sources around the world. On sale will be furniture, lighting, textiles, ceramics and porcelain dating from the early 1700s to 1970.

When: 22–27 January
Where: Battersea Evolution, Battersea Park, London SW8 4NW
Web: www.decorativefair.com

W18 show report

Anthony Bailey visits the UK's largest trade woodworking exhibition where machinery, components and materials come together under one roof



The 'W' Exhibition Joinery & Furniture Manufacturing Show held every year at the NEC Birmingham is THE woodworking industry trade event. It is a biennial event so this was W18, next time it will be W20. Anyone who works in the industry or has links to it, can apply for tickets as it is not a public event. However, it does give us a really important opportunity to see what is happening in the woodworking industry, which like any other industrial sector is changing all the time. Yes, there is lots of big, very expensive kit on display and in operation, thanks to the NEC's ample power supply and specially installed extraction system, but there are also many smaller stands showing off equipment and processes suitable for small furniture and joinery businesses to see and try out.

There was everything from large-scale CNC panel shaping machines, five-sider moulding lines and edgebanders and board handling, down to table and dimension saws and

planer thicknessers. This year saw the introduction of Elements, a complementary part of the show devoted to panel products, surface finishes and fittings. Since they are part of a manufacturing process their inclusion is an important step in the right direction. I found all the stand staff very friendly and keen to engage and discuss their products and applications. There was also the Blum movie theatre where you could sit and rest weary feet while learning about their products and applications, as well as refreshment areas around the Hall. There were many familiar names such as SCM, Trend, Festool, Mirka, Axminster and Felder and many other industrial players such as Kundig sanding plant, Weinig moulders, Altendorf dimension saws, Masterwood, various extraction companies and a lot of eco-based solutions for dealing with wood waste, pelleting, recycling pallets, etc. Too many names to mention here, but if you want to find out more visit: www.wexhibition.co.uk



PHOTOGRAPHS BY ANTHONY BAILEY/ONIC PUBLICATIONS

FIESTA appoints operations manager to help businesses access training

Louise Sugars has been appointed as the operations manager of Furniture and Interiors Skills Plus (Skills Plus).

In July the Furniture and Interiors Education, Skills and Training Alliance (FIESTA) entered into an agreement with the Apprenticeship Management Group to launch Skills Plus to support furnishing businesses of all sizes to recruit and manage apprentices.

Skills Plus offers businesses a great specialist apprentice recruitment service, Apprentice Training Agency (ATA) and Levy Management Company.

Louise, an experienced manager with 12 years working in training and five years as a specialist recruitment manager, has been appointed to support companies to fulfil their training requirements for all manner of disciplines, from traditional making to retail, sales, marketing and other business areas, through Skills Plus.

Louise has extensive knowledge of all aspects of training available to support and enable development of employees in the workplace. She has worked as an assessor, internal verifier, operations training manager and a recruitment/apprenticeship manager who supports apprentices in their workplace and throughout their apprenticeship.

Commenting on her appointment, Louise said: 'The opportunities available to the furniture and interiors industry to strengthen and encourage the knowledge and development of all their employees in the months and years ahead is fantastic. The introduction of the new Apprenticeship Standards, which support learning and development in every aspect of our businesses from Textile Production and Wood Manufacturer through to Sales and Team Management, offers scope for every member organisation.'

'As the operations manager for Skills Plus, I am looking forward to working with companies from industry and recruiting new starters to help build your organisations and support you to pinpoint the best training for your existing workforce.'

Gary Baker, chairman of FIESTA, said: 'We are delighted to be working with the Apprentice Management Group to provide Skills Plus as a service, and very pleased to have Louise in place to drive this forward. Skills Plus is a pathway for employers to recruit and develop the skills of the next generation. Companies that sign up to Furniture and Interiors Skills Plus will receive advice and guidance on the best training that is available to the sector.'

'Through Furniture and Interiors Skills Plus, micro and SME non-levy paying employers will be able to access a much wider selection of funded skills training, while large



Skills Plus offers specialist training and recruitment

employers can outsource the apprenticeship management to obtain best value for money and real time monitoring from their apprentice levy digital accounts.'

Services available through Furniture and Interiors Skills Plus include:

Apprenticeship Training Agency (ATA)

This service is ideal for smaller companies that are not currently Apprenticeship Levy payers i.e. payrolls of £3m or less. However, it is also an attractive system for levy paying organisations wishing to employ entry level apprentices, as it allows them to dedicate their own levy pot to upskilling existing staff.

The Furniture and Interiors Skills Plus ATA will qualify as a levy payer so it can recruit and employ the apprentice on behalf of the host member. The ATA oversees all the administrative aspects of the apprenticeship, providing ongoing HR and training support, sourcing and contracting with training providers and funding agencies, and undertaking performance management reviews. The ATA also applies for relevant incentive payments on the host's behalf, which can be used to offset their costs, outlined below.

The host company pays a 10% contribution towards the cost of the training course – normally between £20 and £50 per month for 12 months or so – and a small management fee based on the apprentice's monthly salary.

Levy Management

This is aimed at larger levy paying companies that directly employ one or more apprentices. While such companies are able to contract directly with a training provider, last year's

reformed system transfers ownership of apprentices from training providers to employers. This is intended to improve the quality of training, but it will also put a great deal more responsibility on the employer.

The AMG Management Service essentially takes over these responsibilities. For a small monthly fee, this service will source and contract the training provider and negotiate the cost of apprenticeship training as well as the cost of end point assessments. It will also manage and monitor monthly payments to training providers and claim additional learning support and employment incentives on the employer's behalf.

The service can be used for both new apprentices and existing employees who are being upskilled. If required, Furniture and Interiors Skills Plus will also help companies to recruit suitable apprentices by placing advertisements, pre-interviewing and shortlisting candidates.

For more information about Skills Plus, visit: www.fiestalearning.com/furniture-interiors-skills-plus/



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Online video **LEIGH**

All you need is wood – making and integrating hinges by hand

**Kristian Frandsen creates subtle yet stunning wooden hinges
– simple in appearance, yet difficult to accomplish flawlessly**



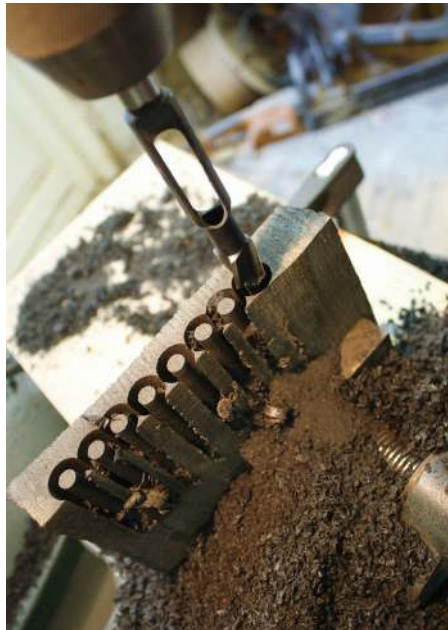
PHOTOGRAPHS BY KRISTIAN FRANDSEN/SNECKENSD

When creating bespoke pieces of furniture you'll often find yourself having to choose hardware made out of brass for the hinges and locks. Beautiful as they are when of proper quality and fitted with care and skill, these brass hinges often stand out from the rest of the piece to some degree, never being totally integrated as if the wood and brass had 'grown' together. In this article I'll share my process for creating wooden hinges for a piece named MoOn, which was made entirely from genuine 3500-year-

old bog oak. To the best of my ability I'll share the methods I have developed for achieving a satisfying result. Looks can be deceiving, in this case with an appearance that seems simple, yet requires focus and a steady hand in order to achieve a flawless result, all combined with a mechanism that you'll be intrigued to interact with over and over again. Once you have mastered this, you will have a wide range of options in designing your piece, ranging from material selection to diameter and the final length of the hinges.

Making the dowels

Once I've reached the stage of a project where hinges are to be made and installed, I turn to the drill press. I use a very sharp 8mm dowel-cutter for this part, making sure that the piece is in a vice that makes it easy to move from one cut to another. Descending into the endgrain, I run at medium/high rpm, diving very slowly without too much friction that will overheat the wood. Once at the bottom I'll turn off the machine before raising the bit, leaving me with a very clean dowel of 8mm in diameter. I place it so that the cutter is partly off-set from the piece, making it easy for shavings to escape and not mess with the consistency of the dowel's diameter. This is a simple but important part of the entire process, since the hinge will look and feel no better than the surface of my dowels. From here I cut the dowels free at the bandsaw, leaving me with a bucket of liquorice-looking wood goodies. I always make more than I need, it only takes a minute or two but might save an hour if something goes wrong later in the process.



The dowel cutter is run close to the edge of the board to allow the waste to exit freely and avoid overheating



The result should be a collection of consistently round dowels without faults or deviation

Getting into the groove



A core box cutter of the same diameter as the dowel cutter is also required



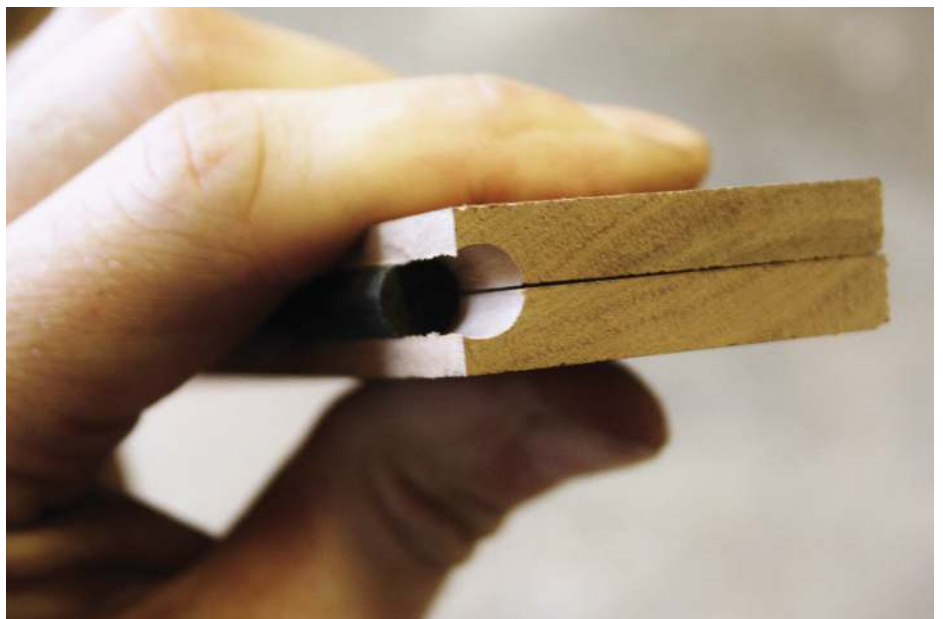
Prepare several blanks to use as test pieces and templates for holding the hinge components later



Fit a sacrificial fence to the router and slowly raise the core box cutter into it

Routing the half-round groove for the hinges in both the base and lid requires some test pieces. I've made some in walnut that measure 120 x 50 x 10mm. These are used for finding the proper depth and width of the groove, but will also be used later in the process for cutting the dowels to final length and avoiding tearout in the process.

I start by eyeballing the fence to a width I find suitable. I then raise the 8mm core box cutter up while turned on, into the fence. It is vital that the cutting part of the bit is supported at the fence, if not, I get some ugly tearout on the base and lid, since the groove being cut will leave me with a very thin edge. This edge needs to be supported by the fence when routing to achieve a satisfying result when assembling the final work. Both the depth and width need to be carefully planned and found, ideally by sketching a cross-cut of the work to see how far in I should go. I want a depth that leaves me with a tiny gap of air when two pieces are laid together with a dowel inside. This will guarantee a lid that closes fully. If there



Experiment with a combination of height and depth settings for the cutter to achieve a channel that contains the dowel but also leaves a small hairline gap between the leaves

is no air, the lid will jam before closing when everything is glued. I must also pay attention to the width of the groove since there will be small 2mm wide brass pins centred in each dowel, joining all the dowels to one another, creating the hinge mechanism. If the hinge is too far out, I'll end up exposing the brass pins when flushing the hinges after gluing, and will ruin everything that I have worked for up until then. I will highlight this part later in the article.

When the test pieces have done their part, I run the actual pieces through the setup, always having a scrap piece at the end of each pass to help prevent any tearout or deviation in the channel. Once routed, I try not to touch any loose fibres attached to the groove, this should not be cleaned before the hinges have been glued in order to achieve the best result.



Resist the temptation to clean the channel after it has been machined as it may affect the fit later on



You need only machine one edge of the box for a single hinge design

Cutting the dowels to size



Calculate the number of dowels required for the hinge and make up a depth stop jig with one of the templates



Use one end of the jig to clean cut one end of each of the dowels



Cutting into the jig will help to prevent breakout and furring of the edges

I now measure out the entire length of the hinge required. I divide this number by the number of dowels I need, in this case I chose five dowels. If we say the entire length is 200mm, I'll cut five dowels into 40.5mm. When everything is glued up, the hinge will be slightly longer than required, but it is better to have to remove a bit than to have a bit missing.

I now mark this length onto one of the saved test pieces from earlier, gluing in a 'stop' that will make each dowel the same length when cutting. At the tablesaw I cut one side of all the dowels clean before switching over to the 'stop' side, cutting all dowels into the same length. The test piece that has been converted into a jig ensures that no tearouts will occur since the dowel is supported around the entire surface.



Use the 'stopped' end of the jig to finally cut the dowels to their finished dimension

Bullseye at the drill press

It is now time to set up a jig at the drill press for the centred 2mm holes in each dowel that will accept the brass pins, creating the hinge mechanism. I've seen many go about this with a turned fixture at the lathe made from either very dense wood or metal. I'll try to explain and justify my approach for using the drill press.

A key aspect in this part of the process is not to move the lower layers of my work. This involves the block of wood fixed in the vice, which should also be clamped to the table of the drill press. I start by drilling an 8.1mm hole in the block of ash that is fixed in the vice, this is to hold the dowel vertically – making it too tight would risk breaking dowels in the process. I then clamp a piece of very dense wood to the ash, in this case a piece of yellow satinwood. I drill a 3mm deep 8mm wide hole into the satinwood. Next I change to a 2mm drill bit with everything else left untouched, this bit I run all the way through the satinwood. This piece of satinwood is now my fixture/guide for the 2mm drill bit once going into the end grain of the dowels. I measure out for a proper depth, making it so that the 2mm

bit goes about 5mm deep into the end grain of the dowel. Now it is all about repeating the process of mounting the dowel into the white ash, fitting the satinwood-fixture on top of the dowel like a hat and gently driving the 2mm bit into this. By doing so I find there is less risk that the drill bit may stray off course, since the satinwood will support the drill bit from the second it enters the end grain. Hitting bullseye in this process is very important since the slightest offset will seem a lot larger when two parts turn around their centre. In my experience the wood may play a trick or two depending on which type of wood being used. The medullar rays in oak love to guide the drill bit into its softer pores, while boxwood is very gentle with its tight, homogeneous fibres and surface, but that is a part of what we should appreciate about wood, the diversity. I remember only to drill at one side of the dowels that will be at the end of my hinges, no brass pin will go into those. I then cut enough 9mm long 2mm wide brass pins to assemble the dowels into a whole hinge. I sand these with sandpaper at grit 600 since I don't want to remove any material, but simply prepare the surface as much as possible before gluing.



Drill an oversize hole in a block of hard wood to hold the dowel; 8.1mm dia in this case for an 8mm dowel



Drill a 2mm hole through a separate piece of dense close grain hardwood to make a guide block



On the same centre, drill an 8mm hole partway through the hardwood guide block



The guide holes can become worn so make more than one and mark them accordingly



Place a dowel in the holder and position the guide block over the end of the dowel



The guide block will now steer the drill bit onto the centre of the dowel



A batch of components ready for assembly with a few spares just in case



Cut the brass pins and assemble a set of components to make up a complete hinge



When assembled, lightly sand the hinge with a fine abrasive to key it up for gluing

Preparing and gluing the hinges

When all of the hinges are matched and sanded I turn my attention to the grooves. I start by marking the distance between each section of dowels, which tells me where to put glue and where not to. I want to glue every second dowel to the base, and the rest to the lid. I then apply wax to those sections within the grooves that are not to be glued. I run wax slightly across the borders at which the dowels meet, this way there's less risk that excess glue will run into the section next to it and jam the hinge when applying pressure with the clamps. It is vital to apply just the right amount of glue here, I want enough to strengthen the surfaces that are glued, but avoid squeeze-out that runs into the section next to it or into the interior of the piece. Below you can see how the components look just before applying



Apply wax to the areas in the channel that do not require gluing and allow a little overspill in case of excess squeeze out

the glue and mounting the hinge. The darker section is where wax has been applied, while the bright ones are ready for glue. My apologies that the base and lid aren't aligned in the picture, but you get the idea I'm sure.

Next I apply glue to the non-waxed areas, followed by fitting the hinge consisting of five dowels with brass pins inserted. I aim to put light pressure from all directions when clamping, especially along the entire length of the hinge. I also consider putting a light pressure with hands on both ends of the hinge when applying the first couple of clamps. This is to guarantee zero tolerance in between the dowels while giving a good 'feel' to the entire hinge mechanism. I aim for a lid that feels smooth yet strong, not sloppy and worn out.



Clamping the hinge in place may require some hefty blocks and support boards to locate the parts accurately

Flushing the hinges

The work of the previous stages should pay off now. When the glue has set I remove the clamps, and gently check that the lid opens and close without too much friction or trouble. You can choose to leave the hinges as they are, or flush them to the surface. I normally go with the latter, the function and strength should be the same either way.

I flush the hinges using a small handplane, passing the surface until I'm about 0.5mm above. I then use 240 grit sandpaper or similar applied to a flat surface for the remaining part. I finish by opening the lid to see if everything looks as it should. The process of making the wooden hinges and integrating them has now come to an end, and you proceed to whatever the next stage may be in your project. For the illustrated piece named MoOn, I continued sanding and raising the fibres until ready for applying the finish.

I have now written a great deal on something that to me is usually done 'wordless'. If somewhere along the way you began to feel intimidated by the amount of words or explanations, just remember that it ain't rocket science. If it feels good in the process, then you're probably on the right track. To me woodworking is the very essence of learn-by-doing. You cannot read your way into skilled hands, they'll only get better by interacting with the material and techniques again and again. *F&C*



You can either leave your hinges in the round state...



... or flush them off with the outside of your box



From the outside the hinges are hidden until the lid is opened

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Product test: Osmo Extra Thin – is this Osmo's best kept secret?

Steve Coonick reviews a hidden gem for furniture makers

Like many, my first experience with Osmo Oil was to use it on flooring. Nearly 15 years ago I had the unenviable task of laying an expansive hardwood oak floor in my family home, which I was renovating. At that time many people I spoke to for advice were choosing to use oil-based polyurethane as a finish; although these finishes are tough and long-lasting, I had heard reports of problems with cracking and yellowing. Also, oil-based polys have a higher VOC content and strong odour during application, which is not ideal in a family home. So, the search began for alternatives and this is when I discovered Osmo.

Osmo was not a new player in the UK, in fact they had established themselves here back in 1990, but they were not yet a household name, so were new to me. For this project I chose to use Osmo's Polyx®-Oil, known at the time as 'The Original Hardwax-Oil'. Osmo Polyx®-Oils are developed from natural oils and waxes to provide hardwearing and durable protection for wood. The microporous nature was also a big plus for this product. I have always liked finishes that work 'with' the wood and this product provided a surface that did not crack, peel, flake or blister. Osmo's use of natural plant oils and waxes (sunflower oil, soya oil, thistle oil, carnauba wax and candelilla wax) made me feel comfortable about using this product in my home.

Osmo for furniture

Why you ask, do I mention my historical relationship with Osmo? Well since this first positive experience I have always associated Osmo with flooring; for many years I never considered using Osmo on furniture and instead stuck to the more traditional finishes such as Danish, linseed and tung oils as well as shellac and pure waxes. It was only when about two years ago I was admiring a piece of furniture made by a friend that I discovered there were some makers who had chosen to use Osmo to finish their work. Of course, this makes perfect sense. Osmo is after all an oil/wax product designed for wood, but my long-term association with this as a flooring finish had blinded me to the possibility of using it on my furniture.

At this point I decided to proceed with



PHOTOGRAPHS BY STEVE COONICK

caution and experiment with Osmo Hardwax oil (now rebranded as Osmo Polyx®-Oil) on various timbers to ascertain if indeed it could be used on furniture. The results were good and for certain projects I could see that Osmo Polyx®-Oil would be a viable alternative to more traditional finishes. However, in some cases it did not give me the deep and luxurious finish I desired.

The advantages of Osmo Extra Thin

Osmo have a vast range of products and with some further research I unearthed one that was specifically developed with us furniture makers in mind, Osmo Wood

Wax Finish Clear Extra Thin (1101). I naturally assumed that this must be a new product recently developed by Osmo for the demands of the modern designer and maker of fine furniture. However, this was Osmo's original oil which was developed back in 1978! I could not believe that so many people knew about and were using Polyx®-Oil, but no one I spoke to had ever heard of this product which appeared on paper to be much better suited to the demands of the cabinetmaker. This really was Osmo's best-kept secret! I immediately ordered a tin and started to experiment.

Osmo's Extra Thin is a clear, satin wood finish that combines the advantages of natural oils and waxes in one product. Extra Thin is stain-resistant, water-repellent and



Using a Scotch pad to apply Osmo



Applying Osmo to cherry



Applying Osmo to oak

abrasion-resistant. In my opinion the use of plant ingredients creates a more even colour and more balanced appearance. Like Polyx®-Oil, it has a microporous surface. Resistant against staining from wine, beer, cola, coffee, tea, fruit juice, milk and water (in accordance with German standard DIN 68861-1A), the surface is suitable for all interior applications. The dry finish is safe for humans, animals and plants (resistant to saliva and perspiration according to German standard DIN 53160-1 and suitable for children's toys according to European Standard EN 71-3).

Due to its water-repelling qualities, Extra Thin is especially well suited to use in rooms of high humidity (kitchens, bathrooms, swimming pools, etc.). It is also particularly suited to the treatment of hardwoods rich in extractives (the waxes, fatty acids, resin acids, and terpenes of a tree), such as meranti, wenge and merbau.

As its name suggests, the Extra Thin product has a low viscosity compared to most other penetrative products within the range. This product's characteristics facilitate penetration in to timbers that have a dense grain or are rich in natural ingredients, oils and resins. Osmo Extra Thin can be brushed, wiped, dipped or sprayed. My preferred method of application is the use of a 600 or 1200 grit scotch pad – these pads hold significantly more oil than a cloth and the slight abrasive quality helps work the oil into the fibres of the wood. If you do prefer a cloth application, Osmo have recommended that the user would need to apply three coats due to the low levels of oil that are deposited in a cloth application.

To get the best level of surface protection against wear, it's important to get an adequate quantity of a hardwax oil into the surface of the timber so that there is a thin build-up of hardwax upon the surface. The natural hardwax will bond to the fibres in the timber to give you a hardwearing layer once cured. The finishing grade of the timber dictates how easily the product penetrates into the surface; high sanding grades will tend to close cut the timbers very short and



Applying Osmo to wenge

close the surface down. To get the best level of protection against wear and water-repellency, sanding to a finishing grade of a P220 grit will help absorb the product more effectively. If you choose to use higher grades, as I often do, working the oil into the surface becomes essential.

The first coat should be applied thinly and massaged into the surface. Osmo's recommendation is to apply and keep the surface 'wetted' with the product for 30 minutes, more oil may need to be applied to areas of high absorbency (dry spots). After 30 minutes, wipe off the excess then allow to dry with plenty of ventilation. If possible, apply the first coat to all sides before installation/fabrication as this will allow better/even drying. Applying onto internal surfaces with reduced airflow will result, in my experience, in significantly increased drying times.

Osmo recommend a single coat of oil for furniture, but I have found that a deeper lustre can be achieved if a very thin second coat is applied after 24 hours. Of course, if a satin finish is desired then a one-coat application is sufficient. Drying time is stated as 12 hours, but in the UK I have found that leaving it for 24 hours should guarantee that the product is dry and can be recoated without issue. Like many other brands, an oil's full cure time differs



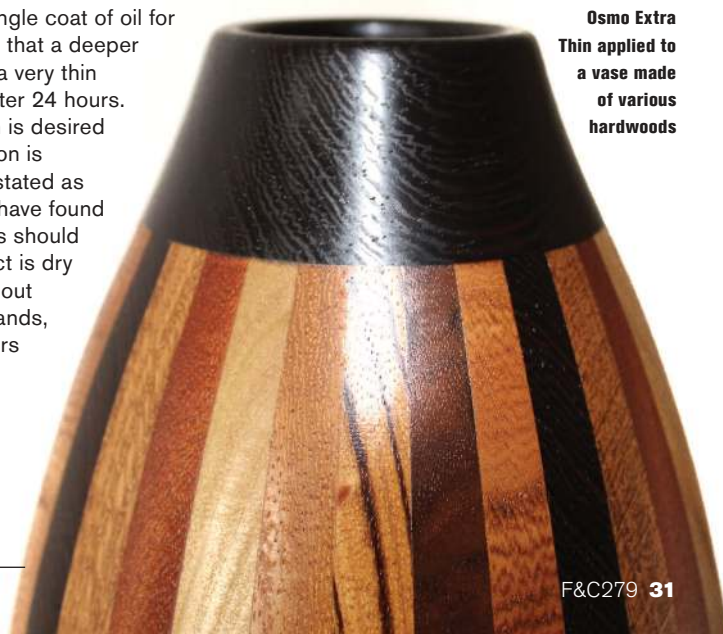
Buffing with a towel

from its drying time. If you're using this product in a wet room or bathroom, I would recommend allowing oil to cure for a longer period before delivery/installation.

Conclusion

In general, Osmo oils are extremely versatile, they are easy to apply and give a satisfactory finish. When it comes to fine furniture, in my opinion, Osmo Extra Thin is superior to other similar products in Osmo's range. Its ability to be used with native and exotic species give it the edge over other products. It is hardwearing, water-repellent and deep penetrating so will give a long-lasting high-grade finish, which is also easy to 'refresh' if a piece is damaged or worn. This finishing oil turned 40 years old in 2018 so this product has pedigree, it has a proven track record and will stand the test of time. *F&C*

Osmo Extra Thin applied to a vase made of various hardwoods



Osmo Extra Thin

Price: From £51 for 2.5L

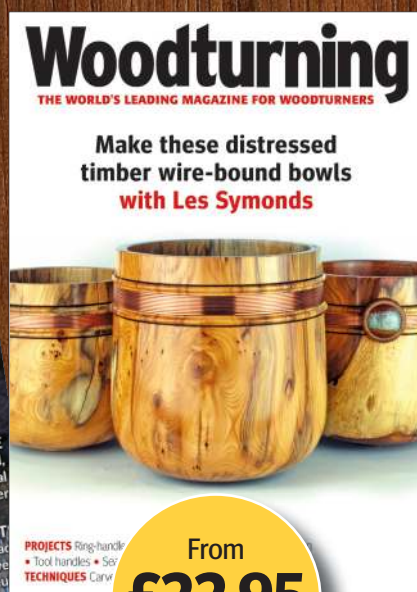
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UNDER THE HAMMER:

The Oak Interior

We take a closer look at some of the chairs and settles sold at the Bonhams auction

Bonhams' unique Oak Interior auctions include 16th-, 17th- and 18th-century carpenter-made and joined early vernacular furniture, often from single-owner and private collections. Sales include refectory tables, panel-back armchairs, coffers, side tables, chests of drawers, back stools, joint stools and Windsor chairs, made from a variety of timbers including ash, elm, fruitwood, oak, walnut and yew.

Related works of art, including treen, metalware, carvings in wood and stone, textiles and folk art-related items, are sold alongside furniture in a sale that caters for both connoisseur collectors and clients wishing to re-create period interiors.

Auctions take place at Bonhams' New Bond Street auction house twice a year. Here, we're focusing on some of the top lots sold at the September 2018 auction.



£25,000

An exceptionally large and documented Charles II joined oak 10-leg refectory-type table, made ca 1660. The impressive top is formed from three planks, fitted in two sections, one 665.5cm long and the other 171.5cm long. The table has a plain frieze with an applied ovolo-moulded lower edge rail, on inverted-baluster-turned legs, joined by a robust plain stretcher all round. This table was once part of the collection at Rufford Abbey in Nottinghamshire.



£2125

A joined oak court cupboard, with a rare 'concealed' drawer, made in Lancashire, ca 1700. The upper section has an acorn pendant frieze, enclosing a pair of lozenge-carved panelled cupboard doors, centred by a fixed panel carved with a highly stylised plant. All the rails are carved with tight S-scrolls, and the scroll motif is continued on a concealed drawer integral with the open shelf. The lower-section has a pair of twin-panelled cupboard doors, each panel is carved with a cable-carved lozenge, centred by a stylised leaf quatrefoil and bordered by incised fleur-de-lys motifs, with the exception of the scroll-carved top rail. All rails have run-mouldings, on extended stile supports.



£5000

An interesting Charles II joined oak and elm side table, made ca 1680. It has a two-board end-cleated top and the edge-moulded frieze drawer has an applied rectangular and button boss. This design is repeated on the applied front rail mouldings and upper leg blocks. The table is raised on block and ball-turned legs, which are joined by a ball and fillet-turned fore-rail and plain low side and rear stretchers.



£8750

An unusual mid-17th-century joined oak, parquetry and marquetry-inlaid court cupboard with an open base, made in Yorkshire, ca 1650. The single-piece top board has a cushion-moulded and lunette carved lower edge-rail. The frieze is inlaid with scrolling flora, centred by an applied female mask with flowing hair and paired moustached and bearded male corner masks. The cup-and-cover end-columns are each gadrooned with over palmette carving, enclosing a canted cupboard with a central door, both sides with floral inlay, and with further detailed inlay to the central door board including the addition of two birds. This is framed by deeply carved and angled rails. The front uprights are carved with a male and female term, headed by dentil mouldings, and with bold carved egg-and-tongue base rails. The lower-section has a chequer-banded rail above a cushion-moulded and carved frieze drawer, above an unusual open undertier, which is enclosed by a twin-arcaded front. Each arch is carved with alternate lozenge and flowerheads and raised on baluster-profiled pillars with long-haired mask capitals, and spaced by impressive full-height terms, their facial features repeating the frieze masks. These are all set within inlaid rails, each side with a similar carved arcade. The front of the rear back uprights are carved with leaves, the base rails are lunette-carved.



£6875

An unusual Charles II joined oak and inlaid cradle, made in south-west Yorkshire/East Lancashire, ca 1680. The hinged triangular-shaped canopy is composed of three lid boards with chip-carved ends, above spindle-filled sides. The linear-carved rear panel is designed with a pair of birds, each with hooked-beak and ornate scroll tail perched on stylised-foliage. There is an unusual small cupboard below, enclosed by a boarded door carved with similar foliate scrolls centred by a male mask with pointed beard. The triple-panelled sides and foot panel are also linear foliate-carved, all within chequer line-inlaid rails.



£3125

An Elizabeth I/James I joined oak coffer, made in Gloucestershire, ca 1600–20. It has a triple-panelled lid, the front also has three panels, each with an applied stiff-leaf carved arcade with pointed-leaf pendant, spaced by male and female terms, below a meandering floral-carved top rail and a cushion-moulded lunette-carved rail. The base rails are gadrooned-carved, above scrolled and punched-decorated front spandrels. The sides have conforming applied double-arcades and split columnar-turnings.



£5250

A Charles I joined oak mural food cupboard, made in the Lake District and dated 1647. The asymmetrical front has a panelled cupboard door, carved with a pair of S-scrolls enclosing whorls and forming a fleur-de-lys at the centre, with a series of punched-holes following the carved design. The door panels have chip-carved run-mouldings and a series of carved crescents and punched dots, flanked to the left by a fixed carved panel, designed with a single large stiff-leaf, and with punched holes through the midrib. The top rail is carved with interlaced-lunettes and the date '16' '47' at each end. The base rail and upright end rails are decorated with repeated crescent and dot motifs.



£10,625

A George II documented joined oak-case and inlaid 30-hour long case clock, made in Llanfair, Caereinion and dated 1755. The dial is signed 'Sam. Roberts Llanfair' and numbered '104'. The case is elaborately inlaid with bog oak and holly, the trunk door is designed with flowers and pointed-leaves within chequer-inlaid borders and an eight-pointed star at the base. The hood has a similar decoration and applied split-column pilasters to the sides. The 10 $\frac{1}{2}$ in square brass dial is decorated with cherub masks.



£18,750

An Elizabeth I small joined oak, parquetry-inlaid and paint-highlighted court cupboard, made in the West Country, ca 1590. It has a boarded top and the frieze is carved with interlaced fleur-de-lys lunettes centred by a half-flower carved tablet and conforming quarter-flower corners. The top is placed on cup-and-cover palmette-carved Ionic capital supports, enclosing a canted cupboard, with each side and the middle boarded door having an applied square dentil bordered central tablet with a raised daisy flower carved at the centre. This is framed by parquetry banded inlay with cream-paint highlights, all within leafy-scroll carved angled rails. A pair of panelled cupboard doors are below, each with a stiff-leaf carved arcade. The rail above is also carved with leafy-scrolls and daisy flowers, the front stiles are similarly carved.



£6875

A late 16th-century Anglo-German oak, beech and fruitwood parquetry and marquetry-inlaid 'Nonsuch' chest, made ca 1580. The chest has a boarded cleated lid, the boarded sides are of dovetailed construction. The front has a pair of applied architectural arcades, each with a pediment, enclosing a marquetry design of slender towered buildings. This sits against a profusely parquetry-inlaid ground, each side with an iron bail-handle framed by further banded parquetry. The interior has a lidded till over two small drawers, all with chequer-banded inlay. Although the decoration on this chest is characteristic of 16th-century German inlay, it is thought to have been made in London, probably around Southwark, from the second half of the 16th century, probably by immigrant German joiners and inlayers. The architectural decoration is popularly assumed to represent Henry VIII's celebrated Nonsuch Palace in Surrey, particularly with reference to the fanciful towers. However, it is more likely to have been derived from 16th-century printed designs, such as those published by Hans Vredeman de Vries.

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Shop-based research

In an edited extract from his new book, *Hands Employed Aright*, Joshua Klein studies and recreates the methods of 19th-century furniture maker Jonathan Fisher

Robert Tarule wrote: 'It is possible to do history in the shop' and described the workshop as a 'research tool and even a laboratory'. I have found this 'shop-based research to be an important way to understand the pre-industrial artisan's work. By recreating the process by which these objects were made with the same methods and tools, a depth of understanding can be reached that cannot be gained by probate records or journal entries alone. As Tarule put it, 'my work in the shop, and the questions it raised, helped form the questions I asked of the written documents.'

During my years of research for *Hands Employed Aright*, I applied Tarule's methodology to a few objects from the Fisher collection. Although many of my interpretations are informed by shop-based research, the following are a few specific reflections on lessons learned through this process.

Hand tools and the economy of labour

Even if the researcher/craftsman does not replicate a specific object exactly, having general experience using pre-industrial (hand-tool-only) methods can be an immense aid to interpretation. When I began this research in 2013, I was just about weaned off of woodworking machinery. As I became more comfortable tackling new shop situations without power tools, my understanding of Fisher's work increased greatly. The same conundrums he encountered, I encountered. As I explored deeper, Fisher's logic in



The scalloped fore plane marks left on this board are beautiful indications of a handmade surface

construction (usually) began to make sense.

Although Fisher enjoyed his work, he, like pre-industrial artisans, was not in it for any 'Zen' moments that might be found while planing wood. This becomes obvious when looking at the guts of his furniture. These secondary surfaces reveal what Myrna Kaye has called the 'economy of labour'. Things are not pretty under there. There you will find significant tear-out from the fore plane, glue squeeze-out and even sash-sawn mill marks. In 18th- and 19th-century America, this manner of work was not considered poor or sloppy workmanship. It was simply not worth the time to refine

surfaces that wouldn't be seen. This kind of workmanship was simply par for the course.

As I've explored hand tools in my own shop and examined many examples of period workmanship, I have found that the key to efficiency is embracing the hand-tool textures. Rather than shying away from them, I've accepted them as evidence of the process in the same way the fingerprints of a potter may be left behind on a bowl or mug. Even though this 'Wabi-sabi'-type aesthetic was not part of the consciousness of pre-industrial artisans, I've found that our own 21st-century fascination with 'handmade' and 'artisanal' objects aligns with the rawness of this honest texture.

Card table

In 2015, I replicated a pine card table attributed to Fisher. This project enabled me to reverse engineer the piece, unpack Fisher's logic and recreate his mindset during construction. Thanks to the generosity of the Jonathan Fisher Memorial, I had the original table in my studio to examine during the build. This enabled me to examine even the smallest minutia during each step. The exact dovetail angles and spacings were recreated by relying on graphite rubbings. This level of scrutiny revealed a slight variation in angle among the tails, suggesting Fisher cut these by eye rather than by relying on scribed lines from a dovetail template. If so, he was very consistent.

Discovering the ovolo corner layout lines on the underside of the top was an incredible find. When marking the fillets with a square, I carried the lines all the way until they met. At that juncture, I placed one leg of a pair of dividers to mark the quarter-circle inside the fillets.

Curiously, Fisher also scribed the outline of the base onto the underside of the top. This scribing was done before paint and was therefore a part of the construction process. This scribing could mean several things. If the base had been constructed first, then the

scribing would be a way of transferring the profile to the top. The problem is (as we've already noted above), the ovolo corners on the top were laid out with dividers, and were not simply scribed from the base. It is, of course, also possible that Fisher combined these methods by relying on the scribed lines to delineate the location of the ends, front and fillets, but then relied on dividers to mark a crisp perfect quarter-circle corner. Alternatively, the scribed outline might have served as an alignment guide for affixing the base to the top with pocketed screws. Anyone who has done this squirrely operation before can see the wisdom in having clearly defined lines.

Before the replication, the joinery of the table was examined with X-radiography. Although the mortise-and-tenon thickness could easily be determined by the overrun gauge lines, the regularity of both mortises and tenons could not. Examining the images reveals a few important insights.

The first thing I observed was the bottom of the mortises. The jagged and irregular bottom left from the mortise chisel resembles a mountain scape. This crudeness, while surprising to some, was standard practice before the introduction of machine-bored

mortises. The irregularity in no way impedes assembly because the tenons were trimmed shy of the mortises' bottom. The second observation was the fact that the mortise ends are not perfectly square but are slightly undercut. Although perhaps unnecessary, consciously undercutting here ensures the tenons will seat. The last and most surprising discovery was the fact that these 4in-wide rails have double tenons. Multiple tenons are typically used when wide boards are tenoned into a post or breadboard batten. The reason to use several tenons (rather than one) is to avoid the weakness inherent in such a long mortise wall. The grain between the tenons strengthens the mortise. That said, I don't know why Fisher thought it necessary to use double tenons here.

As an interesting side note, it is obvious from the X-rays that the area between the mortises was pried against with the mortise chisel, likely to remove waste from the bottom of the mortises. This severe denting did not seem to bother Fisher as it does not substantially compromise structural integrity and was hidden inside the joint. The opposite side of the mortise (the one that can be seen when the joint is assembled) was not pried against.



The card table replication was an exercise in reverse engineering and taught me much about how Fisher worked



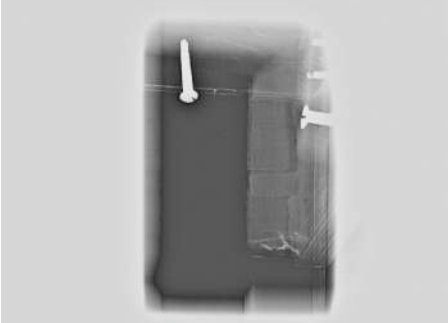
The 'fly' leg on the back swings out to support the unfolding two-part top



The half-blind dovetails were copied from rubbings of the original



The ovolo corners were laid out with dividers and a square, just as was done with the original



This X-ray shows the two tenons side by side in their mortises. Both mortises have the irregular bottoms characteristic of the mortise chisel



The table was painted to match the original. This demonstrated the boldness of the original decoration when the table was new

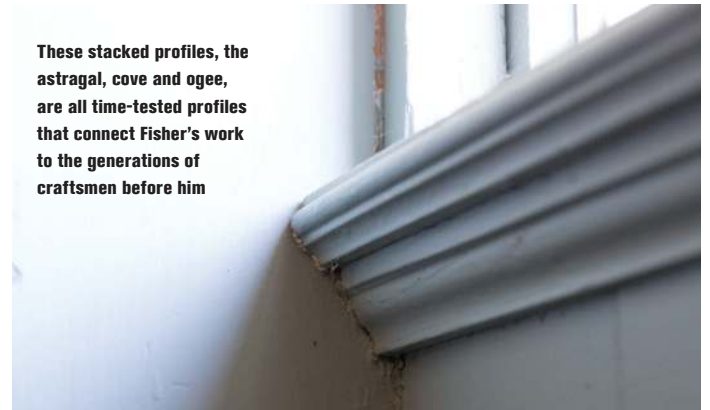
Not reinventing the wheel

During my time studying Fisher's work, I've discovered the value in relying on stock profiles and motifs (and not just because it is a help to researchers for attribution, which it is). As much as Fisher was an artist when he approached the canvas, his furniture making relied mostly on time-tested tell-tale details: a beaded edge, his signature wooden knobs and the creative combination of the same three moulding planes. For woodworkers whose primary objective is unfettered artistic expression, having only three profiles might seem monotonous. But, for the pre-industrial artisan, being able to produce consistently successful work without reinventing the wheel was an asset. With three planes – his ogee, ovolo and astragal with cove – he successfully explored virtually every arrangement possible. I think he managed to display a strong unity to his work while avoiding monotony.

Even for woodworkers who do not rely on furniture making to feed their families, I think we can learn from this wisdom. I have found immense satisfaction in embracing my heritage by adopting some of its decorative customs. It's a tip of the hat. It acknowledges that I am part of a legacy of makers whose origin runs much deeper than my own. It is an incredible feeling to be a part of something bigger than myself.

Whether you choose time-tested details or blaze your own trail, I think it's worth pointing out that consciously reiterating your own signature characteristics in everything you make imparts a unity to your work. It is refreshing to walk into Fisher's house and see his fingerprints all over. I would recognise those knobs anywhere.

These stacked profiles, the astragal, cove and ogee, are all time-tested profiles that connect Fisher's work to the generations of craftsmen before him



Without machinery, discovery of efficient techniques comes in the natural course of building



I made this pine chest over drawers in 2015. While based on numerous extant examples, it was heavily influenced by Fisher's work. The grain painting was inspired by Fisher's wardrobe; the knobs' shape and pinned attachment were things I learned from Fisher
INSET: The construction methods, surface qualities and even dovetail spacing were all influenced by Fisher's work



Storage boxes

Fisher made many small painted storage boxes of rabbeted and nailed construction. The bottom was planed to fit into the assembled carcase and then fastened from the outside with wooden pins. The one-board lids of these boxes are attached with a butt hinge and have cleats on each end that are fastened with screws.

When I built one of these boxes, I was pleased with their ease of construction, ruggedness and overall aesthetic. Even without power tools, this is a quick project because the interior surfaces, bottom and back do not need to be refined past the fore plane if you don't want to – only the top of the lid, the front and two sides should be smoothed. Pinning the bottom through the sides is a curious thing but, in general, Fisher's bottoms seem to be holding just fine. Remember, this is just a simple storage box. It's not supposed to be a complex build.

When making the pins, I cut them at least 1½in longer than their final length. This extra length gives me something to hold while shaping and makes starting each paring cut easier. Trying to start at its end grain is ridiculously frustrating. Do it once and you'll never want to do it again.

I have found that carving the pins with a wide (2in or so) chisel makes the operation easier than with a narrow one. The wide cutting surface is an asset when dealing with small pieces because it requires less concentration than trying to keep your aim dead-on. Think of the difference between shaving leg stock with a drawknife



The box's bottom was pinned in place with wooden pins

versus shaping that same leg with a chisel. The wider, the better.

Because carving pins is one of my favourite tasks, I enjoyed the process of pinning the bottoms. I will continue to do that for small boxes I make.

Making the tapered battens for the lid is easy. I cut a 1/2in-thick x 1in-wide piece of maple to length based on the exact depth of the top. Then, I eyeballed a mark two-thirds of the distance at each end, one from the top and one from the bottom. By connecting the marks to form a diagonal line, the easy no-maths taper was laid out for both pieces at once. When I sawed the two cleats apart, I was

careful to saw as perpendicular as possible, splitting the line down the middle. I also used my 8 tooth-per-inch (tpi) crosscut saw instead of my 4 tpi rip because its saw marks are not as coarse. It took only a few passes with my smooth plane to clean up. The whole process took no more than a few minutes and was easier than making two separate tapered pieces that match.

Most of Fisher's box lids are finished off with a small 45° bevel on the front and sides. This simple detail is a nice touch without getting into the complexity of mouldings. The bevel is also practical because it prevents chipping when the lid gets knocked around throughout its life.



The lid's cleats were sawn out of one piece with no wasted wood and no further shaping



Dividers were used to design the box proportionally. Here, the cleats are ready to be installed onto the lid



The completed box painted and ready for years of use by my son



Hands Employed Aright: The Furniture Making of Jonathan Fisher (1768–1847)

By Joshua Klein, published by Lost Art Press. Available in North America from lostartpress.com, priced from \$27.50, and in the UK from www.classichandtools.com, priced from £50

Conclusion

The survival of the Fisher story gives us a rare glimpse into the life of an 18th- and early 19th-century craftsman. There are very few collections of pre-industrial furniture makers so complete. Not only can we analyse his tools and study the furniture he built but his mind and heart are also laid bare for us in the countless journals and letters he left behind. This kind of three-dimensional look at the man makes history come alive for us. In Fisher's surviving furniture, we see the fingerprints of a passionate and creative artist doing what it takes to make ends meet. His singular vision to honour God in fulfilling his calling was inextricably woven into the fabric of his creative work. He delighted in details but avoided pretence. And Fisher was honest about his mistakes. The humble and solid furniture that stands centuries later is a fitting emblem for the man himself.

Spending time immersed in this refreshingly transparent story is an encouragement to me as a woodworker.

It is easy to decontextualise and romanticise pre-industrial furniture making until we perceive the standards of craftsmanship to be so far out of reach, that they paralyse us at the bench. In moments like these, we need perspective. The furniture making of Jonathan Fisher is the essential antidote. I hope Fisher's work encourages you to take pride in the work of your hands.

Interacting with Fisher's body of work has affected me profoundly. Through using tools like he used and building the way he built, the strange world of Jonathan Fisher has become a little more familiar than I thought possible. I've learned to take delight in honest hard work and am no longer ashamed of the tool marks that attest to it. During moments spent surveying a piece that I've made, every plane track and every saw cut brings me back to that moment of creation. It causes me to reflect, 'Hands, what a blessing they are when employed aright'. **F&C**

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UNDER THE HAMMER

A symphony in three movements: selling tools at a David Stanley auction

John Adamson describes the action at the latest tool sale

£2900

Lot 847: Little is known about Robert Towell, the London maker of this 10in dovetailed mitre plane, perhaps made in the late 1830s, with rosewood infill and scrolling forward grip, but his reputation for high-quality planes, made in the period from around 1810 to around 1850, has been enduring. Unusually, the lever cap is bolted to two lugs on the inner walls. In a pioneering attempt at threaded plane-iron adjustment, the 2¼in iron by Ward is held by a threaded shank which passes through the handle. By turning the octagonal head, the shank bears against the upper side of the iron to hold it in the desired position and presses the forward edge of the cap against the tip of the iron. This plane was previously sold by David Stanley Auctions in their no. 5 catalogue as lot 854, 32 years ago.



Think of the auctioneer as he wields his gavel on the sale-room stage as an orchestral conductor on his podium, baton in hand, and the new-style David Stanley auction held in Leicestershire on 14 September was like the performance of a remarkable symphony, one that out-Mahlered Mahler in length, percussive effects and noises off.

While the first movement was decidedly *allegro*, with bidders happily picking up

astonishing bargains, its informal sell-and-settle nature turned it into an impromptu piece comprising a medley of items brought along on the eve of the auction for immediate settlement after the sale! The second movement, on the other hand, was *adagio* with its long sequence of general and modern woodworking tools going under the hammer in a vast polyphony of functions and designs.

The decisive sharp tap each time the gavel fell gave rhythm and pace to the whole symphony. And all along, as the auctioneer worked his way steadily through the sale catalogue in his clear incantatory tone, the buyers, sellers, dealers, woodworkers and collectors in the sale-room were witnesses to the longest score for solo voice you could ever imagine. In the fugue of absentee bids and those in the room, of bids online and those on the telephone, there was a fascinating counterpoint of sign language, whispers and silences to the auctioneer's solo.

The magnificent *finale* of the third movement reiterated and reinforced the joyousness of the first movement as craftsmen and discerning collectors successfully bid for the finer quality antique woodworking tools in a crescendo rising to the very last fanfare of Norris planes.

The unspoken gamut of emotions among the underbidders gave the whole symphony an underlying tension. And as items were sold they were removed systematically from crowded trestle tables and wheeled away on trolleys by 'stage hands' for delivery to the successful bidders.



Lot 847: The maker's name R. TOWELL / LONDON is clearly stamped on the lever cap.



£2500

Lot 849: Here is one of Karl Holtey's dovetailed gunmetal A31 thumb planes with steel sole and a Norris-style twin-thread adjuster, a tool much favoured by musical-instrument makers. In pristine condition, this plane with rosewood infill and wedge has a 1 1/4 in Holtey iron.

Top-selling lots

There were around 1000 lots in the September sale in which woodworking planes abounded: indeed, planes (eight by Norris, the much sought-after former London maker) once again took up 12 of the top-selling 25 lots, though this time Norris was overtaken in price by another London plane-maker, Robert Towell, and the contemporary Perthshire-based Karl Holtey. Towell's innovative rosewood infill mitre plane (lot 847), predating by several years the foundation of Thomas Norris's firm, sold to an internet bidder in the UK for £2900 (excluding buyer's premium), whereas Karl Holtey's handsome A31 gun-metal thumb plane (lot 849), finely wrought and much in emulation of Norris's A31, sold to an online bidder in the USA for £2500.



Scottish precision engineering of the first half of the 20th century was epitomised by a jointer (lot 963) from the Clydeside workshop of Stewart Spiers. This went to an absentee bidder for £1300, in stark contrast to a much earlier Spiers panel plane (lot 488) in working order, though in need of restoration, which fetched a mere £90 in the second movement.

There was also a simpler Towell mitre plane (lot 848), with wedge to hold the iron, on offer in the third movement, a consolation prize, if you like, which went for a relatively modest £440, reflecting the recurrent appearance of this desirable model in the marketplace.



£1300

Lot 963: On this 23½in dovetailed jointer by Spiers with rosewood infill and closed handle, the iron is stamped: 'ESTD. 1840 / STEWART SPIERS / CAST STEEL / WARRANTED / AYR, SCOTLAND'. The lever-cap-and-screw system enables vertical but not lateral adjustment of the iron. The use of the name Stewart Spiers in manuscript as a trademark on the lever cap points to manufacture around 1930.

£90

Lot 488: 'SPIERS / AYR' is stamped upside down on the bridge of this early Spiers panel plane with dovetailed sole. The closed handle has been repaired with a brass plate, but a little careful cleaning and perhaps replacing the forward tote would restore the tool to something of its former glory.



£440

Lot 848: A fair number of dovetailed-steel mitre planes also by Robert Towell with his stamp on the cupid's-bow bridge continue to come on to the market. On these the iron is held in place with a wedge. The two elements forming the sole are joined with a tongue-and-groove joint at the narrow mouth, ideal for end-grain work.

Tips for collectors

Auctions like this make woodworking tools available for all pockets; many reference books and some old tool catalogues and reprints of old catalogues are often up for sale too. The next sale by David Stanley Auctions will be held at the Hermitage Leisure Centre, Silver Street, Whitwick, Leicestershire, on 1 February 2019. Full details are to be found at www.davidstanley.com. All the items catalogued will be shown ahead of the sale at www.thesale-room.com



The mitre plane's narrow mouth

The long-held belief that the Ultimatum brace is a good investment for collectors was borne out by the sale of two specimens in the third movement. The first, a scarce three-quarter size Ultimatum brace by William Marples (lot 1049), went to a UK telephone bidder, fetching a hammer price of £1500 – not surprisingly really, since it is one of only two known. The next lot, a fine, little-used Ultimatum brass-frame ebony brace (lot 1050), however, made £650, going to a UK telephone bidder in an encouraging sign that prices for these braces are still bullish. But top-quality braces from other manufacturers, working contemporaneously with the original Ultimatum brace, seem not to be faring badly either: a rare lever-pad beech-wood brace by another Sheffield manufacturer, Pilkington Pedigor & Co (lot 1054), with characteristic heavy brass fittings, went under the hammer at £700 to an absentee bidder in the UK.

The *idée fixe* of the symphony was of course wood, for which most of the tools in the sale were made. Deep down in the panoply of items of the second movement were six trays of timber samples in neat blocks representing a wide selection of Western and exotic timbers from around the world labelled with their English and Latin names, together with three folders of veneer samples. What a wonderful trove embodying the infinite potential of working in wood; what a superb source of information to help identify woods and what an inspiration to see their grain and feel their heft in your hand! Lot 420 went under the hammer at £180.



£1500

Lot 1049: It is not known why William Marples made this extremely rare, three-quarter size (11½in) Ultimatum brass-framed ebony brace with boxwood grip and well-replaced ebony head. Was it a presentation piece or made for a specific trade, or was it perhaps a 'gentleman's tool' intended for amateurs? To the habitual maker's stamp 'WILLIAM MARPLES SOLE MANUFACTURER / OF THE ULTIMATUM BRACE' the word 'FRAMED' has been added, perhaps harking back to the wording on the prototype model, where the wording 'ULTIMATUM METALLIC FRAMED BRACE' was used. Like on the only other three-quarter-size model known (David Stanley Auctions, catalogue no. 47, lot 1012), the unicorn and the lion supporters in the coat of arms stamped on the lower frame are in reversed positions when compared with the royal arms.



£650

Lot 1050: This fine, full-sized Ultimatum brass-framed ebony brace by William Marples, with ivory ring in the ebony head, still has much of the original finish, suggesting little use.



£700

Lot 1054: Other Sheffield makers like Pilkington Pedigor & Co mounted their braces with brass plates. Here is an example of a one-piece wooden brace with lever pad, which closely follows the specification of the 'improved joiner's brace' patented by Pilkington, Pilkington & Pedigor in December 1852 under no. 1113. Stamped: 'BY HER MAJESTY'S / ROYAL LETTERS PATENT', it was presumably made before Abraham Pedigor left the firm in 1858. Even though the brass plates are surface-mounted rather than inset and the pad surface-fitted by means of lugs, the Ultimatum framed brace, which came on the market in the early 1850s, outstrips the design for strength.

Antique Woodworking Tools

Their Craftsmanship from the Earliest Times to the Twentieth Century

David R. Russell

with Photographs by James Austin



If you're enjoying our series on tool collecting you will find more examples of the items featured so far in *Antique Woodworking Tools: Their Craftsmanship from the Earliest Times to the Twentieth Century* (ISBN 978-1-898565-05-5).

For more information see www.antiquewoodworkingtools.co.uk

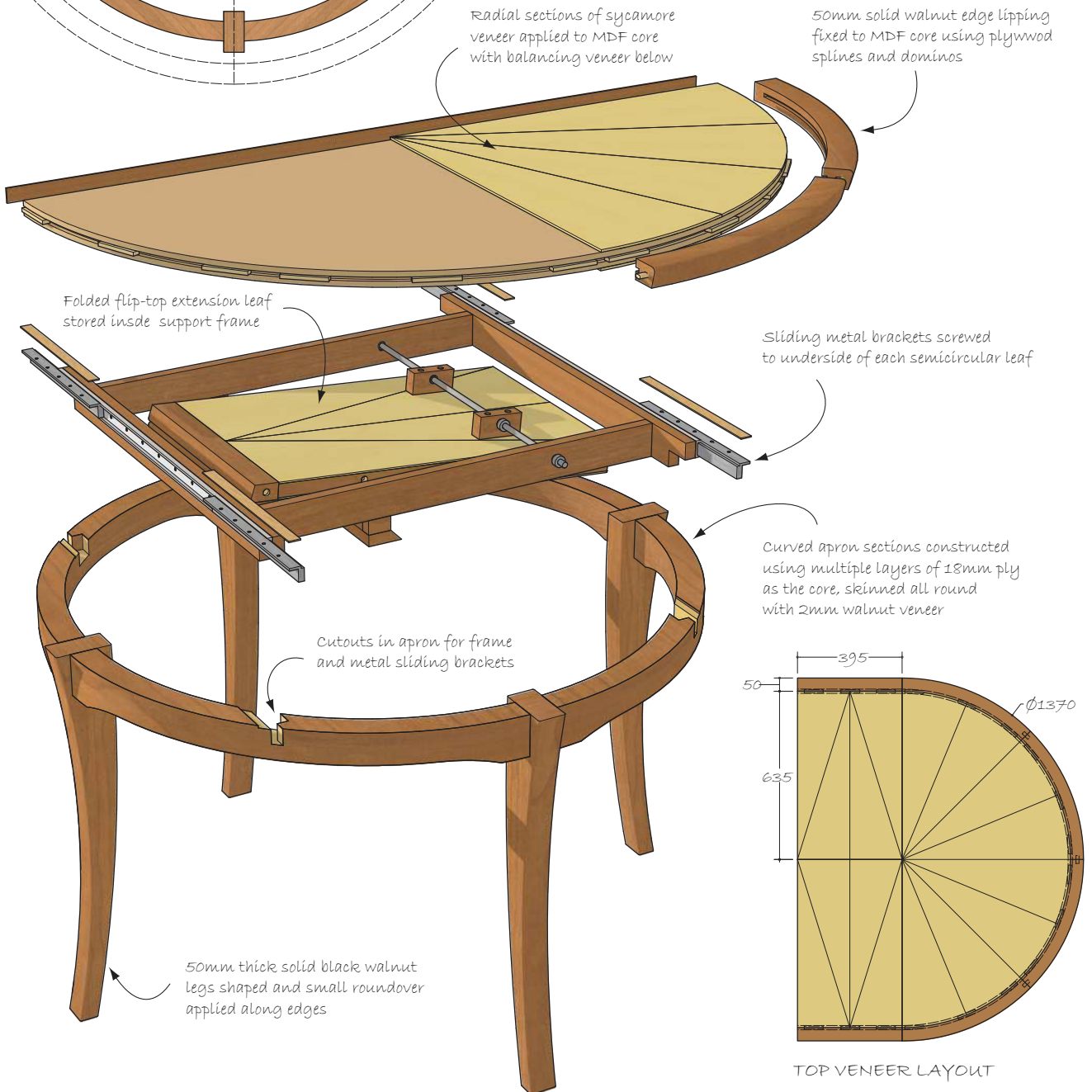
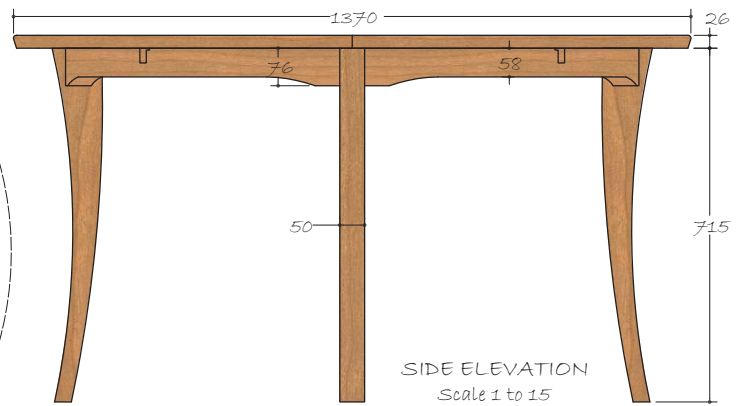
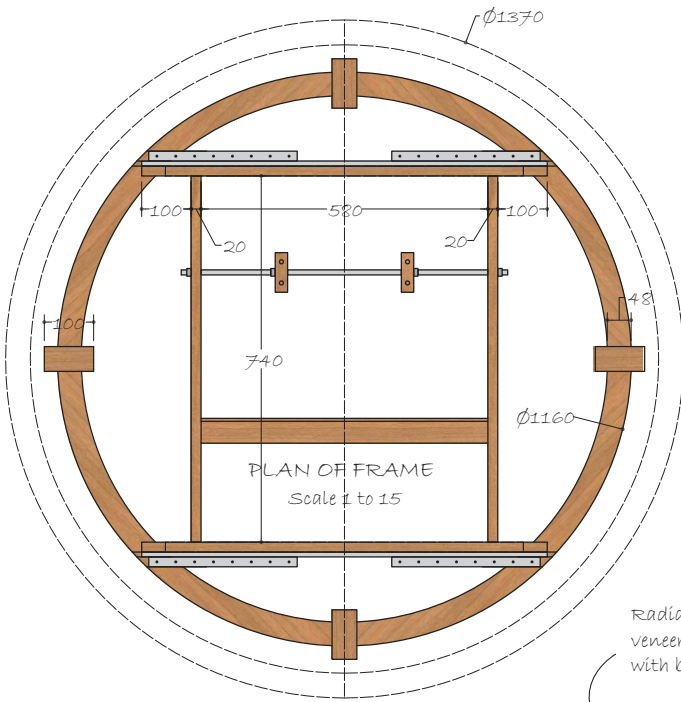
Canterbury tales

David Waite describes how he made the table to match his cathedral-inspired dining chairs

PHOTOGRAPHS BY DAVID WAITE



In my last article for *F&C* (issue 278) I wrote about the design and construction of an elegant dining room chair inspired by windows in Canterbury Cathedral. As mentioned then, my plan was to offer a set of these chairs along with a matching dining room table as a standard part of my portfolio. In this article, I describe the making of the table.



Design

I was keen to use the remainder of the beautiful ripple sycamore board I had used for the chair back splats as a major focal point of the table. I decided that a circular design with veneers of the sycamore laid in a starburst-style pattern should provide dramatic effect, especially when contrasted with the black walnut used for the rest of the table. I also wanted the table to be able to extend to accommodate six people comfortably, and I liked the idea of a flip-top hidden leaf to achieve this aim in a very practical manner.

In terms of table apron and legs, I wanted to echo the curved back legs of the chair design. I am not a great fan of pedestals, where the legs are often only visible when one crouches down low to peer underneath, but I do appreciate the practical solution they bring to the age-old problem of ensuring the diner's legs are not constantly bumping into the table's undercarriage.

I spent a long time sketching designs and building full scale mock-ups in cardboard before settling on what appears to be quite a simple apron and leg design: four curved legs of similar radii to the chair backs, sited close to the edge of the table and therefore on view, intersected by a circular apron, whose position and proportions were such that someone sitting at the table would be



The table can be fully extended to comfortably seat six people

accommodated without hindrance.

Another key design consideration was the flip-top extension, the construction and operation of which dictated the internal frame dimensions and position within the apron. Finally, I decided that the table apron should be able to be easily broken down to allow for transport and relatively straightforward assembly in a client's home.



The curved leg and apron on display

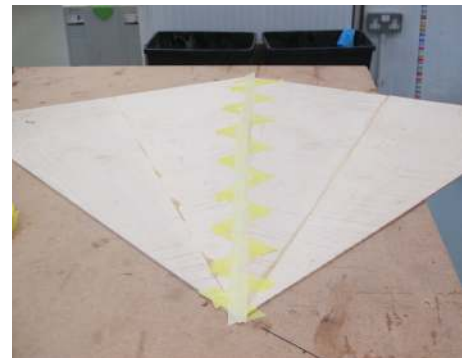
Table top construction

Moisture-resistant MDF was chosen for the core of the two halves of the table top to ensure maximum stability. Two rectangular pieces were cut 100mm over size for both the table top's diameter and radius. A 3mm lipping of sycamore was then attached to a long edge of both boards and each was then planed flush and with a minute hollow in length so that the two halves joined together perfectly with no visible gap. Next, 4mm sycamore veneers were cut to rough shape and length on the bandsaw for the table top and underside, being careful to maintain their order during this process and in the subsequent wide belt sanding.

A template was then cut from MDF with a point matching the exact arc angle required for the finished veneer segments and this was then attached to each veneer in turn and used in conjunction with a bearing-guided bit at the router table to trim each veneer. Sequential veneers were then carefully taped together in a book-matched pattern and glued with Tite Bond to first form eight quadrants and then four complete semi-circular sections. Each of these veneer sections was then stuck to a face of the lipped MDF boards using epoxy resin in a bag press overnight. Once out of the bag press, each rectangular board was skimmed through a wide belt sander to remove excess glue from the veneers and then cut to final shape using a semi-circle template and a hand-held router with bearing-guided cutter. A 3mm groove was cut into the curved edge of each half of the table top in readiness for attaching the walnut edge lippings.



Planing a minute hollow on the edge lipping



The sycamore veneers taped together



Table top with veneers applied



Shaping the solid walnut edge lippings



Jig used to cut the lippings at the correct angle



Splines and Dominoes used to attach the walnut lippings to the edge of the table

The 50mm wide solid walnut edge lippings were formed on the spindle moulder using a curved jig that had the required internal and external radii of the lippings. Care was taken in selecting walnut of similar colour and grain pattern for each of the eight lippings as well as two additional straight lipping components to be used later in the flip-top leaf construction. Once machined, each curved component was cut to required

length at the tablesaw, again using a jig to ensure it was held at the requisite angle to achieve a perfect circle. A small Domino mortise was cut into the end grain of each lipping component apart from the ends that were exposed when the table top opened and a 3mm groove cut into each of the lippings' internal faces. Each lipping component was then glued to the table top edge using plywood splines and Dominoes.

Curved and wedge-shaped clamping blocks were used as necessary to achieve nice tight joints. Once the epoxy had gone off, each half of the table top was again passed through a wide belt sander to remove excess glue and ensure all surfaces were flush. Finally, a subtle edge moulding was applied to the table top in two stages using a hand-held router and a combination of bearing-guided cutter.

Leg and apron construction



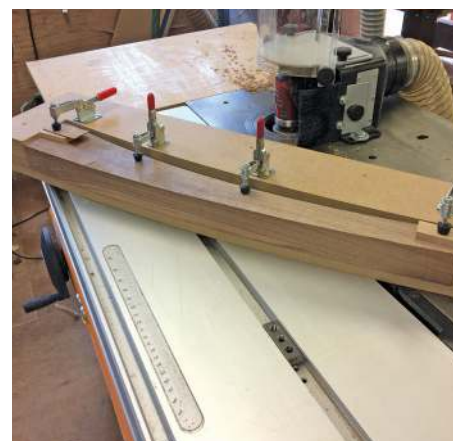
Apron core built from layers of ply

Each of the table's four curved apron sections was constructed using three layers of 18mm thick birch ply. Each was machined to the required curved shape then stacked and glued on top of each other. Small additional ply segments were then stuck to the bottom edge at either end of each component to give the aprons their overall shape. The ply aprons were skinned completely with 2mm thick bandsaw cut walnut veneers in the bag press. Domino mortises were then cut in the end of each apron section and top face for the DF700 connector system, which provides extremely strong robust joints that are easily disassembled with an Allen key when



Trimming the apron walnut veneers with a router

needed. The table legs were made from 50mm solid black walnut. They were left square while mortises were cut on either side of each leg to receive the anchor bolts of the Domino system. The legs' curved shape was then machined on the spindle moulder using an accurate template and bearing-guided cutter. A roundover was applied to soften each of the legs' edges and a small chamfer applied to the bottom of each to avoid any potential for breakout if the table was dragged across a floor. All external faces of the legs and apron were then sanded by hand or with an orbital sander up to 400 grit before several coats of Danish oil were applied to finish the underframe.



Curved table legs being shaped at the spindle moulder

Sliding top assembly

Commercially available extending ball-bearing runners were sourced to attach the two halves of the top to the apron and allow them to be pulled apart in one synchronous movement. These runners screwed to a wooden frame constructed from walnut and which was housed into the curved apron. It was critical to ensure the frame was dimensioned to allow the folded flip-top leaf to sit comfortably within it and also that the extending runners were attached to the outside of the frame to allow the leaf to flip without fouling them. Once the runners' locations were finalised, slots were cut through the apron with a router to allow the extensions to pass through and extend fully. The two halves of the top were then clamped together and the top carefully positioned centrally on the runners and attached with screws from underneath. The attached top opened easily, floating approximately 1mm above the top of the apron of the extension runners.



Constructing the internal frame for the extending runners and pivoting leaf



Table top attached to extending runners

Flip-top leaf

The most important aspect of the leaf design was to ensure the visual flow and pattern of sycamore veneers used for the two halves of the round table continued seamlessly when extended to an oval. I achieved this using a diamond pattern of veneers whose maximum width matched the veneers used in the table's circular sections.

The leaf was made from two pieces of 18mm MDF, which were ripped to exact length and width with allowance made for the solid lippings. These two leaf halves then had a 3mm solid sycamore lipping applied to three of their four edges. Veneers and walnut lippings were made and stuck to each of the leaf halves in an identical fashion as described previously. Accurate layout and alignment including allowance for the small hinge gap at the centre of the open leaf was critical to ensure the points and edges of the leaf veneers and the walnut lippings made a perfect match with the circular half top sections when butted together.

The two halves of the leaf were joined

together using barrel hinges. A simple alignment jig was made at the drill press with the location of the barrel hinge holes drilled through a batten and a plywood fence attached to one of its faces. This was then referenced against a centre line on the upper face of each leaf half and the hinge holes were drilled being careful to drill holes in the two halves using opposite sides of the jig to ensure they were perfect mirror images.

To attach the leaf to the apron, two drilled pivot blocks were attached at pre-determined positions on one of the leaf's underside and corresponding pivot holes drilled in the apron cross stretchers. A hardwood shelf was then fitted to the underside of the apron stretchers to support the leaf when folded away. Finally, steel bushes were fitted and a steel pivot rod threaded through the apron and pivot block holes to suspend the leaf within the apron. Stop collars were attached to the end of the pivot rod to fix and secure the position of the leaf centrally within the apron. (See sidebar opposite for more detail on fitting the leaf.)



Drilling holes for the barrel hinges using an alignment jig



Barrel hinges installed



Determining the position of the pivot blocks on the underside of the table leaf



Leaf installed with steel rod threaded through the pivot block and apron cross stretchers

Finishing details

Alignment pins were added to the internal edges of the leaf and table top halves. A similar jig to that used for the barrel hinges was used to ensure perfect alignment of the holes into which male and female parts of the alignment pins were glued. Next, some nice solid brass circular split catches were fitted to the underside of the table to allow all the sections to be snugged up seamlessly both when in the extended and collapsed configurations. The table was then fully assembled and any minute steps in level found at the joining edges of the top were removed with a sharp smoothing plane. The edge moulding was carefully applied to the walnut lipping of the leaf ensuring it blended seamlessly with the moulding applied to the rest of the top. The table top was disassembled and the underside sanded to 400 grit with a random orbital sander before being sealed with three coats of Danish oil. The top was then reassembled and both hand and random orbital sanded to 400 grit and treated with multiple coats of Danish oil over several weeks to build up a deep shine finish.



The completed table with a Danish oil finish

The flip-top mechanism



Leaf mock-up and temporary plywood stretchers



Drill guide block used to drill pivot holes in stretchers



The steel bushes that the leaf and steel rod pivot on

Given the ease with which I sourced the extending runners, I was surprised to find only one very basic flip-top mechanism commercially available and scant information on how to install it. Further research, however, uncovered a detailed article in *Fine Woodworking* magazine (Jul/Aug 2011) describing the construction of a flip-top dining table and also a very useful and detailed YouTube series of videos by Guy's Woodshop detailing a similar build.

To work out the exact details of the leaf and pivot mechanism, I first made a narrow full length leaf mock-up out of two pieces of 75mm wide MDF. These were joined together using two barrel hinges. The leaf pivots on a steel rod and bushes that passes through two 100mm blocks screwed to the underside of the folded leaf and then through the cross stretchers of the internal frame of the apron. The distance the steel rod is set down from the top of the apron stretcher and the distance from the underside of the leaf to the holes in the leaf blocks it passes are critical in determining

the height of the leaf's upper surface when pivoted into place. In theory, the distance the holes for the steel rod are set down from the top of the cross stretcher equals the thickness of the veneered leaf (20mm) plus the distance from the underside of the leaf to the centre of the holes drilled in the two leaf blocks (50mm in my case). To check this theory and ensure exact alignment I made two temporary cross stretcher rails out of ply, drilled pivot holes at the requisite position and temporarily attached them 100mm apart across the table apron's internal frame with screws. Using a short piece of steel rod and bushes, I installed the narrow mock-up leaf between the temporary stretchers, and tested and refined the pivot mechanism to ensure the leaf did not foul on the internal apron and brought the leaf up to the required height when open. The mock-up also allowed me to determine the position of the hardwood shelf that sits on the underside of the cross stretchers and supports the leaf when folded away as well as guiding the leaf upwards as it pivots open. *F&C*



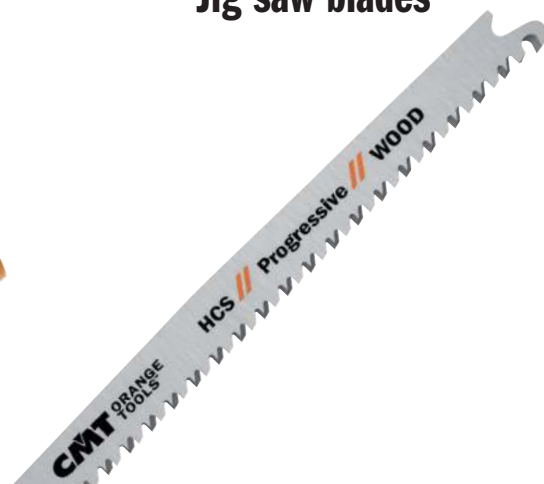
Saw blades



Hole saws



Jig saw blades



Sabre saw blades



Tools with bore & knives



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A credenza for the study

Charles Mak's custom-built bookcase – featuring well-made sliding doors and a harmonious stand – adds a style, function and dimension to his study



Credenza', or 'belief' in English, was the ancient act of a servant tasting food for his master. The word was later adopted to refer to a style of flat-topped cupboards or cabinets, often elevated to table height on legs or stands. In modern days, a credenza is a versatile storage unit that can be used in almost any room of the house such as the dining room, the office or even the hallway.

My study is where I begin and finish all my magazine assignments – from writing pitches and keeping my editors in the loop on my work to submitting my pieces. My furniture books and magazines are, however, scattered on bookshelves all over the house. I have always wanted to keep my favourite reference books and materials nearby for quick access, and this medium-size credenza became the perfect heirloom solution!

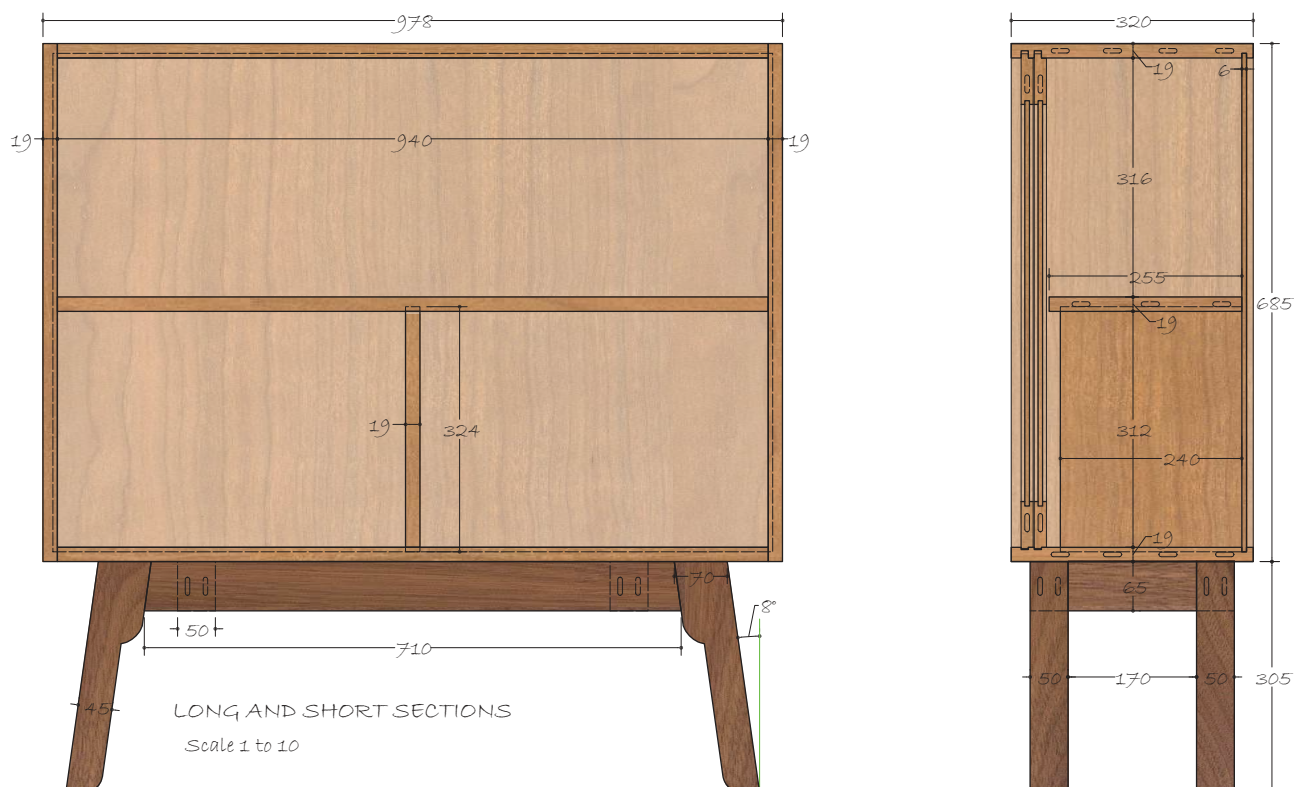


Doors that slide effortlessly and shut tightly are the hallmark of fine workmanship



The divider – included to prevent creep – is made invisible behind the centre stiles

Cabinet & Stand



19mm thick carcass joined with dominos. Shelf divider housed in dados top and bottom

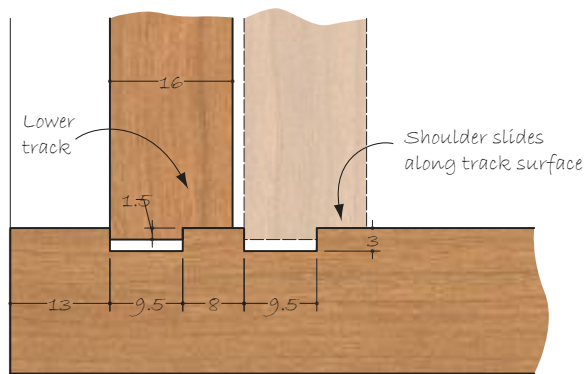
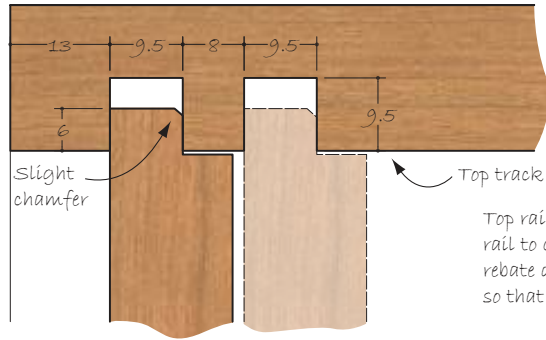
Back in grooves in carcass all round

14mm thick frame and panel door with rebates along the back edges top and bottom creating tongues which fit in grooves in carcass

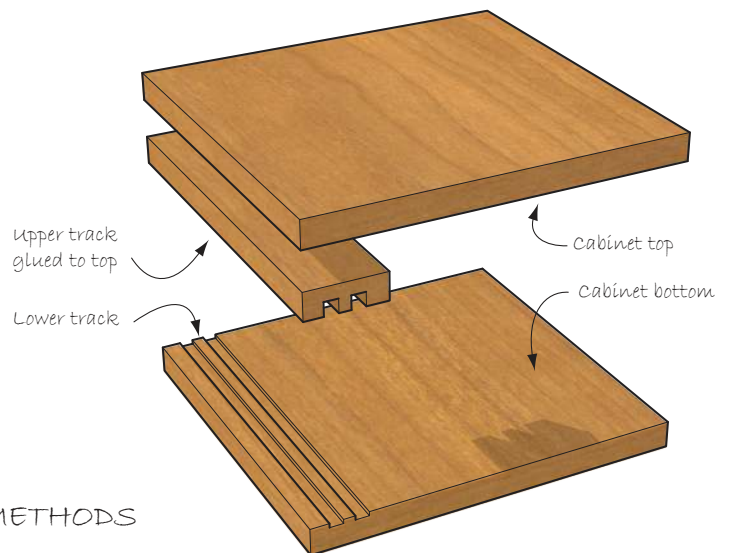
Carcass grooved top and bottom to allow doors to slide. See section details.

50mm thick black walnut legs angled at 8° and joined to stretcher rails using paired dominos. Front and back leg pairs are also joined together with cross rails using dominos

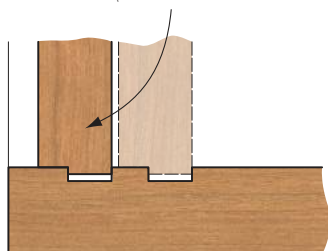
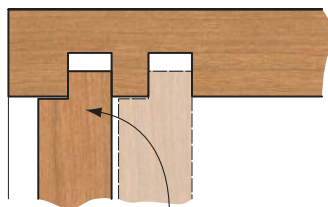
Door tracks



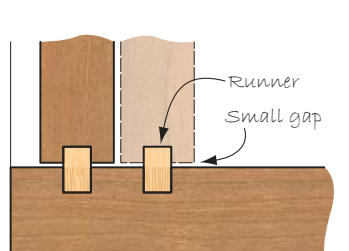
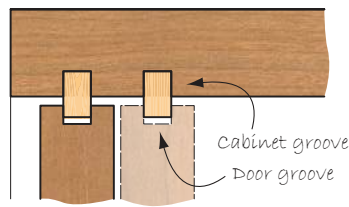
SECTION THROUGH DOORS/CARCASS
Scale 1 to 1



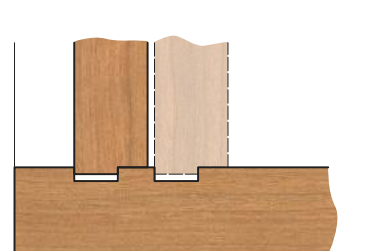
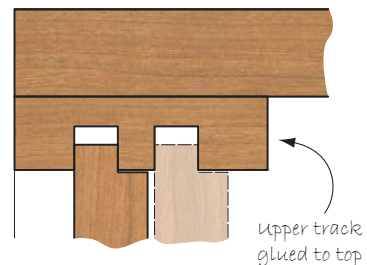
THREE ALTERNATIVE DOOR TRACK METHODS



REBATE ON THE FRONT EDGE



DOORS SLIDING ON RUNNERS



SEPARATE UPPER TRACK
(SHOWN IN 3D AS WELL)

Bookcase design

I chose a credenza because of its clean lines, versatility and elevation, allowing me to place it anywhere without any concern over blocking a floor register. It features a cabinet with sliding doors, a shelf and a sturdy, pleasing stand (see Diagram 1 – Cabinet & Stand).

To suit my needs, I made the unit about 32cm by 94cm, allowing the books and magazines to sit about 2.5cm from the doors. Making doors that will slide smoothly in all seasons requires proper planning:

I picked the frame-and-panel-doors over solid wood which may cup or warp due to humidity changes.

Sagging shelves are both distracting and unappealing. The strength of a shelf depends on the shelf's dimensions and material used. For instance, thicker and wider boards are stronger while longer shelves are less rigid. For a sag-proof shelf, I installed a centre divider (hidden from the view by the centre stiles) to support the shelf,

essentially making the shelf 50% more rigid.

The stand is made of walnut, a darker wood, to add visual contrast to the sapele cabinet. The aprons and legs are made to be about the same width as the rails and stiles, so the whole unit looks balanced.

The butt joint is ideal for this cabinet construction, and floating tenons were my choice of joinery method (see my article 'Taming the Domino joiner', *F&C* 233, if you need a refresher on the Domino joinery).

Cabinet construction

Wide boards, even if you can find them, are pricey. So, a better approach is to glue-up boards to the desired width, and then cut them to length. The next step is to mark out all the pieces in their

proper orientation, for example, with a cabinetmaker's triangle, and lay out the lines for the Dominos. Set the Domino joiner for the proper depths and thicknesses, and cut all the mortises for the butt joints.



A planing sled and shims allow you to flatten rough stock with a thickness-planer alone



A long clamp is used cleverly with a vice to hold a wide board vertically to the bench

Door tracks

Unknown to many people, a fine sliding door does not slide on the bottom of the lower track. Instead, a rebate is cut along the back edge of the door's bottom so that the cheek (tongue) fits into the groove without bottoming out while the shoulder rides on the lower track's surface (see Diagram 2 – Door Tracks).

First, mark out the grooves on the inside faces of the top and bottom to avoid grooving on the wrong side of the boards by mistake!

Also, remember to cut the deeper grooves on the top, not the bottom, to allow the door to tilt into them. You can mill those grooves on the tablesaw, with a router or by hand with a plough plane.

Some cabinetmakers cut the rebates along the front edge of the doors rather than the back edge, while others prefer to use runners instead of tracks to guide the doors. You can find more details about the differences in Diagram 3 – Door Track Designs.



I tried out different track positions, and used the final ones to re-check the fence setting on the router



When routing a groove with a fence, rout left to right so the bit is pulling the router against the fence

Back panel grooves and divider dados

To house the back panel, grooves are cut around the cabinet. The divider is housed in blind dados, cut on the underside of the shelf and on the inner face of the bottom. The dados can be cut using a router and a 'shop-made dado jig. I took a hybrid approach: I scribed out the dado lines with a combination square, routed out the bulk of the waste and finished it with a chisel.



Mark the first dado, then transfer it to the other board with a knife and square for consistency



If you use a fixed router, pre-drill a blind hole on the board for the router bit to start freely



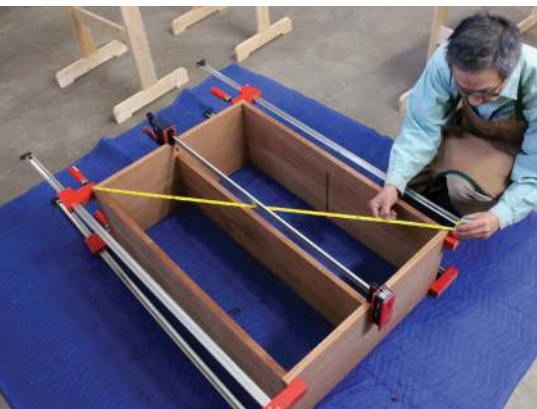
Careful chisel work produces first-class joinery fit for the centre divider

Dry-fitting and case assembly

It's now time to dry-assemble the case to find out the exact sizes of the back panel and centre divider. Instead of measuring, a story stick is used here to give a precise visual representation of the parts, and reduce measurement-related errors in the milling process. After cutting out the panel and divider, plane or sand everything smooth and proceed to carcass assembly.

The glue-up looks deceptively simple, but the size and the shelf with a divider can catch an unprepared woodworker off-guard. I used a number of assembly strategies to help me, including these:

- After dry-fitting the assembly, take a picture of it. Refer to the picture to refresh your memory if the actual glue-up is done on another day
- Make a checklist outlining each assembly step to guide the actual clamping and gluing
- Pre-glue one side of the tenons into the end-grain mortises so half of the tenon glue-up is done before the assembly begins
- Get a trusted hand to help, for example, with steadying a long board or holding a long clamp in position on the other end.



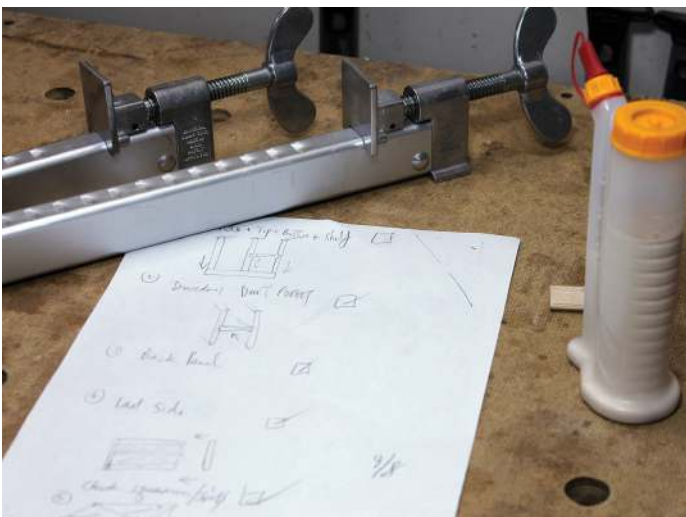
A square carcass is critical for the sliding doors to close without gaps



I used a story stick to figure out the dimensions for the cabinet back and opening



Ease the edges to remove the sharpness and add some edge protection



The act of preparing a checklist makes you think through the whole glue-up procedures



Microwave the tenons for 10 to 15 seconds to remove the moisture before gluing

The frame-and-panel doors

Sliding doors are more complex than typical frame-and-panel doors to size. First, the width of the combined doors is larger than that of the cabinet opening, to allow some overlapping of the centre stiles. The doors are also taller than the opening so you can rebate the tops and bottoms to fit into the tracks. To verify my calculations, I made a prototype, thereby avoiding potential cutting mistakes before it is too late.

Second, you need to consider the penetration of the rebates in the grooves when sizing your frame members. Australian furniture designer and maker Raf Nathan

explains why he made the rails wider than the stiles for his tool cabinet, 'The wider rails allow me to cut in a tongue to slide in a groove, and still have the same amount of wood visible [as the stiles]'.

Once the rails and stiles are sized and cut, follow these steps to complete the doors:

- 1** Cut the mortises on the stiles and rails
- 2** Rout through grooves on the rails and blind grooves on the stiles
- 3** Saw the panels to size and glue up the doors

- 4** Rebate the bottom along the back edge of the door in one pass
- 5** Rebate the top for the door in two stages: the first is a shoulder cut while the second cut finishes off the cheek
- 6** Fine-tune the rebates for a smooth ride
- 7** Cut out finger pulls on the stiles.

The eye loves a well-fit door, and the ability to install faultless doors is the calling card of a fine cabinetmaker. So, spend the effort as necessary to make your sliding doors look – and act – impeccably!



I cut a pair of cardboard doors to calculate the size to re-check the arithmetic



When mortising members on the endgrain, always use the narrow Domino setting



Check the door for flatness and then for wind (using a pair of winding sticks)



Chamfer the back edge of the cheek to allow the door to ease into the upper track



Use the cabinet opening (and not the door because of the uneven penetration into the grooves) to locate the centre point for the pulls



Hand tools offer better control and reduced risk in making cuts on a finished door

The aesthetic stand

The stand plays an important role in the overall vibe and aesthetics because that is where people end their viewing journey. The general guidelines for sizing the stand are that it should be strong enough to support the cabinet with its full load, and that it raises the cabinet to the desired height. I tried out a few prototypes with scraps and settled on a stand design with angled legs. Walnut is selected for its strength as well as darker tone to create a nice, warm visual contrast. To achieve a splay-look,

the ends of the aprons are bevelled at an angle to attach the legs.

The double mortises on the legs are cut using the Domino joiner before they are shaped to a curved profile on the bandsaw. Remove all the machine marks with an oscillating drum sander, or with a spokeshave and card scraper. Finally, drill elongated holes on the aprons and stretchers to allow for wood movement, then sand or plane all the parts smooth, and glue up the stand.



The aprons and legs are sized close to the rails and stiles to create a harmonious and attractive look



Prepare the components of the stand slightly overlength and place them on the cabinet to determine the stand's final size

Finishing

Apply an equal number of coats of finish on all sides, and after the finish is cured, put a coat of paste wax on everything, including the tracks. The use of polyurethane finish and paste wax will help in the moisture content control. Lastly, screw the cabinet to the stand, and here comes the finale: lift the rear door into the upper groove, then drop it in the lower groove, and repeat the same for the front door. Every time you slide the doors – effortlessly – you'll appreciate what an heirloom piece you have just built for yourself! *F&C*

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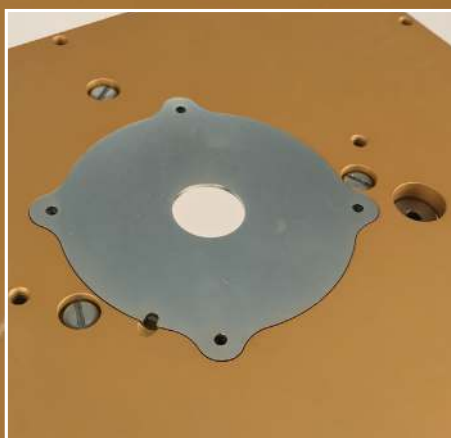
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- Janofsky, Seth. Sliding doors for furniture. *Fine Woodworking*. Issue 172. October 2004.

KIT & TOOLS

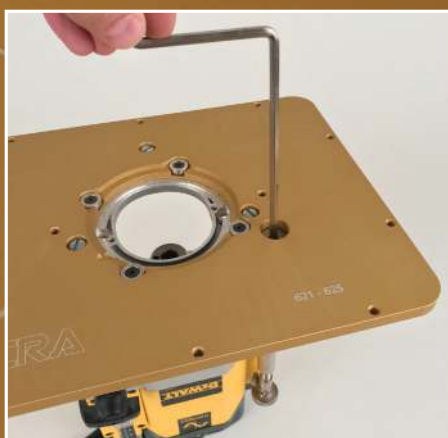
HAVING TROUBLE SOURCING THE RIGHT TOOL FOR THE JOB? HERE'S A SELECTION OF NEW AND ESSENTIAL EQUIPMENT FOR THE WORKSHOP

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PHOTOGRAPHS BY DEREK JONES AND PUBLICATIONS



Drop the throat inserts into place and forget about them



Despite the number of small parts, the Router Raizer is easy to fit and well worth having



The Muscle Chuck allows cutters to project further through the table and the extra long hex key makes cutter changes a cinch

MINI TEST Inkra Router Table Insert

Like a lot of woodworkers I enjoy the intimacy of working with hand tools. And though I wouldn't argue that it's always the best approach, it is generally accepted as being the most enjoyable way to process timber on a small scale. But an equal level of satisfaction can also be experienced from adopting a hybrid approach to outputting components. And by this I mean incorporating machines and power tools to carry out some of the more repetitive tasks. An electric router is perhaps the most versatile of small-scale equipment to have at your disposal but just like a lot of hand tools they come in varying degrees of user friendliness. Choose wisely and there's no reason why you shouldn't enjoy your 'shop time just as much with machines.

For the last couple of months I've been using the Inkra MagnaLOCK plate and Router Raizer on my router table and for a no-fuss solution for accurate routing, they're extremely good value. The Inkra table insert has a number of excellent features that make installation easier than many of its competitors and so adding to the user-friendly experience. The manufacturer's notes claim the plate is made from aircraft-grade aluminium; a term frequently used by imaginative marketeers to suggest a level of engineering not always commensurate with either purpose or performance. I don't believe that's the case in this instance, however.

Accuracy is a funny thing, often relative to other components and factors that make up the whole when you're building a router table. And as most after-market or retro-fit inserts get built into tables that are either likely to flex or just not flat in the first instance, it's important at least to know the area around the tooling is reliably flat. The Inkra insert takes the worry out of this with a generous amount of fixings and adjustments to the insert itself and the machine. The icing on the cake however is the magnetic rings used to open or reduce the throat area around the cutter. Once again it's the simple things in life that give so much pleasure. Marry the insert with a Router Raizer and Muscle Chuck and you'll fast track yourself to machine shop heaven in no time. Available through the Woodworker's Workshop, the insert can be purchased to suit a number of different base plate configurations or bought undrilled if your machine doesn't appear on the list.

From: www.woodworkersworkshop.co.uk

Dremel 4300



£139.99

The Dremel 4300 has multiple applications. From sanding to grinding, and routing to cutting, electronic feedback gives the additional power needed to maintain maximum performance when working with both soft and hard materials. You are always in perfect control of your projects, even in awkward angles, tight spaces and dark areas. The 360° adjustable LED light at the front allows you to see everything that you're doing. Insert any accessory that

suits your project and you're ready to go. Fitted with a Multi Chuck, you can change accessories with ease regardless of the diameter of the accessory. It has a soft grip to reduce vibration and prevent fatigue with a more secure grip. The Dremel 4300 comes with a range of interchangeable attachments, suitable for metal, jewellery, leather or wood.

From: www.dremeleurope.com

Makita 18V 16G LXT Finishing Nailer

The Makita DBN600ZJ 18V LXT finishing nailer is setting new standards in nailing technology. It is engineered for 16 gauge finishing nails, from 25 to 60mm in length, and is particularly suitable for installations that require a neat, professional visual appearance. Powered by a single 18V Makita Lithium-Ion battery the powerful motor will deliver up to 800 shots on a fully charged 4.0Ah battery. The magazine has the capacity to carry 110 nails and when empty the machine weighs 3.4kg. A conveniently designed window allows for easy checking of the remaining quantity of nails.

The easy-to-see slim tip nose is not shielded from view and the driving depth is easily adjusted by dial, while tool-less nail jam clearing adds speed and efficiency and reduces downtime. The anti-dry firing mechanism ensures that a nail is in the ready position; if the magazine is empty or the nails are not positioned correctly the nailer will not operate, saving battery life and enhancing safety. The ergonomically designed grip, LED job light and belt clip ensures operator comfort and convenience, together with low vibration and sound level. This new tool can be used in either bump-fire mode – where

the nose is bumped against the target material to activate it – or in sequential mode where the tip is placed on the target and the trigger pulled. Mode selection is by rocker switch and a bumper ensures that the workpiece is fully protected from scratches and damage.

From: www.makita.uk.com



From
£399

Bridge City tools giveaway

**WORTH
£227.86**

This month in *F&C* we're teaming up with Axminster Tools to offer you the chance to win a set of marking tools from Bridge City Tool Works

'Quality is contagious'

Established in 1983 by John Economaki, Bridge City Tool Works produce innovative and immaculately crafted tools for the most discerning woodworkers and collectors from around the world. Made from the finest materials, many of their tools are produced in limited quantities, making them truly collectable items. To use one of their tools is to use the ultimate woodworking tool.

'A tool should be as compelling when not in use as it is when serving its intended purpose.'



There are three prizes on offer for one lucky reader consisting of:



Bridge City TS-1.5v2 Try Square – 165mm

The TS-1.5v2 Try Square is a medium size square and one that woodworkers making boxes, drawers and similar projects will greatly appreciate.

With a blade length of 165mm from heel to toe, it falls exactly between the Bridge City TS-1v2 and the TS-2v2 squares. The stainless steel blade is glass bead-blasted and free of graduations; Bridge City claims this is to enable you to write on it with a pencil. This may be a practical solution for repeat marking, if you can bring yourself to try it.

The blade also features a 1:8 cutout for dovetail layout. The stock is anodised aluminium with a 'positive grip' cutout. The stock is a contrasting silver and black with a distinctive anodised orange trim. The accuracy of the square is plus or minus 0.05mm over the length of the blade, inside and out. If at any time the square meets with an accidental fall, the blade can be adjusted to return it to its precise original setting.

Worth £61.96



Bridge City MS-1.5v2 Mitre Square – 226mm

Constructed in the same way and complementing the Bridge City try squares, this mitre square offers outstanding accuracy and styling. The blade is satin finished hard stainless steel, 31mm wide, 226mm long and an impressive 1.5mm thick. It is perfect for laying out a joint with a marking knife. The aluminium stock is a contrasting silver and black with a distinctive anodised orange trim. The stock measures 122mm by 34mm and 13mm thick. The handy size makes the MS-1.5v2 mitre square perfect for marking out or checking mitres. These are set and checked before leaving the factory, to an accuracy of 0.025mm or less.

Worth £63.95



Bridge City MT-1 Multi-Tool

This tool will make the most of the space in your tool chest. The MT-1 combines the following functions: a 200mm sliding bevel, a 1:8 dovetail saddle square, a 1:6 dovetail saddle square and regular saddle square. An effective cam-lock holds the stainless steel blade firmly in position. The blade has a 1:8 dovetail cutout and a pencil notch on the tip that allows you to use the MT-1 to draw a line parallel to an edge. The stock, precisely milled from aircraft aluminium, is 112mm long, 22mm wide and 25mm thick at its widest point. All the functions of this positive locking bevel are precise and a pleasure to use.

Worth £101.95

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WWW.WOODWORKERSINSTITUTE.COM/C/COMPETITION2

Password: FCTOOL Closing date for entries is 31/1/2019 Limited stock available

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Out & about:

Jonathan Fisher House

This month we visit the home of the furniture maker whose work inspired Joshua Klein's new book

If you enjoyed the extract from Joshua Klein's *Hands Employed Aright* on page 40, then you may want to arrange a visit to the Jonathan Fisher House museum in Blue Hill, Maine. The house is open every summer and early autumn for tours, lectures and events.

Jonathan Fisher (1768–1847)

Jonathan Fisher was born in New Braintree, Massachusetts. After the death of his father, a Revolutionary War soldier, he was raised in the Holden home of his uncle, a minister.

As a young man he considered becoming a blacksmith, cabinetmaker or clockmaker, but his intellectual gifts were evident, and his family was able to send him to Harvard in 1788. In 1796 he became the first settled Congregational minister of the small village of Blue Hill, Maine. Although his primary duties as a country parson took up much of his time (followed closely by farming), Fisher was also a talented artist, scientist, mathematician, surveyor, and writer of prose and poetry. He bound his own books, made buttons and hats, designed and built

furniture, painted sleighs, was a reporter for the local newspaper, helped found Bangor Theological Seminary, dug wells, built his own home and raised a large family.

He left behind a remarkable written record of his life: he kept a daily journal and also copies of his letters. The journal records his observations and interests in science, engineering, mathematics, agriculture and natural history, as well as notes about his woodworking. This unique archive is a valuable resource for contemporary furniture makers like Joshua Klein.



Joshua Klein used Fisher's notes when recreating items such as this low bench



Self-portrait painted in his study by Rev Jonathan Fisher, 1824

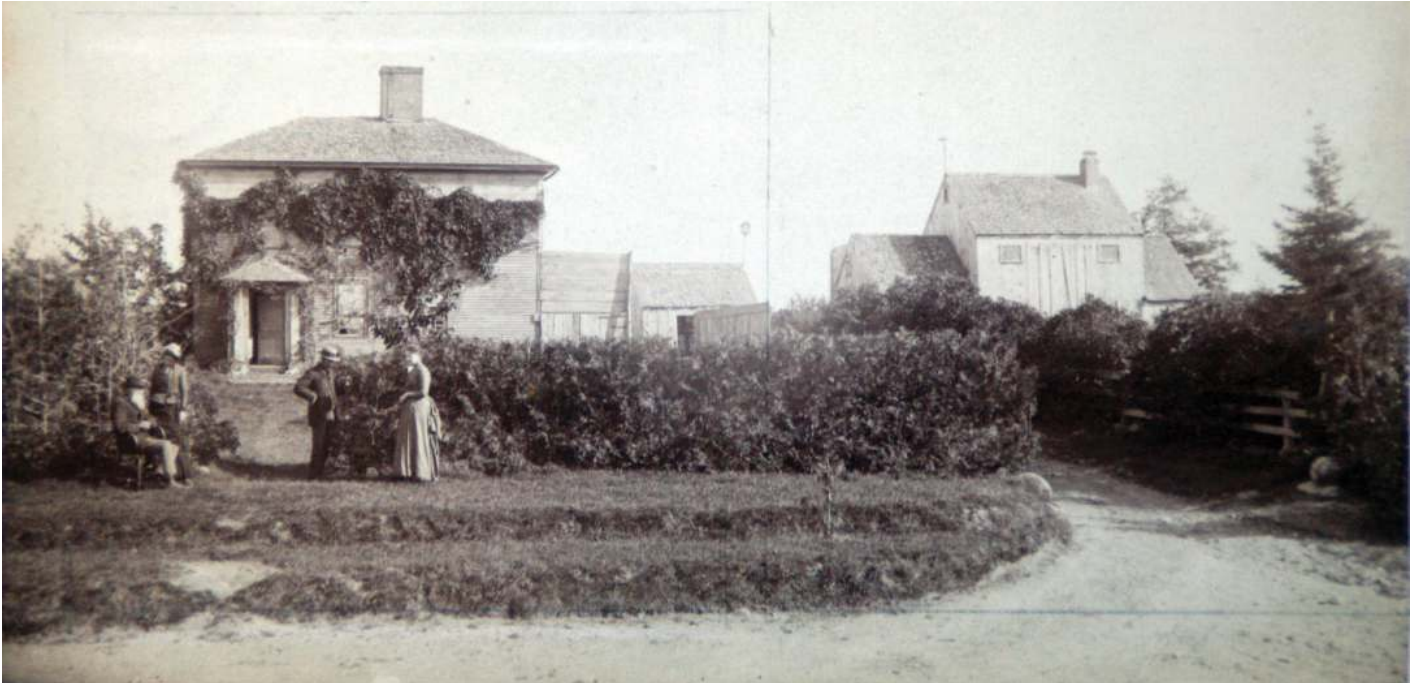
History

Jonathan Fisher began building his Blue Hill home in September 1796 and he and his new wife, Dolly, finally moved into the property in November 1797. Over the following years, Fisher planned and built an additional house in order to accommodate his growing family – the couple had eight children. He also added various outbuildings, such as his wood-house which included the

first wind-powered saw in Blue Hill.

By 1818, the new house was complete and remained in the same state until the late 19th century when Fisher's grandchildren decided to make renovations. The original 1796 wooden house was torn down and a two-storey extension to the new house added in its place. The outbuildings, including the wood-house were torn down.

The 1818 house, however, remained intact, and when Fisher's descendants moved away, a group of local citizens arranged for a transfer of ownership of the house to a local non-profit foundation, the Jonathan Fisher Memorial, and made it possible for the house to be opened to the public. The house was listed on the National Register of Historic Places in 1969.



Photograph of the Jonathan Fisher house taken in 1888, with his son Willard (named after Joseph Willard, president of Harvard when Fisher was a student), with Fisher's woodworking shop on the right



A view of the back hall, showing the built-in clock made by Fisher while he was a student at Harvard. Fisher painted the dial with verses about Time in five languages

The Federal era

The Federal era in America lasted approximately 1788–1800 and refers to the Federalist Party, which dominated US politics at this time. This included the presidencies of George Washington and John Adams. The Federalist politicians created the national, federal government under the United States Constitution.

In terms of design, the Federal era lasted until around 1830. Federal architecture displayed a classical influence, reflecting the new republic's admiration for ancient Greek and Roman civilisations. Federal furniture was influenced by the Adam style and is characterised by geometric forms, curved legs, and the use of contrasting veneers and geometric inlay patterns.

What to see

Tours of the house give visitors a remarkable glimpse into daily life in Federal-era New England. The house's furniture collection includes chairs, chests, stands and tables, all made in the vernacular style of the time. As well as the furniture that he designed and built, Fisher's artworks (paintings, drawings, watercolours and woodblock prints) are also on display, along with the camera obscura that he designed and built to aid his drawing. His collection of homemade surveying instruments have been carefully preserved, along with his extensive library. In the grounds, work is ongoing to re-create the 1820s orchard following Fisher's plans.



Exhibition gallery displaying various tools, furnishings and art all made by Fisher



A pine games table, made and painted in imitation of fine wood by Fisher, ca. 1830

WHERE ELSE TO SEE... other Bristol Museums

American Federal-Era Period Rooms, The Metropolitan Museum of Art

New York, USA, www.metmuseum.org

American Museum & Gardens

Bath, UK, americanmuseum.org

Dumbarton House

Washington DC, USA, dumbartonhouse.org



Compass rose, from Fisher's Mathematics notebook, created while he was a student at Harvard, 1793



'A Morning View of Blue Hill, Maine, 1824', painted by Jonathan Fisher

Information for visiting

Address: 44 Mines Road, PO Box 537, Blue Hill, ME 04614-0537

Website:

www.jonathanfisherhouse.org

Opening hours: Open during summer and early autumn, see website for exact dates

Charges: See website for tour details

Information correct at time of publication, check the house's website before making your visit

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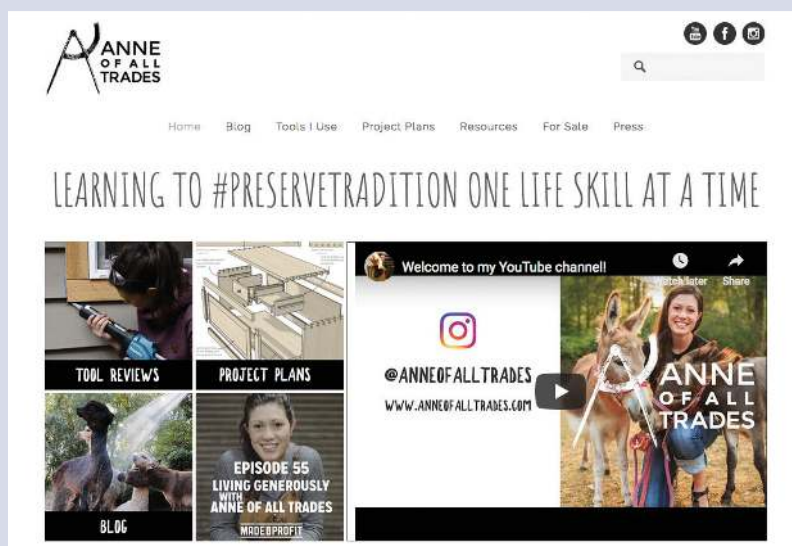
In this section of the magazine we bring together the best furniture and woodworking related content from social media. Here we'll recommend who to follow, where to comment and which online communities to join. We also feature projects we love, readers' letters, comments from the Woodworkers Institute forum and pictures of readers' work. If you'd like to see your furniture on these pages, email derekj@thegmcgroup.com

Website: Anne Of All Trades

Regular *F&C* contributor Anne Briggs Bohnett records her woodworking adventures on her website, Anne of All Trades. The site includes her blog, tool reviews, project plans, an extensive resources section and links to Anne's

social media accounts. As explained on the homepage, this site is 'a resource for anyone interested in getting their hands dirty'.

Address: www.anneofalltrades.com

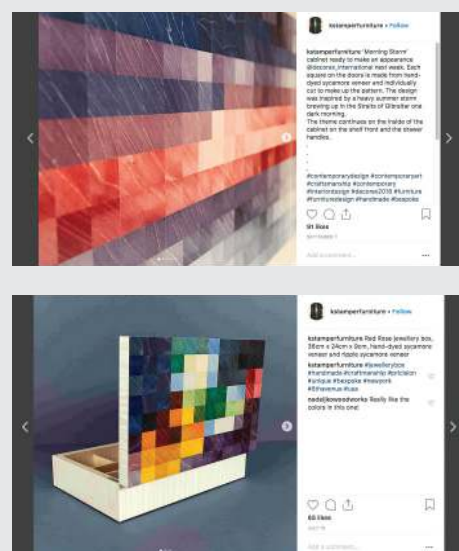
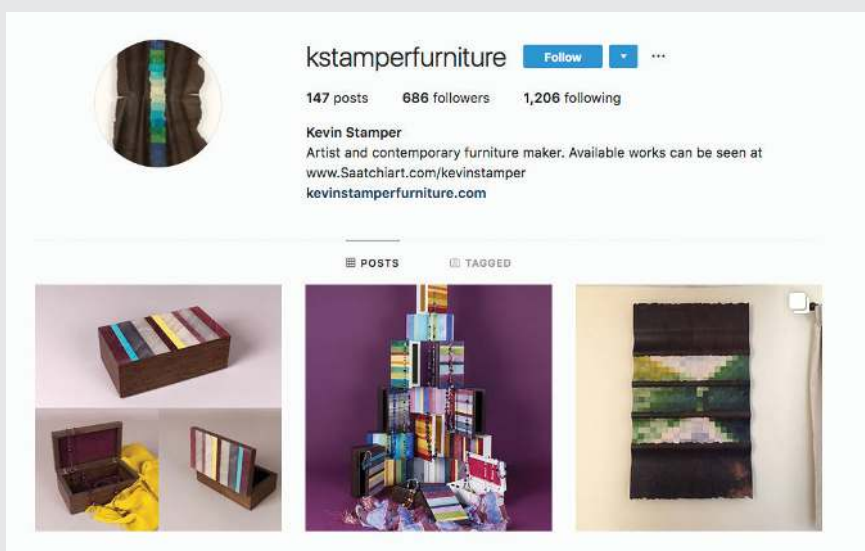


Instagram: Kevin Stamper

Artist and furniture maker Kevin Stamper is known for his colourful designs, which he creates by digitising photographs and sketches, then dyeing squares of veneers to recreate the images. He has applied this technique to tables and cabinets

as well as boxes and frames. You can follow this intricate process on Kevin's Instagram feed, which includes photos and videos of his latest works and exhibitions.

Address: [@kstamperfurniture](https://www.instagram.com/kstamperfurniture)





Projects we love

Here we highlight the latest furniture and woodworking projects from around the world that we think deserve to be shared with our readers. If you're a member of a collective or a student group and would like to see your work here, then submit a story to: derekj@thegmcgroup.com

Maverick 1 drinks table

The Maverick 1, designed by Shane Elliot, is a limited-edition drinks table with a design that harks back to 1920s America and 'Prohibition tables'. These tables were made with secret compartments to store illicit bottles of alcohol. This modern-day interpretation is available in maccassar ebony, elm burr veneer and brushed antique brass, or in an off-white finish in laquered wood, resin or carbon. It has a secret compartment that, at the touch of a button, reveals a drinks cabinet with an integrated and moistureless cooling chamber, designed to chill bottles of wine. This was achieved through a collaboration with Kaelo, a UK company who supplied the patented cooling technology that creates a 'jacket' of cold air around the bottles.

Shane is a graduate of The Chippendale International School of Furniture. The ethos behind his company, The Elliot Collection, is to marry traditional handmade skills with modern-day technologies, which is perfectly achieved in this table.

www.theelliottcollection.com



YouTube: Guy's Woodshop

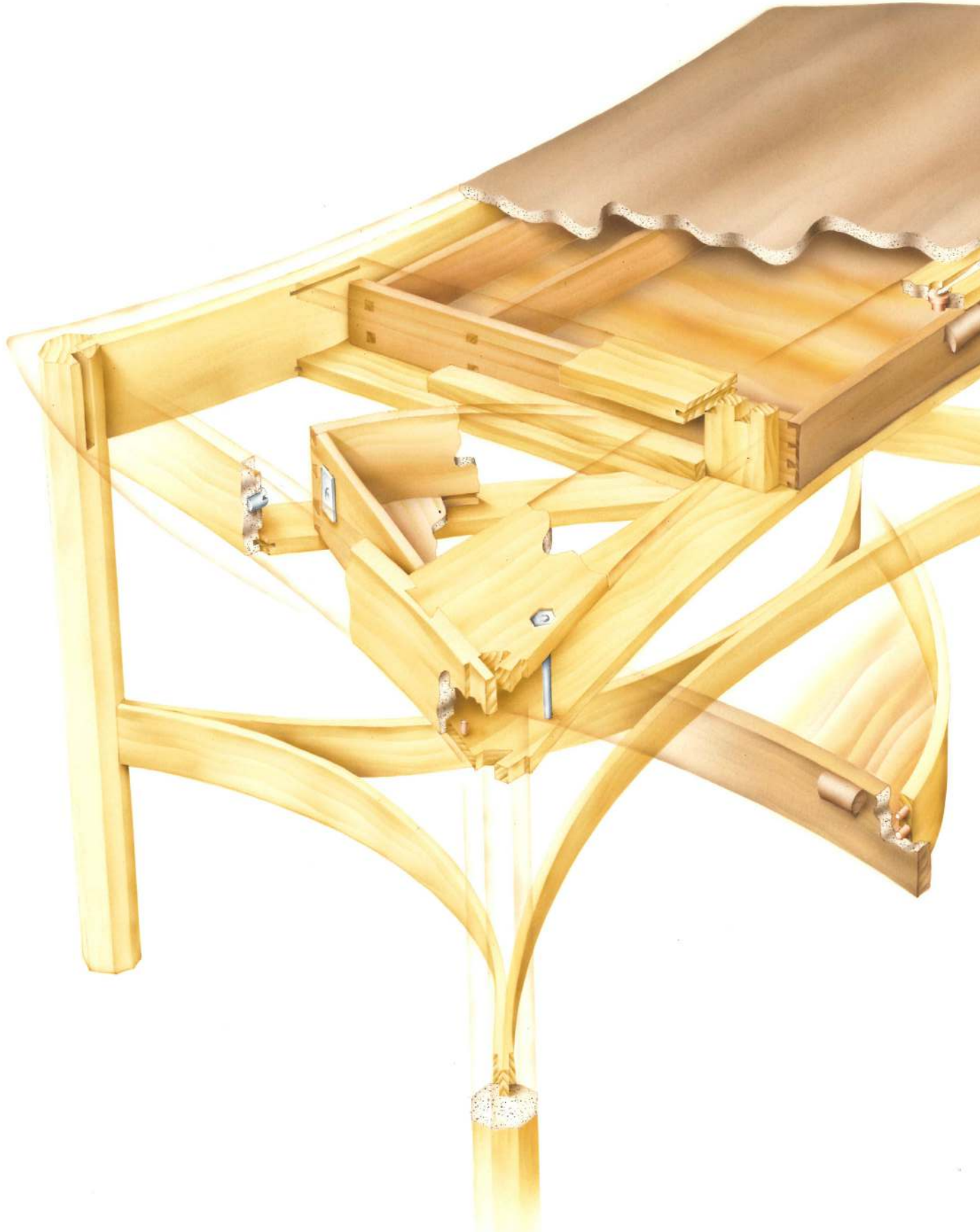
Guy Dunlap makes custom furniture and teaches woodworking from his workshop in Indianapolis. It was his YouTube channel that David Waite turned to for help when making his flip-top dining table (page 50). His playlists include videos on making various

styles of tables, desks, cabinets and storage units, as well as comparisons of techniques using hand and power tools.

Address: www.youtube.com/user/GuysWoodshop



An airbrush with the past



**This month we're going back to July 2001
and issue 54 for another look at
Robert Reid's writing desk**



At first glance you could almost be forgiven for thinking there's a bit of a hayrake thing going on with Robert Reid's writing desk, such is the influence of a stylised schematic drawing. Reading through Robert's article in *F&C* 54 and the steps he took to convert his initial concept into a work in progress, I'm tempted to say that a standard hayrake undercarriage might have been the easier option.

Whenever curves are introduced into a design they nearly always result in extra work, however you choose to make them. The simplest method is to prepare a template suitable for guiding a router or steering a jig past a cutter on the spindle moulder. But even that's not as straightforward as it sounds. Templates need to be accurate and there lies the first problem; how do you produce a full-scale template every bit as accurate as the finished article? Rather than shape the curved sections for his desk from solid material, Robert went down the route of producing formers onto which he could laminate strips of material. A total of six were required, three for the base frame, one for the worktop ends, one for the back rail and drawer fronts and another for the swivel drawers. For a one-off the investment involved in making jigs, templates and formers can be considerable. For batch production, however, it can mean the difference between a breakeven project and a nice little earner.

What's not obvious from the drawing is that the legs are wider apart at the front of the desk than at the rear. In plan view the undercarriage is clearly tapered front to back which in turn affects the angle at which the side and back rails meet the legs. The octagonal legs can be orientated to accept the tenons formed on the ends of the laminated frame at a consistent angle ie at 90° to one of the straight facets. The top rails however are a little more complicated requiring the tenons to be cut at an angle. To avoid having to glue the entire piece up in a single operation Robert decided to use a bridle joint for the top rails enabling them to be dropped into place once the lower part of the frame had been assembled and slotted into place.

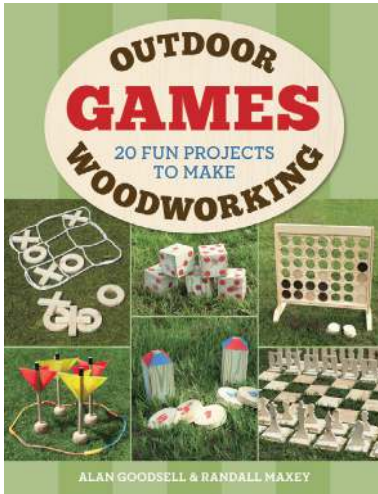
There's one other detail that I think is worth mentioning and it concerns the main middle drawer. Full depth drawers, especially when they're fully loaded, can cause tremendous strain on the construction and wear quickly. Robert's solution was to add a second or false back to the drawer so that when the drawer appears to be fully extended there is still a section contained within the carcass and with the drawer bottom extending the full depth of the drawer it becomes a secret compartment.

Next month

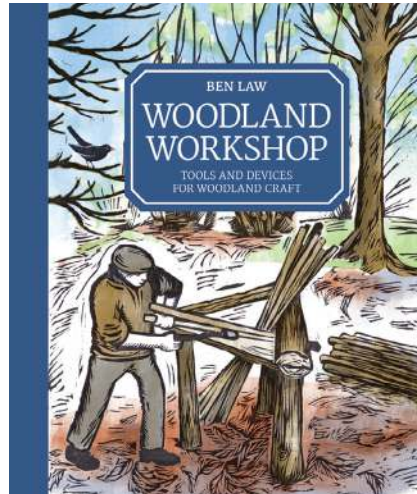
Next month we're heading back to March 1998 and issue 14 for another look at Mike Cowie's Arts & Crafts style writing desk



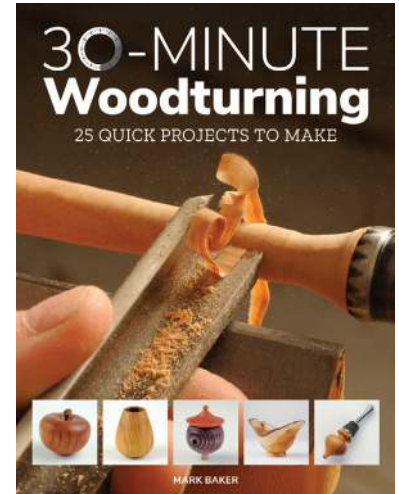
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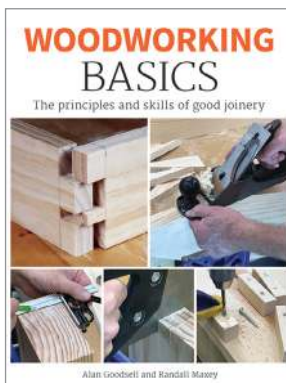
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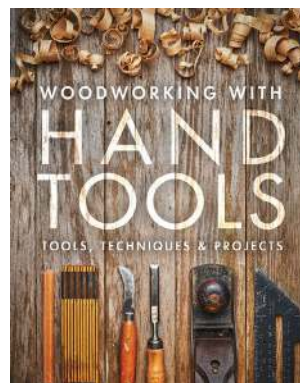
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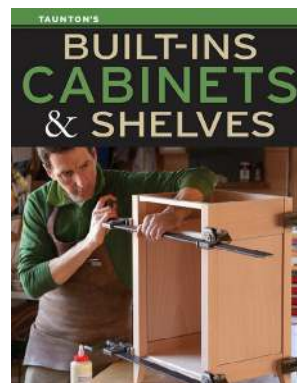
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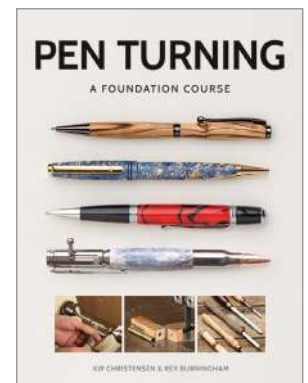
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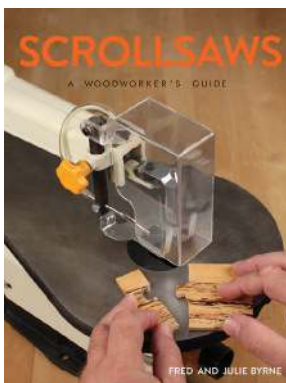
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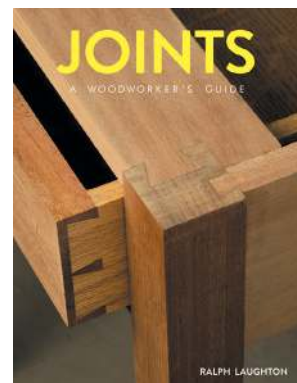
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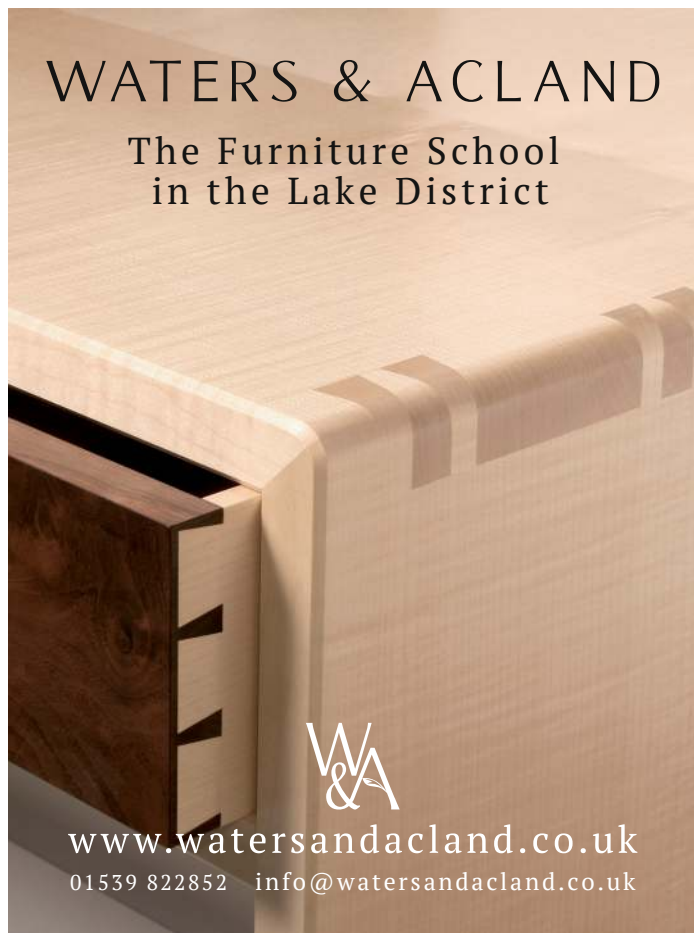


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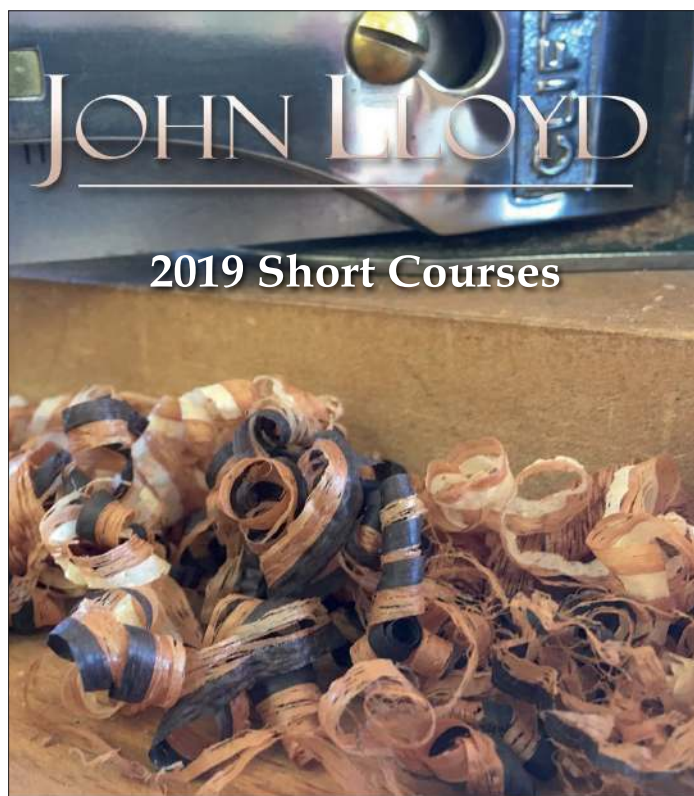


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