

WOODWORK | TURNING | TOOL TESTS | PROFILES

# The Woodworker

www.getwoodworking.com

October 2017

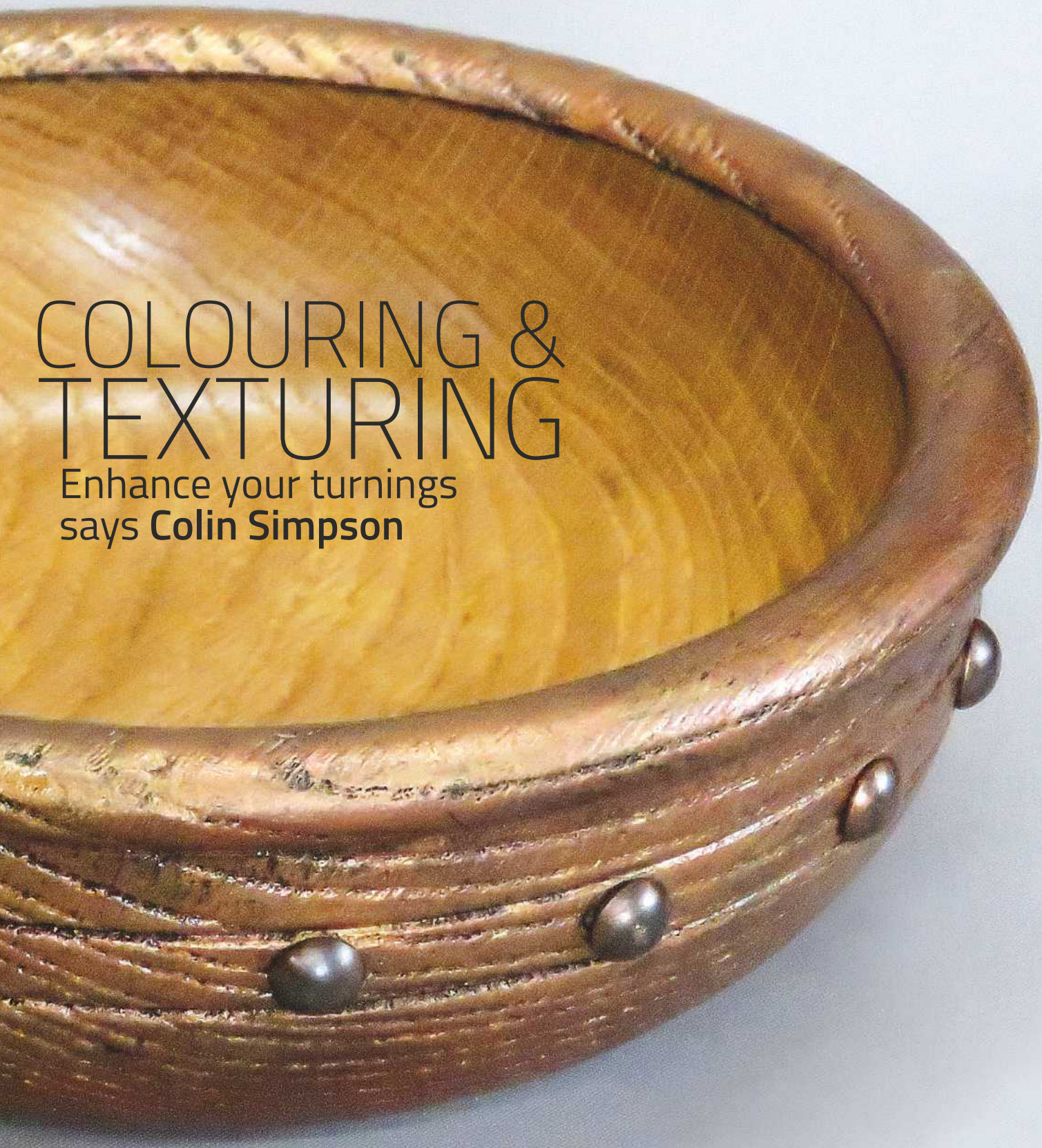


THE ORIGINAL & BEST SINCE 1901

& Woodturner

## COLOURING & TEXTURING

Enhance your turnings  
says **Colin Simpson**



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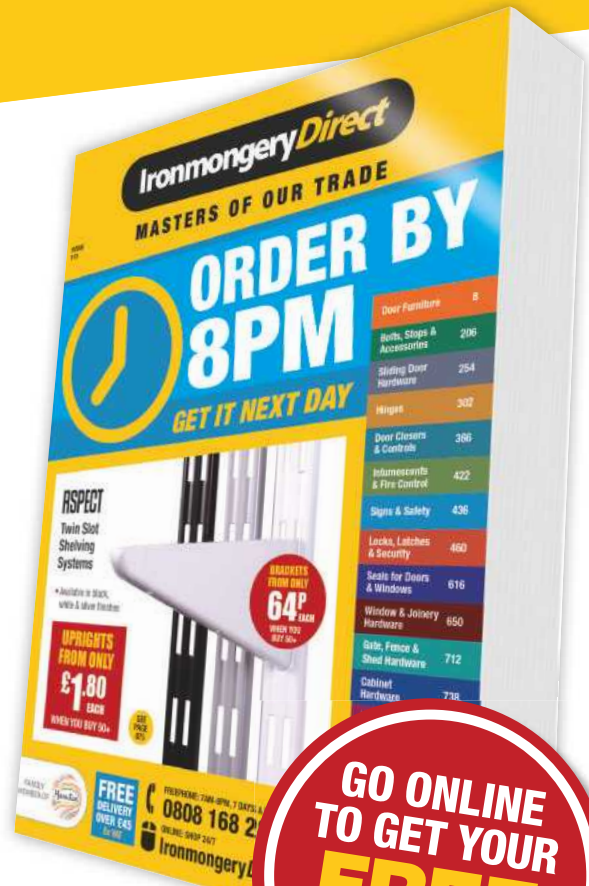
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# Welcome

When does a job start? Is it when you first pick up a tool or is it before that, when you simply have the germ of an idea? I decided to run an analysis of some recent work to see if I can't understand things a bit better and so (hopefully) continue to improve. Some jobs – not many I think – start with a mental jolt, a vision of something that just has to be made. There's almost a panic as you jot down the ideas and make a hasty sketch lest you lose it like a fading dream in the morning. These are the projects that seem to make themselves and, as you steadily go about the mechanics of cutting and joining, shaping and forming, it's as if someone else is doing the making while you just stand and supervise; a little touch here, a deft shaving there, and soon you're rewarded with the reality of a dream made real.

Sadly not every job can be so visionary or special, and it's often the case that it won't be until the evening before that you start to think about the work ahead, and then just vaguely as you consider what tools and kit you might need. Driving to site should offer an additional chance to plan and prepare, but many a time the road takes care of your thoughts and it's not until you're walking up the path with your kitbag that it dawns on you that a new job is about to start. Meeting the client is the next hurdle; I like the ones who are just leaving for work myself. While being generally of a cheerful disposition, I find that sometimes a little early morning grumpiness isn't such a bad thing; the customer will likely be glad to leave you to it and any time spent alone in thinking about a job is time very well spent indeed.

I've often thought that the way to guarantee a perfect job is to do it twice; absurd I know, but some work – especially on-site carpentry and construction – isn't always straightforward and sometimes it would be great to have a second run at things. In lieu of a time machine, though, we should instead be putting all those years of



Nearing the end of a window repairing marathon, the Editor is looking forward to starting some indoor work

experience to good use, and avoiding the simple mistakes and unnecessary difficulties that are there just waiting for us. While it can be immensely satisfying to steer a practised and economical course through the hazards and pull off a tidy, professional job on time and within budget, every now and then there'll be something that we've overlooked. This is when we need to not worry, but calmly regroup, re-plan and sort out the problem like we're just starting another job.

You can contact Mark on [editor.ww@mytimemedia.com](mailto:editor.ww@mytimemedia.com)

THIS MONTH THE EDITOR HAS BEEN:  
On the road ■ breaking glass ■ under canvas ■ in a ditch

## WOODWORK

### 24 Australian big rig

Keen toy and model maker Derek Lane jumped at the chance of building a scale model of an Australian 1988 Series II Mack Superliner, and what a great job he did!

### 32 From tree to bench – part 2

Carrying on from last month, Rick Wheaton and his fellow volunteers concentrate on making an outside work area before embarking on the shaping of the huge baulks

### 36 Making old saws sharp again

Whether you're a fan of new or old saws, Gary Cook's useful tips on resurrecting these handy bench tools will certainly pay dividends

### 38 Rawlplugs

In an advert from *The Woodworker* of October 1952, we look at a wide range of Rawlplug related products available to the homeowner, including the necessary Rawlplug Tool, which was designed to be struck with a hammer and rotated in the developing hole after every blow

### 40 Solitaire puzzle

Peter Dunsmore sets about making this well-known game a little more attractive by incorporating some fancy woodworking together with lovely American cherry and walnut to create a contrasting effect

### 46 Hand drills: on the endangered list?

Phil Davy answers the question of why many people, to this day, still choose to use a hand drill over a powered equivalent

### 50 Smooth operator

Teach yourself the techniques of tambour-making with Pete Martin's functional roll-top bread bin

### 61 Triple decker

The sturdy design of a bunk unit with pull-out bed and drawers called for appropriately robust building techniques and some quick thinking, recalls Allan Willey

### 70 An ABC of basic dovetailing

Our step-by-step guide to an essential array of dovetailing techniques

### 74 Perfect veneer joints

Ian Hawthorne shares his insider knowledge on how to achieve those near-seamless veneer joints when box-making

### 90 A changing landscape

In this instalment of his working years, Stan Clark recalls the abundance of elm trees where he grew up and how Dutch elm disease went on to affect the whole area



## 16 UNEARTHING EMERGING TALENT

The future of furniture design certainly lies in the hands of young makers, and the New Designers exhibition, which has been championing upcoming talent for the last 33 years, undoubtedly plays a pivotal role





**TURNING**

**56 Colouring & texturing – part 1**

In the first of a new mini series, Colin Simpson shows us a variety of techniques that can be used to make your turned work stand out from the crowd

**ON TEST**

**78 Bosch GSR 12V-15FC FlexiClick drill driver**

**80 NOVA Comet II VS midi lathe**

**83 CEL 14.4V impact driver**

**84 Ryobi 18V 5.0Ah battery**

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CSB1-5

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BS1

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\* V Twin Pump

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8/250	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	£260.80
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CDS300B

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CON18LI

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CON185

\*Includes laser guide

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Clarke CBS2	1200W	480	£79.98	£96.98
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MODEL: CBS190B

MOTOR THROAT SIZE EXC.VAT INC.VAT

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• Sliding Compound

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Einhell TC-MS 2112	210/30	55/120mm	£59.98	£71.98
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MOTOR THROAT SIZE EXC.VAT INC.VAT

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CBG6SB#	PRO	150mm	£54.99	£65.99
CBG6RWC	HD	150mm	£59.98	£71.98
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- Inc. mounting holes for workshop, shelf and floor

MODEL: CWTS1

ONLY £28.99 EXC.VAT £34.79 INC.VAT

**Clarke ROUTERS**

• Powerful heavy duty machines ideal for trade and DIY use

• CR2 includes 15 piece kit worth over £20

MODEL: MOTOR PLUNGE EXC.VAT INC.VAT (W) (mm)

CR1C*	1200	0-50	£46.99	£56.39
Bosch P1400ACE	1400	0-55	£86.99	£104.39
CR2	2100	0-60	£124.99	£149.99

**Clarke DRILL PRESSES**

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

• Bench mounted B = Bench mounted F = Floor standing

MODEL: SPEEDS EXC. INC. (W) EXC.VAT INC.VAT

CDP5EB	350/5	£66.99	£80.39
CDP102B	350/5	£79.98	£95.98
CDP152B	450/12	£139.98	£167.98
CDP202B	450/16	£185.00	£222.00
CDP10B	370/12	£198.99	£238.79
CDP32F	550/16	£229.00	£274.80
CDP502F1100/12	£499.00	£598.80	

**Clarke 13" MINI WOOD LATHE**

• Ideal for enthusiasts/hobbyists with small workshops

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

MODEL: CWL325V

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

**Clarke 12" DOVETAIL JIG**

• Simple, easy to set up & use for producing a variety of joints

- Cuts work pieces with a thickness of 8-32mm
- Includes a 1/2" comb template guide & holes for bench mounting

MODEL: CDTJ12

FROM ONLY £57.99 EXC.VAT £69.98 INC.VAT

**Clarke DETAIL SANDERS**

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

MODEL: WATTS EXC.VAT INC.VAT

PS105	105W	£19.98	£23.98
CDS-1V	280W	£28.99	£34.79

ALL MODELS INC. SANDING SHEETS

**Clarke POLISHING KITS**

4" to 8" FROM ONLY £27.59 INC.VAT

• With sanding belt

- \*8" whetstone & 6" drystone

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## ANY OTHER BUSINESS

From day to day there is every chance of a fresh encounter with some new or novel aspect of the diverse and hugely rewarding craft that is woodwork and woodworking. Any new sensation derived from such an encounter can generally be relied upon to stimulate our passions and to encourage us to take a different step when we next pick up our pencil or tools from the bench. Despite frequent and ongoing innovations in kit, tools and machines, the basic essence of what we all do has remained unchanged for millennia, and will probably stay that way for a lot longer yet.

Whenever we come across some clear evidence of woodworking skill from the past, another link in the unbroken chain is forged, and fresh impetus is given to the ongoing quest for higher standards. When you consider how previous craftspeople struggled with hand tools by the light of a winter

candle, the conveniences we all enjoy now surely mean we must raise our game and put in the effort to achieve the top class work we know we're capable of.

Here at *The Woodworker* we do what we can to maintain and improve our standards, and what makes it that little bit easier is the feedback we receive from you, the reader. Don't forget that the mag belongs to all of us, and I for one am greatly interested in hearing just what it is you'd like to see within its pages. Feel free to send in your comments and suggestions, and while you're at it, why not tell us about your latest project or maybe send in a photo? And if you're handy with a camera and good at the keyboard, there's always the possibility of us publishing your story for everyone else to enjoy. We look forward to hearing from you.

*Mark*

## GMIT LETTERFRACK STUDENTS SHOWCASE UNIQUE FURNITURE IN PUBLIC EXHIBITION

Over 50 unique furniture pieces designed and made by degree students in GMIT Letterfrack recently opened to the public on the campus gallery and will remain open all summer. The



'Memory Chest' by Jude Roche



Clock by Jude Roche

exhibition, entitled 'Imagination', is a diverse and creative collection of products, furniture and research, giving visitors an insight into the rich learning that takes place on this unique campus. Items selected are from students of furniture design, wood technology and the teacher education degrees.

This year, for the first time, outdoor furniture is featured in the exhibition. One of the projects undertaken by second year students involved the designing and making of a range of campus and community furniture. These included outdoor family seating, children's furniture in the nearby woods, seating for the bus stop and a stunning installation at the redesigned entrance to the campus. Many of these items were made using timber from trees that were storm-felled in Áras an Uachtaráin and given to GMIT Letterfrack by President Michael D Higgins. Even the college's reception area has been given an overhaul by students and now boasts a sleek and modern look with a stunning new mail holder for staff with a design inspired by the Wild Atlantic Way logo. The project was a collaboration involving GMIT, Connemara West, Community Employment Programme and Galway County Council.

Currently the campus is expanding its operations to include a kiln and portable saw for converting and drying Irish timber. Collaborations with COFORD and Teagasc will see staff and students research the potential utilisation of Irish-grown timber and explore ways of adding value to our home-grown forest products with the aim of supporting sustainable regional development.

GMIT Letterfrack, the National Centre for Excellence in Furniture Design & Technology, has been synonymous with the study of furniture design since 1987; to find out more see [www.gmit.ie/letterfrack](http://www.gmit.ie/letterfrack).



Stools by Andrew Bailey

## DIARY – SEPTEMBER

1 Sharpening  
 2 Introduction to wood finishes  
 4 Bird, bee and bat boxes  
 4 Scrollsaw course  
 4-8 Beginners' woodturning (5 days)  
 5 Festool demonstration day  
 5-6 Machining for restoration  
 6-7\* & 20-21 Beginners' woodturning  
 11-12 Introduction to the small lathe  
 12\* Fine-tuning hand tools  
 14-15 Introduction to milling  
 15\* Introduction to Leigh Jigs  
 18 Pen making  
 19\* Sharpening with Tormek Hand Tools  
 21-22\* Beginners' routing  
 25-29 Windsor Chair  
**Axminster Tools & Machinery**  
 Unit 10 Weycroft Avenue  
 Axminster, Devon EX13 5PH  
 Tel: 08009 751 905  
 Web: [www.axminster.co.uk](http://www.axminster.co.uk)

3-8 Beginners' small blanket chest  
 11-15 Understanding veneering  
 – making an inlaid tray  
 15-17 Woodcarving for beginners  
 15-17 Woodworking skills  
 – portable bookcase project  
 17-21 Picture framing  
 19 Woodturning – make a small bowl  
**West Dean College**  
 West Dean, near Chichester  
 West Sussex PO18 0QZ  
 Tel: 01243 811 301  
 Web: [www.westdean.org.uk](http://www.westdean.org.uk)

22-24 Steam-bent and inlaid tray  
**John Lloyd Fine Furniture**  
 Bankside Farm, Ditchling Common  
 Burgess Hill, East Sussex RH15 0SJ  
 Tel: 01444 480 388  
 Web: [www.johnlloydfinefurniture.co.uk](http://www.johnlloydfinefurniture.co.uk)

22-25 Beginners' four-day course  
**Chris Tribe**, The Cornmill, Railway Road  
 Ilkley, West Yorkshire LS29 8HT  
 Tel: 01943 602 836  
 Web: [www.christribefurniturecourses.com](http://www.christribefurniturecourses.com)

30-1 Greenwood stool making  
 30-1 Square basket making  
**Greenwood Days**, Ferrers Centre  
 Staunton Harol LE65 1RU  
 Tel: 01332 864 529  
 Web: [www.greenwooddays.co.uk](http://www.greenwooddays.co.uk)

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# The Woodworker Timber Suppliers Directory – OCTOBER 2017

**Adhectic Ltd** (Berkshire)

Tel: 01235 520 738

Web: www.adhectic.co.uk

**A Harrison** (Northants)

Tel: 01536 725 192

Web: www.aharrisonwoodturning.co.uk

**Bennetts Timber** (Lincolnshire)

Tel: 01472 350 151

Web: www.bennettsttimber.co.uk

**Black Isle Woodturning** (Scotland)

Tel: 07842 189 743

Web: www.blackislewoodturning.com

**Brodies Timber** (Perthshire)

Tel: 01350 727 723

Web: www.brodiesttimber.co.uk

**Brooks Brothers Timber** (Essex)

Tel: 01621 877 400

Web: www.brooksttimber.co.uk

**C&G Barrett Ltd, Cilfiegan Sawmill**

(South Wales)

Tel: 01291 672 805

Web: www.cilfiegansawmill.com

**D Emmerson Timber** (Lincolnshire)

Tel: 01507 524 728

Web: www.emmersontimber.co.uk

**Earlwood Interiors** (West Midlands)

Tel: 01564 703 706

Web: www.earlwoodinteriors.co.uk

**English Woodlands Timber** (West Sussex)

Tel: 01730 816 941

Web: www.englishwoodlandsttimber.co.uk

**Exotic Hardwoods** (Kent)

Tel: 01732 355 626

Web: www.exotichardwoods.co.uk

**EO Burton, Thorndon Sawmills** (Essex)

Tel: 01277 260 810

Web: www.eoburton.com

**Eynsham Park Sawmill** (Oxfordshire)

Tel: 01993 881 391

Web: www.eynshamparksttimber.co.uk

**FH Ives** (Essex)

Tel: 01268 732 373

Web: www.fhives.com

**Fulham Timber** (London)

Tel: 0208 685 5340

Web: www.fulhamtimber.co.uk

**G&S Specialist Timber** (Cumbria)

Tel: 01768 891 445

Web: www.toolsandtimber.co.uk

**Good Timber** (Northamptonshire)

Tel: 01327 344 550

Web: www.goodtimber.com

**Interesting Timbers** (Somerset)

Tel: 01761 241 333

Web: www.interestingtimbers.co.uk

**ISCA Woodcrafts** (South Wales)

Tel: 01633 810 148/07854 349 045

Web: www.iscawoodcrafts.co.uk

**John Davis Woodturning Centre**

(Hampshire)

Tel: 01264 811 070

Web: www.johndaviswoodturning.com

**Joyce Timber** (London)

Tel: 0208 883 1610

Web: www.joycetimber.co.uk

**Lincolnshire Woodcraft** (Lincolnshire)

Tel: 01780 757 825

Web: www.lincolnshirewoodcraft.co.uk

**Nottage Timber** (South Wales)

Tel: 01656 745 959

Web: www.nottagegetimber.co.uk

**Ockenden Timber** (Powys)

Tel: 01588 620 884

Web: www.ockenden-timber.co.uk

**Olivers Woodturning** (Kent)

Tel: 01622 370 280

Web: www.oliverswoodturning.co.uk

**Oxford Wood Recycling** (Oxfordshire)

Tel: 01235 861 228

Web: www.owr.org.uk

**Stiles & Bates** (Kent)

Tel: 01304 366 360

Web: www.stilesandbates.co.uk

**Scadding Timber** (Avon)

Tel: 01179 556 032

Web: www.scadding-son-ltd.co.uk

**Scawton Sawmill** (North Yorkshire)

Tel: 01845 597 733

Web: www.scawtonsawmill.co.uk

**St. Andrews Timber & Building Supplies**

(Scotland)

Tel: 01316 611 333

Web: www.standrewsttimbersupplies.co.uk

**Surrey Timbers Ltd** (Guildford)

Tel: 01483 457 826

Web: www.surreytimbers.co.uk

**Sykes Timber** (Warwickshire)

Tel: 01827 718 951

Web: www.sykestimber.co.uk

**The Timber Mill** (Cornwall)

Tel: 07966 396 419

Web: www.thetimbermill.com

**The Wood Recycling Store** (East Sussex)

Tel: 01273 570 500

Web: www.woodrecycling.org.uk

**Thorogood Timber Ltd** (Essex)

Tel: 01206 233 100

Web: www.thorogood.co.uk

**Timberman** (Carmarthenshire)

Tel: 01267 232 621

Web: www.timberman.co.uk

**Tree Station** (Lancashire)

Tel: 01612 313 333

Web: www.treestation.co.uk

**UK Timber Ltd** (Northamptonshire)

Tel: 01536 267 107

Web: www.uk-timber.co.uk

**Waterloo Timber Ltd** (Lancashire)

Tel: 01200 423 263

Web: No website

**Wenban Smith** (West Sussex)

Tel: 01903 230 311

Web: www.wenbans.com

**W L West & Sons Ltd** (Surrey)

Tel: 01798 861 611

Web: www.wlwest.co.uk

**Yandle & Sons Ltd** (Somerset)

Tel: 01935 822 207

Web: www.yandles.co.uk

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## BENTLEY WOODFAIR 2017 – A REAL TREAT FOR WOOD LOVERS

How in its 21st year, the Bentley Woodfair is almost upon us (15, 16 & 17 September), so don't miss your chance to attend one of the woodworking calendar's most loved events. If you have a passion for woodlands, forestry, timber, trees and woodcrafts then this show will definitely appeal and there's something to interest everyone. Set in the stunning Sussex countryside, the whole site holds two fields of trade stands, exhibits and displays as well as a wonderful woodland full of a host of demonstrations and activities for all. If you want to do your bit to support local rural businesses and crafts, then come along to Bentley and see what's in store. With demonstrations of machinery, tree climbing, children's activities, lots of local food, beer tent and a really great atmosphere, what's not to like? And if you'd like to find out more about the event, see the Editor's feature in *WW* August, which will hopefully give you a taste of what's in store. To find out more, see [www.bentley.org.uk](http://www.bentley.org.uk).

Steve Jones and his wagon of curiosities at Bentley Woodfair

## BIRD CARVING IN BAKEWELL

The 2017 BDWCA (the British Decoy and Wildfowl Carvers Association) Annual Show and competition – The Festival of Bird Art – will be held on 9–10 September in Bakewell, Derbyshire. The competition is open to all members and forms part of the annual National Bird Carving Championships. You can expect to see a wide variety of bird and wildfowl carvings at Youth, Novice, Intermediate and Advanced levels, as well as demonstrations of wildfowl carving, painting, stick making and decorative techniques, all of which will take place over the weekend. Stockists of carving supplies, books, equipment, paints and wood for carving will also be present together with well known wildlife artists. In this year's raffle visitors have a chance to win, for £1 per ticket, a carving of an award-winning wren by Richard Rossiter. To find out more, see [www.bdwca.org.uk/bakewellshow.html](http://www.bdwca.org.uk/bakewellshow.html).



BDWCA Bird Carving British Champion 2016 – 'Lapwing Display Flight' by David Clews

## GET READY FOR THE 7TH EUROPEAN WOODWORKING SHOW

The ticket office is now open for this fantastic event, so don't miss out on your chance to purchase discounted advance tickets. The event will take place from 16–17 September at the magnificent Crossing Temple Barns, which is situated between Braintree and Witham in Essex.

This truly is a woodworking show with a difference and you can expect to see a wide range of demonstrators and woodworking aficionados from around the globe. The show is demonstration led with an eclectic mix of workers in wood from furniture makers to basket makers, chair makers to woodturners, carvers, bodgers, pryographers, knife makers, marionette makers, Japanese joinery, and toy makers to toolmakers.

Expect to see an diverse mix of trade stalls selling hand tools, small workshop machinery, sharpening supplies, finishes, tools, timber and much more, including horse logging and story telling. This is a family friendly event with quiet areas (the walled herb garden), excellent show catering, open spaces, workshops and have-a-go sessions, a public vote carving competition, St. Peters Brewery and much more. For further information, see [www.europeanwoodworkingshow.eu](http://www.europeanwoodworkingshow.eu).



Inside the historic Crossing Temple Barns – the setting for the 7th European Woodworking Show

## MAKITA'S NEW 10.8V BL ROTARY HAMMER CXT IS A 'MIGHTY MINI'

The new Makita HR166D 10.8V BL rotary hammer drill, which features Brushless motor technology, has the appearance and features of its 18V 'big brother' version but is a third smaller in overall dimensions.



This new rotary hammer will run up to 680rpm and generates up to 4,800 impacts per minute.

The overall body design delivers excellent machine balance with the Brushless motor and driveline positioned directly above the battery, with the rear anti-vibration handle and side-handle providing ideal working control of this powerful but tiny machine. Weighing just 2.0kg with a 4.0Ah battery fitted, this compact and lightweight rotary hammer drill features an electric brake, variable-speed trigger and a constant speed control, plus LED job light.

The SDS-PLUS chuck features the proven Makita one-touch sliding operation. It has two operating modes selected by the rotary switch on the body. It can operate in rotary-only mode for drilling wood or metal and rotary hammer mode, bringing the powerful hammer action into play. This 'mighty mini' will quickly become a popular selection for compact power together with Makita's proven and robust reliability. It is supplied complete with two 4.0Ah batteries and charger in a Makpac case, or as a body only unit for those operators with an adequate numbers of 10.8V batteries.

Two angle drive tools have also been added to the 10.8V range. The new Makita TL064D angle impact driver CXT runs up to 2,000rpm, can deliver up to 3,000 impacts per minute and generates a powerful 60Nm maximum tightening torque, and the new Makita TL065D 10.8V angle impact wrench CXT with 10mm square drive will drive both an M12 and a M8 high tensile bolt.

Both machines feature aluminium drive heads with phosphorescent protection ring, variable-speed trigger, electric brake and forward/reverse selection. Where access is restricted these compact and slim angle tools will prove ideal for many applications.

To find out more, see [www.makita.com](http://www.makita.com).

## SAW BLADES WITH BITE

The CraftPro range of saw blades from Trend is designed for a professional finish in wood, MDF, particle board, hardwood and plywood. They are Microgranular Tungsten Carbide-tipped to allow the cutting of abrasive materials and blade sizes range from 120-350mm, catering for cordless saws to bench saws. Prices start from £22.25; see [www.trend-uk.com](http://www.trend-uk.com) to view the full range and to see a video of the impressive Tungsten Carbide-tipped blade in action.



## FANGFEST 2017

Taking place from 2-3 September in Fangfoss near York, this special event promises a celebration of traditional crafts where you can come and join in the fun. With free entry, you can see all manner of demonstrations, including traditional pole-lathe turning, rocking horse carving, stained glass, basking making, a flower festival as well as a classic car and motorcycle show, plus much more. Find out further details by visiting the website: [www.fangfest.org.uk](http://www.fangfest.org.uk).



A rocking horse demonstration at a previous event

## DRESS LIKE A PRO

Dickies has just launched its new Pro range, a collection that combines practicality, innovation and safety with a modern, professional look – offering tradesmen a fresh new alternative to traditional workwear.

The Dickies Pro range has been created to meet increasing demand for smarter and more durable workwear that doesn't compromise on the comfort that tradesmen expect.

Designed using flexible materials such as Stretch Tencate® – plus Coolcore® to regulate moisture and Cordura® to offer extra defence against wear and tear on elbow panels and knees – the range also incorporates UV protection (UPF 45+) and is made using a durable hypoallergenic fabric.

A high level of attention to detail has gone into the range and features include pockets created specifically to fit essential items such as a ruler, smartphone and kneepads, plus ergonomic side seams.

Available in five colour-ways, the smart two-tone collection includes trousers, jackets, T-shirts, caps and belts and can be worn as separates or as a coordinated outfit for a more professional finish.

The full Dickies workwear collection, including the Dickies Pro range, can be purchased online via [www.dickiesstore.co.uk](http://www.dickiesstore.co.uk).



## SUPERBIKE TO 'WORK OF ART' WINS FORFAR MAN DEMARCO PRIZE



A Forfar man who recently graduated from Scotland's only furniture design school has won the prestigious Richard Demarco Design Prize. Nick Smith transformed his Kawasaki Ninja 600cc motorbike into a "work of art," according to Professor Richard Demarco CBE, Scotland's leading arts commentator. Nick is now starting Strathmore Restore from a new workshop in Forfar, and will be specialising in furniture restoration, kitchen design and creating bespoke furniture.

Nick's project during his year at the Chippendale International School of Furniture was to painstakingly create intricate burr ash veneers with walnut accents to replace the bike's original plastic fairings. He also gilded the windscreen and wing mirrors and, to create the final "wow" factor, highlighted parts of the new veneered fairings with 23.5 carat gold.

"Nick's achievement has been to take something mass-produced and, with artistic talent and infinite skill, recreate it as a unique work of art," said Professor Demarco.

Nick will be splitting his time between life as a woodworker and his other entrepreneurial venture, Strathmore Brewery – a new Forfar artisan brewery that has just started supplying a range of ales that it says "reflect the heritage and soul of Scotland."

He is a graduate of Robert Gordon University where he studied robotics, then going on to work as a control and automation specialist on large-scale computer systems.

Nick said that "winning the award is an unexpected dream come true. Combining my new found passion working with wood, with a long standing passion for motorcycles, was hard work but a lot of fun, too."

Anselm Fraser, principal of the Chippendale school, said that "the delicate skills involved in bespoke furniture design and making can be applied in different ways, and Nick has demonstrated real skill and talent in turning something manufactured into an utterly original thing of beauty." To find out more about the school and the courses on offer, see [www.chippendaleschool.com](http://www.chippendaleschool.com).

## WHAT'S NEW FROM BRIDGE CITY?

### Chopstick Master Jig

As woodworking jigs go, this is one of the most well thought out we've seen in a while – it's a joy to use. As with all the best jig designs, this one is foolproof, guaranteeing perfect results every time.

Using the jig you can plane a 7mm blank into a tapered square, put an octagonal taper onto the last 100mm and trim the chopstick top into a perfect four-sided pyramid shape. In addition, the jig sets the plane's skids to the correct depth and includes a honing surface for the plane blade on its underside.

The Chopstick Master includes a Bridge City Tools HP-8 block plane, as well as a 30° honing guide and abrasive strip for sharpening the blade. The jig comes with two inserts: red for producing chopsticks with a 5mm tip and green for a narrower 2mm tip, as well as a set of clamping wedges to secure your blank. In order to trim the top of your chopsticks, there is a saw blade and sliding arm with a length stop.

To get you started, the box contains 20 blanks in various hardwoods, 10 fabric chopstick presentation bags to keep your latest production clean and tidy, and a small bottle of chopstick finishing oil completes the package.

The Chopstick Master allows anybody, regardless of experience, to make a pair of high quality chopsticks in less than 15 minutes and, with practice, in 5-6 minutes. The end product looks truly classy; the bonus comes in the immense pleasure gained from the process of making the chopsticks. It is currently priced at £299.94.

### Blanks & bags

The Chopstick Master blanks and bags include 20 accurately dimensioned chopstick blanks in a variety of hardwoods. These allow you to make 10 high quality and great looking pairs of chopsticks. The 10 drawstring presentation bags feature the phrase 'Chopstick Master' printed in Chinese characters as well as an attractive red or blue print design (five of each). A pair of handmade chopsticks in a presentation bag makes an excellent and unusual gift. Currently priced at £29.66 for the set, see [www.axminster.co.uk](http://www.axminster.co.uk). Prices include VAT and may be subject to change without notice.



## OSMO INTRODUCES A NEW RANGE OF TOOLS



Osmo UK has recently introduced a new range of quality tools to its portfolio of products, including an innovative Osmo System Telescopic Handle.

The assortment of tools aims to aid users in creating a premium finish on their Osmo projects and ease product application.

This new offering of tools includes a wide selection of the highest quality brushes, rollers, scrapers, mops, pads and machines, each of which are specially designed to provide the perfect criteria for the intended appearance or effect that is desired. Whether users are looking to preserve the natural colour of the wood, add a subtle washed effect or highlight the grain of the wood itself, there is a tool for it all. While protection is assured, the results will also be aesthetically pleasing. Tailored to suit various surfaces and needs, the Osmo tools and accessories collection provides users with the requirements for the best application and maintenance of wooden surfaces.

The all-new Osmo System Telescopic Handle

is a universal attachment for the full assortment of application tools including:

- Osmo Floor Brush
- Osmo Floor Roller Set
- Osmo Small Roller & Brush Set
- Osmo Decking Brush
- Osmo Decking Brush Set
- Osmo Pad Holder with Joint

Osmo tools are now easier than ever to use, thanks to the Quick-Connect technology that allows for the convenient attachment of the telescopic handle and the SoftTouch Grip, for user comfort. The back-preserving, adjustable length of the handle allows users to effortlessly extend the brush, in order to apply product on floors, decking and hard-to-reach areas with ease. The handle simply connects to the joint with a secure fitting and has an adjustable pole, which can be extended in length from 120-200cm.

To find out more, see [www.osmouk.com](http://www.osmouk.com).



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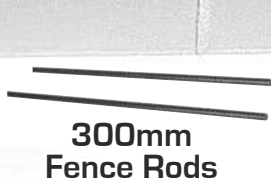
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We look forward to seeing you at **'THE' TOOL SHOW 2017** at Kempton Park Racecourse at Sunbury-on-Thames, on the weekend of 6-8 October 2017. **'THE' TOOL SHOW** is the UK's premier hand, power tools and woodworking machinery exhibition for DIY amateurs and trade professionals and is now in its 17th year. Don't miss this opportunity to get hands-on with the very latest tools and equipment demonstrated by experts from all the leading brands. Visitors can pick up exclusive deals and special offers, which are **ONLY** available at the show, plus the opportunity to take part in our popular Free Prize Draw. Admission is **FREE** and there is ample **FREE** parking. Make a note in your diaries and visit [www.thetoolshow.com](http://www.thetoolshow.com) for more details.



## FESTOOL CORDLESS COMPACT SANDERS

**MANUFACTURER:** Festool

**D&M GUIDE PRICE:** From £239.95

**FESTOOL**

The new cordless compact sanders from Festool provide cordless mobility with performance equal to that experienced when working from an electrical socket, no matter where you are. They impress with a capacity to remove extensive material and excellent endurance thanks to an 18V battery pack and brushless EC-TEC motor. With a low weight and optimum centre of gravity, they guarantee comfortable cordless work. Thanks to plug-It mains adaptors, they can be converted into mains-powered machines quickly and easily for continuous electrical operation. In short: The RTSC, DTSC and ETSC are truly professional sanders – with or without a cable.

The new sanders come in three ergonomic one-handed models:

RTSC 400 cordless orbital sander – for small and narrow surfaces; DTSC 400 cordless delta sander – corner sander – for small surfaces, edges and tight corners; and the ETSC 125 cordless random orbit sander – for sanding on shaped and curved parts.

The powerful 18V 3.1Ah ERGO battery pack in combination with the brushless EC-TEC motor ensures constant sanding and power similar to that of a mains-powered tool. However, for all applications which require an even longer operating performance, the 18V battery pack can be replaced with the Plug-It mains adaptor; this creates a mains-powered machine with an unlimited running time in combination with the Plug-It cable – ideal in conjunction with a Festool mobile dust extractor. All models come as basic body only, plus versions with two batteries and charger and set versions with two batteries, charger plus Plug-It mains adaptor (also available separately).



*All the sanders can be used with 18V 3.1Ah ERGO battery or mains using Plug-It adaptor.*

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# Unearthing emerging talent

The future of furniture design certainly lies in the hands of young makers, and the **New Designers** exhibition, which has been championing upcoming talent for the last 33 years, undoubtedly plays a pivotal role



## FURTHER INFORMATION

The dates for the 2018 event have already been set, and are as follows:

**Part 1:** 27–30 June 2018

**Part 2:** 4–7 July 2018

To find out more, see the website:

[www.newdesigners.com](http://www.newdesigners.com)

Some shows can become annual events in our lives, and will generally come to be relied upon to deliver pretty much what we hoped for. One of my favourites – and one which rarely disappoints – is the New Designers show. This event provides an opportunity for recently graduated students to display the projects and ideas that they've been working on in the final year of their time at university. It's a very sizeable show, spread over a couple of weeks and divided into two parts: one is fashions, textiles, jewellery and glass; the second part is furniture, product and industrial design. Needless to say it's part two that I went up to Islington in North London to see (although I wouldn't mind visiting the fashion and textiles part of it one year), and I'm pleased to report that it proved to be a very worthwhile visit.

### Clean & minimal design

There's often a particular 'vibe' or unconscious theme apparent in the huge hall (it used to be the Royal Agricultural Hall and hosted livestock shows and similar events up until 1938), and this year nearly all the furniture and wooden artefacts on display were of a clean and minimal nature. Think Scandinavian design or high-end IKEA and you're almost there. A large majority of the work was finished to a very high standard, and one or two pieces were really outstanding. Much of the making had been carried out on CNC machines (one or two on the four-axis models, which enable 360° machining of a single component), but much of it by hand as it always has been.

### Commendable work

As ever, I was impressed with the ideas on show, for after all, this is the best part of an event like New Designers. When, like me, you've been around a bit, you can often fall ▶



'Split' – an armchair and leg-rest combination in ash and leather by Jack Green. A triumph of CNC machining



'Tall Desk' in American cherry. Sized to accommodate a laptop and notebook; the drop down well is in ebonised oak



'Ripple Desk' by Molly McDowell in walnut and ash – note Corian corners to legs



'Obscura' – a dramatic corner seat in scorched black ash by Julian Martinez. It reflects the maker's Argentinian background (in my opinion)



Oak coffee table with folded steel legs by Brandon Barron. Mid 20th-century styling meets contemporary technology

into the trap of thinking that everything has been done and that there's nothing new or original left in the world. It only takes a trip to a show like this to realise just how wrong one can be, and to rejoice in the work on display there.

The making skills among the various universities were nearly all very good and, although it's hard to choose a stand-out favourite, I felt the overall standard of work at the Building Crafts College was worthy of commendation, with Robinson House Studio (Marc Fish's enterprise) and the Chippendale International Furniture School my favourites from the specialist colleges.

**The future of furniture design**

Over the next few issues, I hope to be able to bring some of the projects pictured here to the pages of our magazine so that we can take a closer look and see how things have been done. But for the time being, let's just be glad we've seen a small sample of what's out there, and also had a wee glance into the future of furniture design and the constantly changing world of wood.

My apologies to anyone whose name I may have spelt wrong (or omitted entirely); please don't hesitate to get in touch and we'll set the matter straight. And in the meantime, if any readers have some particular favourites I'd love to hear about them. **WW**



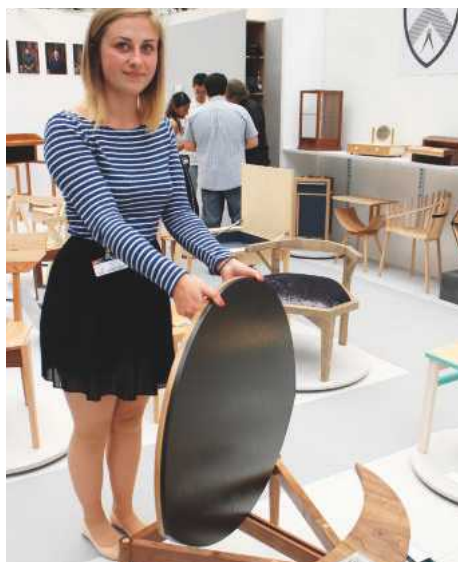
A clay model prototype takes shape under skilled (and sadly anonymous) hands



Modular wall unit by David Szilagy. By changing one or two of the components, the unit looks great in either home or office



Walnut cabinet on vintage camera-styled tripod base by Carolin Reichert. Lined with factory furniture mouldings, with working pin-hole camera in lower section (see photograph on wall behind)



Reversible table in walnut by Finola Quigly



An ingenious machine that creates decorative clay pottery ware by Gavin Jones



Humidor with cedar interior and burr walnut veneer by Finola Quigly



Part of the 'Moravian' collection, stools and benches based on a 600-year-old design, by Jasmine Craven-Huffer



Sideboard with oak end-grain 'tile' decoration by Jack Butterworth; inspired by the flapper dresses of the 1920s – note gun barrel knobs



A set of contemporary cheese knives in brass and oak by Jessica Cooil



Upholstered armchair and footstool in ash by Felix Smith



A very stylish maple bicycle by Toby Rix



'Akin' stool in oak by Philippa Lobb. Designed as a bar stool – note finger joints to seat back



'Rownd' – the award-winning drinks trolley by Rowena Edwards. Stable, all terrain drinks dispenser, which is both practical and fun



'Eco Guitar' by Sam Ryan. Avoiding hardwoods the body of this classical instrument is laminated bamboo



The 'Blinker chair' and side table/desk in upholstered oak by Tom Jenkins



Upholstered storage armchair in formed ply from Will Dredge of De Montfort University



A timber-framed kayak made using recycled milk containers by Zoe Jo Rae of the University of Brighton – note handmade tools upcycled to make the job

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## ★ STAR LETTER

### Art or craft?

Dear Mark,

How fortunate we are to have such an enlightened Editor who embraces innovation and changing attitudes. But it wasn't always like this!

A recent discussion at my carving club ([www.cornwallwoodcarvers.co.uk](http://www.cornwallwoodcarvers.co.uk)), regarding the relative merits of carving and turning, reminded me of a rather acrimonious debate in an issue of *The Woodworker* from 1977 as to whether carving was craft and art.

In those days, *The Woodworker* ran an annual carving competition with a specified subject such as 'gnome on a toadstool' (you know the sort of thing) with the prizes being presented at the annual Woodworker Show, and in 1977 they went out on a limb and introduced categories for both 'in the round' and 'relief' carvings.

The same year, a Mr. Trubridge had the temerity to suggest that the categories might be extended to include ABSTRACT carvings. The Editor's response was explosive: "... a viewpoint with which I have no sympathy... it shrieks of defeat... an insult to the ability that lies in the hand... it is third rate... I say that it is rubbish. There will be no abstract section as long as I have anything to do with it – never, ever." Needless to say that 'abstract' never made it into the competition.

I attach a photo of my own work – crafty rather than arty! My earliest memories of *The Woodworker* are reading my Grandfather's copy (he died in 1948).



'Drawing Hands' carving by Mike Denney

Keep up the good work, Mark.

Regards, **Mike Denney**

Hi Mike,

*As with much in the world of late, things are changing, and in my opinion woodcarving as well is evolving for the better. Any carving requires a modicum of art, and I applaud anyone who takes the time to embark on and finish a carved piece.*

*Part of me would like to organise a carving competition, but we'd need a sponsor to pay for the extra work involved as we're all part-time and fully stretched as it is. I'm glad you're enjoying the mag; your sort of feedback makes it feel like it's all actually worthwhile.*

All the best, *Mark*

### Woods for intarsia

Dear Editor,

Having produced some furniture in the past, I have now moved to a more compact form of woodworking: intarsia. Obtaining small pieces of various hardwoods of different shades seems virtually impossible in this country. Consequently I have tried dyeing wood, such as mahogany and others, although not entirely successfully. The problem is the different degree of dye take up between end-grain and the rest of the wood, with marked shade variations, as I'm sure you know.

Any ideas on how I can prevent this, please, perhaps with a form of treatment prior to dyeing? Many thanks for any help.

Regards, **Ted Lockyear**

Hi Ted,

*I don't know whereabouts you are, but if there's nowhere near you retailing hardwoods, you could do what a lot of people do and turn to the internet. I just had a look on eBay for 'hardwood offcuts' and there's quite a selection out there. Similar sites like Gumtree will also be worth exploring.*

*If this route doesn't appeal to you, then you should be looking at some kind of stain block to prevent irregular dyeing of your timber. At a pinch you could get away with a clear matt varnish, but I know there are proprietary products out there designed for this specific purpose. I suspect a fair bit of experimentation will be called for.*

*Good luck with it all and please let me know how you get on. Mark*

### Jiggery pokery

Hello Mark,

I am always interested to read the articles submitted by readers about the projects they have completed and confess that, for me, this is one of the major attractions of your splendid magazine. Indeed, my wife casts her eye over these features and it was Phil Davy's elegant and traditional Versailles planters, published in the June 2017 edition, which appealed to us both.

We bought a couple of large, square plastic pots from a discount store and then amended the dimensions of Phil's planters to accommodate. I did not have any suitable matchboard, so elected to instead use 9mm exterior grade ply for the panels. After a bit of head-scratching, my Dowelmax drilling jig made accurate work of drilling two staggered dowels in each corner joint and all the rest of

the construction was virtually as per Phil's article, even down to purchasing the undrilled 50mm birch balls, which I sourced on eBay.

To drill the holes in the balls, I made a simple jig from a few scraps of timber. Each half of the jig combined a 35mm flat-bottom Forstner bit hole with a concentric 10mm hole. Both halves of the jig are drawn together by wingnuts to firmly grip the birch ball and present it perpendicular and tangential for drilling. It all came out fine.

Best wishes, **Chris Finch**

Hi Chris,

*I'm glad to hear that the planters came out nicely, and I'm impressed with the ball-drilling rig. I find that any sort of machining operation on spherical stuff and cylinders is always a bit testing. Mark*



Chris' ball-drilling rig for drilling 50mm birch balls

**GET IN TOUCH!** Don't forget, we're always keen to see your photos, so please don't hesitate to send them in if you've snapped something of interest recently.

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**NEW**



Nick Zammeti



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David Lowe





# Australian BIG RIG

Keen toy and model maker **Derek Lane** jumped at the chance of building this scale model of an Australian 1988 Series II Mack Superliner, and what a great job he did!

**I** was asked to build this model and being someone who enjoys toy and model making with wood, I jumped at the chance and challenge this would bring. The plans are from Australia, courtesy of Roger Jenkins (see details at end of article).

### Studying the plans

The first thing I did on receiving the plans, as I do with anything, was to sit and study them. I noticed that the build used mainly plywood, but as I like to use and see natural wood in my builds, unless I intend to paint them,

I chose to use tulipwood and a mixture of others I had available, which I will reference as I go.

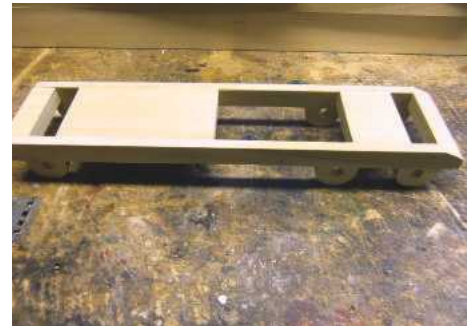
### Chassis

With this set of plans there are two types of chassis that can be made: one for homemade wheels and the second for shop-bought wheels. I set out with the intention of making my own, but as you'll see later, in the end I decided to go with bought wheels, which I then modified.

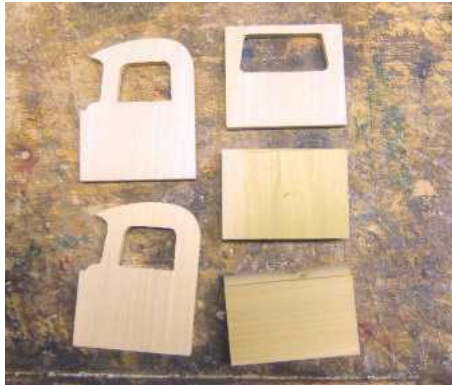
Before I started the build, I spent some time preparing the wood on my surface planer and thicknesser, and as always, I prepared more



1 The two chassis members, the spacers marked out and cut to size, and the axle holes marked and drilled



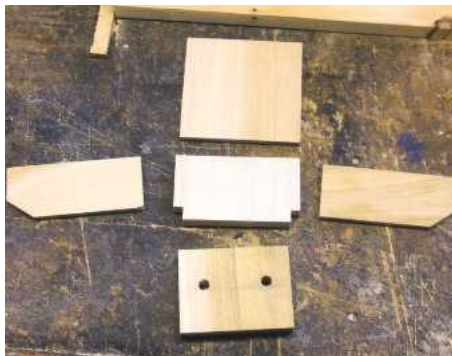
2 Chassis now assembled and glued together



3 The cab components cut out along with their apertures



4 The cab assembly glued together



5 The sleeping quarters are cut out..



6 ... followed by the window opening

that were not square in shape to transfer the shape onto the wood; the cab parts were all cut out as per the templates or measurements as were all the apertures (photo 3).

I did a dry fit and held it with clamps so that I could mark the top profile of the front wall at the top, then shaped it with a few dry fits to check everything was correct. Once I was happy, I glued the assembly together (photo 4) along with making the seats and gluing those in.

I applied a finish at this stage, which I find easier to do now rather than later when fully assembled, ensuring to mask any points that require glue applying later, such as the roof.

Following the same procedure as the cab, the sleeping quarter parts were then cut out (photo 5) as well as that of the window opening (photo 6).

The only parts not shown on the plans, but which do get a small mention, are the two spacer pieces beside the window panel (photo 7).

The instructions state that you can fill this gap as I have done or just leave it open, as the exhaust stacks will cover it. Everything is glued up this time as you can't see into the part.



7 The two spacer pieces beside the window panel

than required – there's nothing worse than having to stop halfway through to machine another piece.

The first thing that needs to be made is the chassis as this is the foundation for all of the other bits and pieces. The two chassis members and the spacers need to be marked out (photo 1) and cut to size as well as the holes for the axles as it is easier to do this before assembly (photo 2).

### Cab, sleeping quarters & engine cover

I decided to deal with the cab, sleeping quarters and engine cover as separate sub-assemblies. To start, I used graphite paper for those parts



**8** The back plate and tank are both turned from pieces of walnut



**9** Tulipwood is used to make a couple of fins...



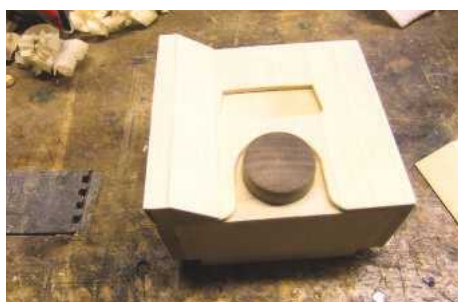
**10** ... which direct wind flow out and around a trailer

Because of this, I omitted adding a finish. The only other main parts to the sleeping cabin are the back plate and a tank, which I turned using some pieces of walnut (**photo 8**). There are also a couple of fins for directing wind flow out and around a trailer, and these are made from two pieces of tulipwood, as used for the main construction (**photos 9 & 10**). The left-hand fin, glued in place with the right-, is still to be added (**photo 11**).

The engine block is the last of the major components, and this is cut with two tapering sides back to front. As before, this was made using a solid piece of tulipwood (**photo 12**).

#### Grill

It was now time to move on to some of the little bits that would start to add character to the truck. I used mahogany to make up the grill surround and once dry, the top edges could be rounded over (**photo 13**). For the grill detail, I had some small walnut dowel left over from another project. I cut these to the correct length so they would fit in the front grill surround and then glued these in place. I found that these are small enough to not require the use of clamps (**photo 14**).



**11** One of the fins fitted, with one still to be glued in place



**13** Mahogany was used to make up the grill surround



**12** The engine block is cut out of a solid piece of tulipwood

#### Mud guards

Again, using walnut, I cut out the two mud guards for the front. I made a couple of templates and stuck these down with spray glue to aid the cutting process (**photos 15 & 16**). I made a couple more templates, as previously, but this time stuck them to some very thin ply, which would form the detail around the lower edge of the mud guards – unfortunately I forgot to take a photo of this step but it can be seen in the completed model.

#### Door detail

For adding the door detail on the cab and sleeper cab, I decided to use a pyrography machine to burn these on. In the instructions, the doors of the sleeper cab call for the use of thin ply, which I didn't feel looked right (**photos 17 & 18**).

#### Cab roof

After cutting a block to the correct size and gluing it in, the roof of the cab was then added



**14** The small dowels glued in place to form the grill



15 Cutting out one of the mud guards with a template in place



16 The two completed mud guards

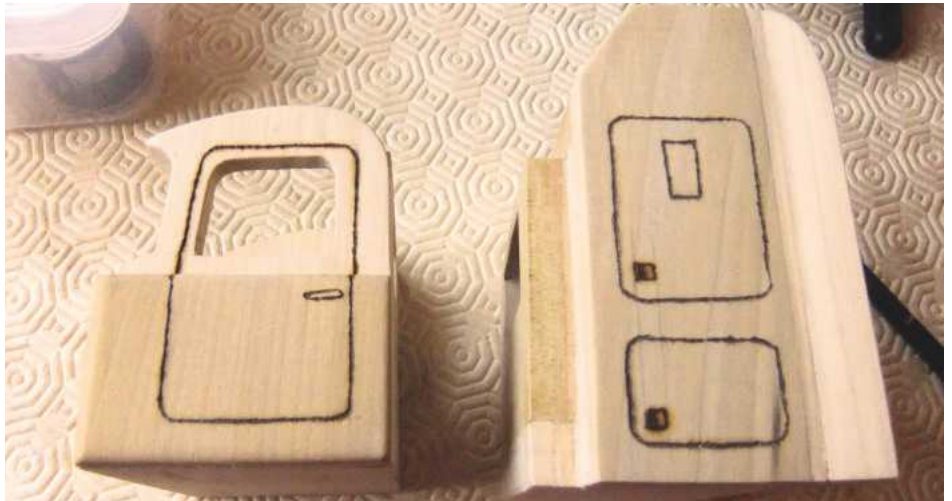
(photo 19); this will need to dry before any shaping can take place – see completed photos of the truck, which will show the shaping. I sometimes get carried away and forget to take the odd photo! At this stage I cut a block, which fits under the cab and sleeper, and glued all of the parts to the chassis; this gave me a platform for all the detailed parts, which follow below.

### Exhaust stacks & air intakes

Making the exhaust stacks and air intakes was a case of some more turning. As I wanted these to be made in mahogany and walnut, I turned the larger sections and then drilled a 6mm hole in the ends to take the thinner section. To make the tops of the exhaust I measured to where I wanted the bend and cut through at an angle, turning the top



17 Using a pyrography machine to add door detail to the cab and sleeper cab



18 The completed pyrographed detail



19 The roof of the cab in place



20 The completed exhaust stacks and air intakes

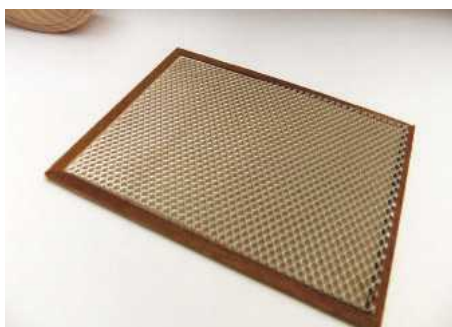
180° and re-gluing them back on once dry. I had to do a little sanding and they could then be cut at an angle to the correct size. The air intake was made in the same fashion but instead required a shaped block at the top. After this stage, I did add some flats onto the lower thicker section, which allowed it to sit better onto the model, as well as giving me a larger glue area. This I did later, when I was able to offer them up to the model in order to achieve the correct alignment (photo 20).

### Plate behind sleeper cab

The plate behind the sleeper cab was made from thin ply and edged with mahogany, and the grill is a piece of aluminium mesh that I salvaged from an old body repair kit that a friend was throwing away. In photo 21, the grill is not yet fixed as it will sit in flush.

### Fuel tanks

There are four fuel tanks: two on either side and the front two have a step built in to allow access to the driver's cab. You will also notice the rear two are slightly longer. I cut a piece of oak in half and then rejoined it with a paper joint; this allowed me to split it easily (photo 22) in order to cut out



21 The grill, which is made using a piece of repurposed aluminium mesh

the step after I'd turned them. While I was turning them I scored the strap lines in and burnt them to make the bands stand out: two sets on the front and three sets on the rear two.

Once the step had been cut out the paper joint was then cleaned to allow for a good glue bond on reassembly of the tanks (**photo 23**). Like the exhaust stacks and air intakes, I sanded flats on the tanks, being careful to get the flats in the front two with the step in the correct location.

There is a battery and an air reservoir on either side, which requires a support beam; this runs right across the underside of the chassis. Once stuck in place the parts can be fitted: one is round and the other battery box is square – I made these using walnut (**photos 24 & 25**).



**22** The fuel tanks, which were split in order to cut out the step after they were turned



**23** The paper joint being cleaned to allow for a good glue bond on reassembly of the tanks



**25** ... which are made using pieces of walnut



**27** Inner upright: two required but only one shown

### Front bumper & bull bars

The front bumper and bull bars, or 'roo bars' depending on where you're from, are made using ply on the plans, but again, I couldn't resist slightly changing how I made them. I decided to use laburnum for these components, and I had some very dry logs in my woodturning wood store. This assembly took nearly five days, which was much longer than I'd originally anticipated. I cut the square sections out on the bandsaw, then cleaned them up using a hand plane, as they were just too small for the machines. All of the round bars were turned to 6mm on the lathe (**photo 26**).

Now that I had the basic stock, it was time to mark and cut out parts such as the uprights (**photos 27 & 28**), and I also needed to cut out

some mortises to take the two inner supports. I did a dry fit of the two inner supports in order to work out the length of the top bar. Once cut, I glued these supports into the bumper and also the top bar; the other two are there for alignment (**photo 29**).

I cut all of the pieces that protruded below the bumper to the same length as well as rounding the lower section of the two inner supports. Once these were dry enough, I used a round 6mm file on the ends so the bottom bar sat along these with a good fit. Now that everything on the assembly was dry, I sanded any corners and joints that needed it, and it was now complete. At this stage I used double-sided tape to attach these pieces to the front as it is easier to apply the finish when the bars are removed from the



**24** The battery and air reservoir in place on either side...



**26** All of the round bars turned to 6mm on the lathe



**28** Outer upright: two required but only one shown



**29** The inner supports glued into the bumper

truck (photo 30). You can also see some of the other parts I mentioned earlier, which are now fitted to the main body.

### Cab & sleeper lights

For the lights along the top of the cab and sleeper, I used some slightly darker dowelling. I found the easiest way to get the angled flat was to mark the dowel to the length required and sand it to that mark before cutting off square, which saves you trying to hold the small pieces (photo 31). There are 10 of these to make and glue in place (photo 32).

### Fifth wheel

I made the fifth wheel in two parts using various thicknesses of panga panga, the lower being a

simple disc with a centre hole. The upper needs to start as a disc with a hole the same size as the lower, but then two angled cuts need to be made and an angle cut or sanded from around the centre to the outer edge. I found this easier to do once the two parts were glued together (photo 33).

### Front lights

The front lights are made from tulipwood with mahogany for the lenses as well as the indicator light. The main lights are simply a wedge shape with the discs stuck to them (photo 34). See the rear light construction for details on how the little discs are made. When placing the main light unit, check to make sure that when in place, they are visible through the bull bars.

### Side mirrors

The side mirrors are made using a length of wood with a triangular cross-section and a hole drilled in each end to take a piece of bent brass wire. Holes are drilled into the cab to accept the mirror wires and these are then glued into place (photo 35).

### Rear light bar

The rear light bar is cut to size and six holes drilled in to half the thickness; these are then filled with plugs, which are made of various different coloured woods (photo 36).

I made these for the front lights by using straight-sided plug cutters – I have a box of these already cut as I always make more than needed. These plugs are glued into the holes and once dry,



30 The front bumper is held in place with double-sided tape, so it can be easily removed for finishing later on



31 Using a disc sander to create the angled flat on the dowel



32 The 10 lights in place, along the top of the cab and sleeper



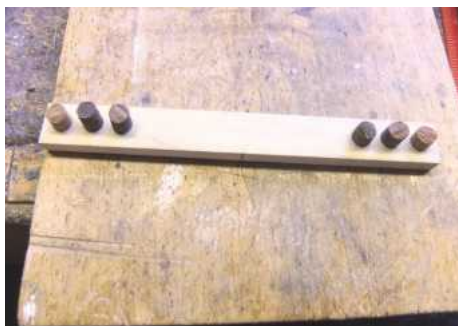
33 The fifth wheel, which is made in two parts using various thicknesses of panga panga



34 The main lights in place



35 The side mirrors in position



36 The rear light bar uses plugs, which are made using various different coloured woods



37 The rear light bar once glued into place



38 The wheels, once slimmed down on the lathe

### BIG RIG SCALE PLANS

Roger Jenkins, a wood crafts designer from Australia, sells various big rig woodworking plans, set to 1:20 scale. Each plan is drawn actual size onto A3 size paper from the original truck sales brochures, and from the various owners' supplied photos. Every plan comes complete with side and top elevations, templates, parts list, detailed instructions, and two chassis designs: one for commercial wheels and the other for home-made wooden wheels. For more information regarding models available, email [rogerjenkins@internode.on.net](mailto:rogerjenkins@internode.on.net), or see his Facebook page: [www.facebook.com/groups/799588853424441](https://www.facebook.com/groups/799588853424441)

can be sanded down to an even thickness. The assembly can then be glued to the rear of the truck (photo 37).

### Wheels

When I started this build I was going to turn and make my own wheels, but since then I decided to use some of the commercially available ones. The only problem being that they were too wide, so the lathe was pressed into service once more to slim these down and to make mortises & tenons that would join the double sets (photo 38). I was going to use shop-bought dowel for the axles, but again changed this and turned my own in mahogany, which would help to give a contrast to the wheels from the outside. As with the bars, I didn't fit these until I'd applied the finish.

### Finishing touches

I used a spray sanding sealer and also a spray varnish on this model, due to all of the various bits that are attached. Once sprayed, the wheels and bars were then glued into place.

Finally, I didn't count how many hours this model took to make as I undertake projects such as this for pleasure. Except for the wheels, glue and finish, all of the wood used to make this model came from offcuts I already had, as well as some from old furniture and wooden floor tiles.

The plans are easy to follow but there are a couple of things I'd liked to have seen and that is the measurements on the plan parts as opposed to being given as a separate list. Also, the measurements are mixed, and it would have been far easier if these were given in either one system or another. **WW**



The completed project, shown from a variety of different angles



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Photographs by Rick Wheaton



Eight finished posts with their seat pads



Eight volunteers carrying a baulk



A two-trestle bench being made



# From tree to bench PART 2

Carrying on from last month, Rick Wheaton and his fellow volunteers concentrate on making an outside work area before embarking on the shaping of the huge baulks

**L**ast month I described the laborious but fascinating process of splitting the 3.2m length of our oak tree into manageable pieces, or baulks. (A reminder from last month: please take a look at Peter Lanyon's website – details at end of article – for some interesting background on this project).

## 'Baulky' work

We needed eight baulks to complete Peter's 'outdoor sculpture bench' and first we man-handled them down to what would be our woodland workshop. We were instantly reminded of the water content and density

of this green oak; each baulk was so heavy that it took eight of us to carry just one.

Our second job was to put together eight make-shift 'benches', each consisting of two pairs of stakes driven into the ground, one pair near a tree for support. When a baulk is lifted onto the stakes, and stapled to its tree with a heavy steel dog, the result is a surprisingly solid structure at a convenient height.

## Team in the woods

Now the real work could begin. Peter's design called for the baulks to be shaped and smoothed, using – of course – only traditional, hand-held

tools and retaining the 'shape and form' of each baulk. In Peter's expert hands his side-axes and drawknives effortlessly followed the grain, and performed miracles of stock removal. At first our clumsy efforts paled by comparison – this learning curve looked impossibly steep!

Working in pairs allowed us to take some comfort from our partners' struggle, and eventually we began to improve, frequently by trial and error, and often learning from each other. I guess for most amateur woodworkers making things is usually a solitary occupation, and it was rather nice being part of a team in the woods. Obviously when someone from the next baulk sidles up and says "you're not nearly there yet, mate," with the accent on "nearly," it can be tiresome, but you can always get your own back in half an hour.

We started rough shaping with side-axes, so-called because they are not ground symmetrically. One side of the blade is virtually flat; this side is laid against the wood and a left-hand grind was needed for Peter and the other 'lefties' among us.

## Mastering the drawknife

After rough shaping with the axes, we used



A steel dog stapling the baulk to a tree



Peter using a drawknife



Close-up of a side-axe

drawknives to achieve the final level of smoothness. A drawknife is basically a giant spokeshave, but without a throat. Too slight an angle against the wood and there's no cut; too great an angle and the heavy tool digs in to produce an ugly wound. It was a new technique to most of us, and a hard one to get comfortable with. Additional finishing off – such as sanding – was frowned upon, and at first it seemed impossible that we could form a smooth shape with axes and drawknives, but we slowly got there, and a feeling of intense satisfaction crept over us as the afternoon drew on.

The design called for each baulk to taper nicely from top to bottom, a difficult task as Peter's mantra was to "follow the grain." The mountain of chips under each baulk bore witness to our efforts, as did the blisters on our palms and thumbs, but each team eventually received a nod of approval and we happily moved on to the next stage.

### Finishing the baulks

This was to provide additional support for our tall and heavy baulks by inserting a length of scaffold pole into a deep 50mm hole cut for the purpose. Naturally we drilled this 50mm hole by hand – with an enormous auger guided by

a purpose-made jig. Cutting into end-grain is always a struggle so we formed a line; 10 turns is all anyone could manage before handing over to the next in the queue.

Another part of the same jig was used to mark out the seat pad groove, and this was first cut with a panel saw before being chiselled out. Both these tasks called for some accuracy, and Peter's jig screwed to each baulk, so for the first time the whine of a cordless screwdriver echoed through the trees. At this point it was quite relaxing to be using a technique most of us were familiar with!

The eight finished baulks were then laid out, with some ceremony and not a little pride. **WW**



Jig with auger at work



Close-up of a drawknife in use

### NEXT MONTH

In part 3, the final part of this story, Rick reports on making and fitting the seat pads, along with the final assembly and installation

### FURTHER INFORMATION

Sharpham Trust  
[www.sharphamtrust.org](http://www.sharphamtrust.org)

Peter Lanyon Furniture  
[www.peterlanyonfurniture.co.uk](http://www.peterlanyonfurniture.co.uk)



A couple of posts showing their seat grooves

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# Making old saws sharp again



A selection of old tenon and dovetail saws

Whether you're a fan of new or old saws, Gary Cook's tips on resurrecting these handy bench tools will certainly pay dividends



1 Two Disston tenons



2 R. Groves (dovetail) and Tyzack (dovetail) saws

I wonder how much of their monthly income the likes of George Hepplewhite and Thomas Chippendale spent on hand tools? Would they have scoffed at planes that cost £300 and more? Would they have placed a gouge back on a shelf, upon learning it was priced at nearly a day's wage? I don't know, but food for thought!

A proportion of our finest modern makers seem happy to spend a good proportion of their income on the finest modern tools, and why not? They use them every day and feel that buying 'quality' reflects in their work.

## A love of old tools

While I love some of the high-end tools available, I have to admit to being more fascinated by the older tools and the history attached to them. For me, working out how to maintain these and keep them in tip-top condition is all part of the interest. I enjoy bringing tools back from the dead and getting them in use again. To that end, I've been teaching myself saw sharpening this month: it's really not as hard as you might think, and I've resurrected three or four saws, all with great results.

## Missing teeth

If you're looking to have a go too, I would suggest starting with tenon saws. The 12tpi-ish range is easy to work with. My own favoured saws are

Disston (US) (photo 1) and from the UK, R. Groves, Drabble & Sanderson, Spear & Jackson, Sorby, Nurse & Co and Tyzack (photos 2 & 3).

Saw plates can be removed from their steel/brass backs to straighten them, but honestly, just buying a straight saw is easier. Make sure the handle is tight to the blade, (the better, older saws will have split nuts rather than more modern brass bolts).

A few missing teeth isn't too much of a problem; lots of missing teeth means you might have to 'joint' the saw first. This requires taking all the teeth down with a flat file and essentially re-cutting them before filing. Filing new teeth requires a paper template at your required 'tpi' (teeth per inch), which you can stick to the blade edge as a guide.

## Rip-cut pattern

You'll find it easier to start with a rip-cut pattern, filing perpendicular to the blade, but tilting the file slightly to adjust the tooth 'rake'. I found it quite easy to see which teeth I had filed, by first touching all of them with a black Magic Marker.

Generally, so that your teeth are the correct shape, your triangular file should sit around twice the height of your saw tooth, once the file is in the gullet. Files are available in all sizes from super-thin needle files, right up to size for 4-5tpi rip saws. The three-sided files can, of course, be rotated so that you wear the edges consistently. With hand filing you can even vary the rake to get a progressive angle, making starting a saw cut much easier.

## Crosscut saws & smaller dovetail saws

Once you've nailed rip-cut filing, you can move on to crosscut saws and smaller dovetail saws, where you will need to address 'flem', 'slope' and 'set'. I don't have the space here to even begin to touch on technique for all this, but suffice it to say that the internet is a mine of information. For doing the brunt of the cleaning work, disassembling and 'fixing up' saws, Mark Harrell at Bad Axe Toolworks – [www.badaxetoolworks.com](http://www.badaxetoolworks.com) – has many informative blog posts and for filing and sharpening saws, Paul Sellers on YouTube – [www.youtube.com/user/PaulSellersWoodwork](http://www.youtube.com/user/PaulSellersWoodwork) – is hard to beat. If you have a specific question you'd like to ask, please do get in touch. **WW**

## FURTHER INFORMATION

Gary's blog – [www.hackneytools.com](http://www.hackneytools.com) – concentrates primarily on quality woodworking tools from the 19th-20th centuries. He also tries to include information about the woodwork and carpentry trades from those times. You learn something every day, so do get in touch if you have information about hand tools and traditional work that others might find useful



3 A collection of larger saws



4 The sharpening vice on a workbench

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# A humble fixing

In this advert from *The Woodworker* of October 1952, we look at a wide range of Rawlplug-related products available to the homeowner, including the necessary Rawlplug Tool

**M**aking a tidy and effective fixing in a wall has long been the goal of many, but it wasn't until the invention and development of one of the most useful small products ever that it became a reality.

Since its invention in 1912 by John Joseph Rawlings, the humble Rawlplug has been produced and gratefully employed in all manner of fixing operations around the world in countless numbers. Invented to conform to strict requirements imposed by the terms of an electrical installation at the British Museum, the Rawlplug was originally a rigid fibre tube of thick bonded jute and animal glue. The Rawlplug went on to become the massively selling plastic shelf-hanging necessity we all know (and mostly love) today. This advert from *The Woodworker* of October 1952 shows a wide range of Rawlplug-related products available to the homeowner, including the necessary Rawlplug Tool.

## An effective and low-cost method

While a number of tradies back in the 1940s and '50s would have had access to masonry bits (Durium!) and electric drills, such power tool luxuries were denied to the average domestic DIYer, leaving little option but to employ the aforementioned Rawlplug Tool pictured below. This was a tri-lobed sectioned hardened-steel bit set into a steel handle, and was designed to be struck with a hammer and rotated in the developing hole after every blow (to avoid becoming stuck). Hard work but an effective and low-cost method of forming a hole in a brick wall ready for a Rawlplug or two.

## An insight into the past

I came across this example the other day. A later model, it features changeable bits (the early versions were a single fixed size), which can be popped out by means of a tapered

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drift tapped into a hole in the handle. As well as ensuring any broken or blunted bits could be replaced, the design also enabled a change of bit size to accommodate the requirements of the job in hand. They often turn up at boot sales and the like; using one really provides an insight into the past. As for some of the other products shown in the advert, I'd really like to try one or two; let me know if you've still got any of them on a dusty shelf at the back of the workshop!

*Mark*



The Rawlplug Tool enabled a drill-free hole to be bored in a brick wall

## DO GET IN TOUCH

If any readers have memories and photos of things they or their forebears made from *The Woodworker*, please get in touch as we'd love to see them. Just email me on the usual address: [editor.ww@mytimemedia.com](mailto:editor.ww@mytimemedia.com) and we'll get them in the mag

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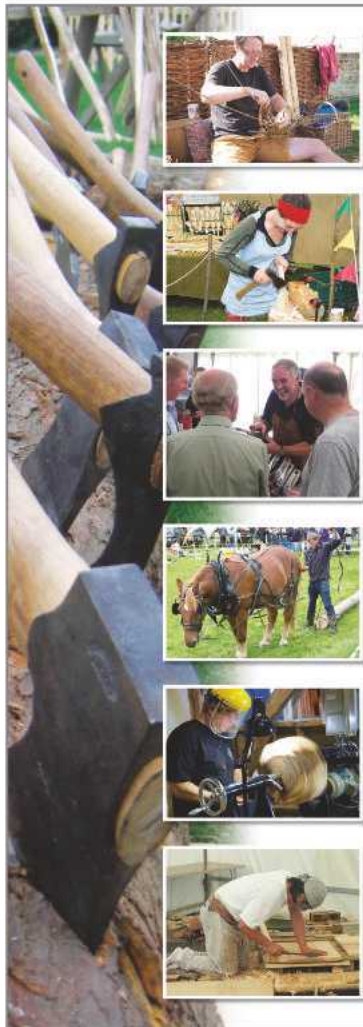
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# Solitaire puzzle

Peter Dunsmore sets about making this well-known game a little more attractive by incorporating some fancy woodwork together with lovely American cherry and walnut to create a contrasting effect

## CUTTING LIST

- 1 @ 650 × 160 × 24mm – American walnut
- 1 @ 600 × 140 × 10mm – American cherry
- Some 9mm MDF to make templates

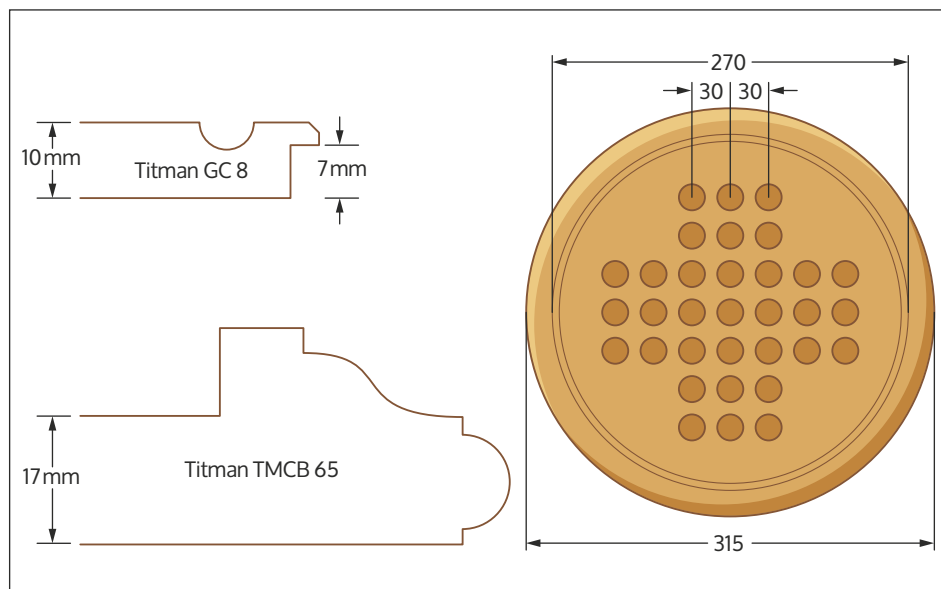


Fig.1 Router profiles and dimensions required for the solitaire board

Solitaire is a well-known game that is readily available from many gift and toy shops. However, the quality of workmanship in some of them is quite basic. The following shows my method of making this game a little more attractive and, in a funny kind of way, more of a pleasure to play. Despite all the fancy woodwork, I still find it impossible to finish with the one remaining marble in the centre pocket, but at least I have a little more fun trying.

## Making a start

This project is straightforward to make but does entail some accurate work with a router using both a trammel bar and the Trend N-Compass jig



to cut the circles. Begin by making the two pieces of contrasting timbers that will be used in the project. This 10mm playing board is made after planing a 25mm piece of cherry square all round and then cutting this into two pieces (**photo 1**). Plane the sawn surface flat and then glue the two pieces together ensuring the joint is flat and level. This is easily achieved by clamping two scraps of straight battening over the joint with some pieces of plastic bag between the batten and cherry to prevent the scrap sticking to the timber. The walnut frame is made in a similar way using sash clamps (**photo 2**) to ensure the timbers dry flat. When this has dried, sand the timber smooth across the joins and put aside while three templates are made from 9mm MDF.



**1** Cutting the 25mm board to make two 10mm boards



**2** Note the scrap to keep the sash cramps level with the timber



**3** Pin the MDF onto some scrap to prevent the cutter kicking the side as it breaks through



**4** Use a Forstner bit to cut 20mm diameter holes



**5** Press down on the compass point as the router is moved



**6** Trim close to the template without damaging it

Two are circles cut at 270mm (**photo 3**) and 315mm diameters using the N-Compass jig. Drill the 6mm pivot hole for the jig right through the MDF. The third is a piece about 400mm square.



**7** Use a bearing-guided trimmer to shape the circle



**8** Cut the 2mm bevel around the perimeter of the circle



**9** The smaller bearing makes a neat rebate

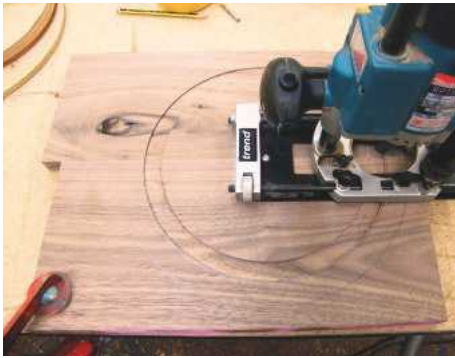


**10** Use a 20mm guide bush to match the hole in the template

A point worth mentioning when cutting the circles is to pin what will be the circle onto a scrap piece of ply or MDF and clamping this to the bench top to prevent it slipping as the cutter cuts through, as any slight kick in the side of the template will be repeated on the finished timber and ruin the smooth lines. Take the square piece of MDF, locate the centre by drawing the diagonals and then draw a circle with a diameter of 270mm. Use a square to accurately draw lines that intersect at 30mm intervals as per the drawing. Use a 20mm diameter Forstner bit to drill the 33 holes required for the game, taking care to ensure the drill is kept vertical (**photo 5**). An advantage of using this type of cutter is that the centre point of the drill bit can be used to accurately locate the drill when cutting the holes.

### Making the game insert

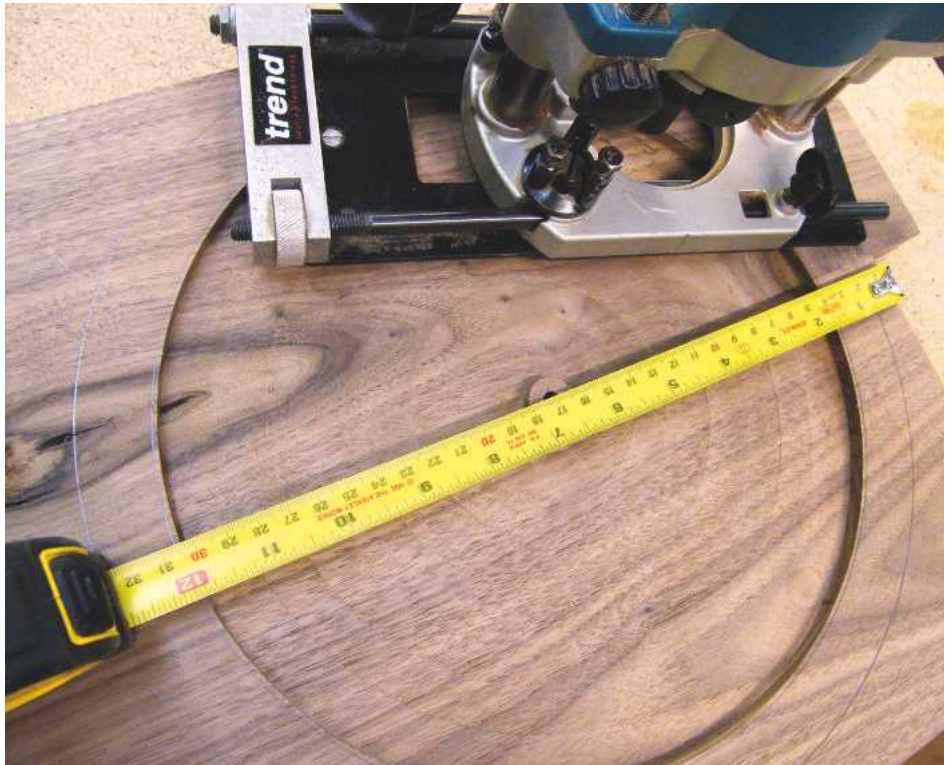
Use a compass to draw a circle with a diameter of 270mm on the cherry locating the compass point on the glue line. Fit a 16mm gutter cutter to a router and plunge the router so that it touches the surface of the timber and then set the depth of cut to 4mm. Fit a trammel bar to the router and set the radius to 123mm from the centre point to the middle of the cutter. Clamp the cherry to the work surface and place the compass point on the trammel bar at the centre of the circle. While holding the compass point firmly down rotate the trammel bar and cut the outside channel in a smooth pass. Try to lift the router up at the end of the cut as it is still moving, as some timbers, cherry included, are prone to slight charring if the cutter is held in one place for any length of time (**photo 5**). Use pieces of double-sided tape to secure the circular template onto the cherry using the pencil drawn circle as a guide to position the template accurately. Remove the majority of the waste timber with a saw (**photo 6**) before using a bearing-guided trimmer (**photo 7**) to trim the timber to the template. I find it easier (and safer) to start the trimming at a point on the circle where the cutter begins cutting in the direction of the grain rather than risk the cutter snatching on the end-grain. If using a router table for this operation, it is advisable to use the lead on pin on the table



11 Set the diameter to suit the underside of the insert



12 Gradually reduce the radius of the jig



13 Double-check the diameter and adjust if required



14 Trim close to the edge of the template



15 Note the use of the hold down clamp on the small table top



16 Check the depth of cut on some scrap of the same thickness

to support the piece. Remove the template and cut a 2mm bevel on the top edge of the circle using a bearing-guided bevel cutter (**photo 8**). I find it useful to check the depth of cut is correct by testing this on a scrap piece of timber first.

### Cutting the rebate

A small rebate needs to be cut on the underside of the bevel to provide the lipping that camouflages the joint between the two components that make up the project and the following method is used to cut this. Replace the bearing on a bearing-guided trimmer with one of a smaller diameter. The diameter of the bearing only needs to be about 3mm smaller, thus giving a 1.5mm rebate. Using double-sided tape, replace the MDF template onto the face side of the timber ensuring the edges line up accurately and set

the depth of cut carefully so the top of the rebate is about 1mm below the edge of the previously cut bevel. When completed, remove the template by carefully inserting a chisel between the two woods and separating them.

### Cutting the pockets

Use some double-sided tape to secure the cherry to the square MDF template and position this accurately using the 270mm diameter circle previously drawn on the MDF. Visually, the project works better if the grain of the cherry flows in line with that of the marbles. Secure a 20mm guide bush to the base of the router and fit the same 16mm gutter cutter used previously (**photo 9**). Set the depth of cut to 4mm using the cherry as the guide when setting the stop and not the template. In a similar way to cutting the rim, don't

let the cutter remain stationary at the bottom of the cut (**photo 10**). Repeat this for all 33 pockets. Don't do what I did and leave three of the pockets un-cut; I didn't notice until it came to polishing!

### Making the walnut frame

Walnut was chosen for this part of the project as it contrasts well with the cherry insert. Only a small amount is needed, which is probably just as well owing to the current cost of this timber! In a similar way to the insert begin by checking that the joined boards are flat and smooth. Locate the centre point along the glue line and drill a 6mm hole perpendicularly right through the walnut. Fit a straight wide cutter into the router and attach the N-Compass jig. The diameter of the underside of the cherry insert should be about 3mm less than the 270mm template used to cut



17 Note the lead on pin for added support (the safety guard has been raised for photographic clarity)



18 The end result requiring very little clean-up



19 Remove the spigot

the original circle. Adjust the diameter of the jig so it is set to this diameter or a whisper over (photo 11). Set the depth of cut to match the depth of the rebate on the cherry; if all goes well this should be 7mm. You will notice that this stage is completed before the circle is cut as the extra width gives both more support to the router base as well as providing somewhere to fix a clamp. Continue removing the waste until you are left with a small stub in the middle of the walnut (photo 12), which will be removed later. Check that the diameter of the recess will suit the insert by measuring across the centre of the timber (photo 13) and adjust if required. Locate the template on the underside face of the disc by using a 6mm drill bit to ensure it is positioned centrally and reinforce this with four small nails leaving the heads proud. Saw the waste, cutting close to the template (photo 14), then use the bearing-guided trimmer to trim the waste level with the MDF (photo 15).

### Moulding the edge of the timber

There are various cutters that would be suitable to cut a moulding on the edge of the timber, the key point being that it must be a bearing-guided cutter. For this project I used a Titman TMCB65. A couple of points are worth bearing in mind for the sake of safety. This is a relatively wide

diameter of cutter so the peripheral speed of the cutter will be fast, so it is important to reduce the speed of the router to avoid burning the wood. Secondly, and equally important is the need to use a lead on pin on the router table to support the piece and prevent the wood being chucked across the workshop. You will only have one chance to set the depth of cut, so get it right first time. Use one of the pieces of waste removed from the corners with some MDF scrap nailed to it to check it is set correctly (photo 16). There should be a small ridge on both the top and base edges. Hold the timber firmly with the hold down fence in place and rotate the timber gradually while feeding the wood into the cutter. The secret is not to remove too much at one pass and keep the timber moving in a smooth rotation, but most importantly, start by pressing the wood against the lead on pin on the table. When the cutting has been completed, pull the timber back towards you so the cutter does not damage the moulded shape as it is lifted away (photo 17). Turn the walnut over and breathe a sigh of relief (photo 18) as this stage is quite demanding! Remove the spigot left in the walnut (photo 19) and check the insert fits into the opening. The small bevelled ridge should cover the edge of the recess, thus avoiding having to make the cherry a perfect fit into the walnut.

### Finishing the project

For a neater end result it is better to apply a protective finish to both components before they are glued together. Personally I like the feel and colour of button polish on walnut before finishing with a black wax and buffing to a soft sheen. Two coats of Danish oil applied thinly to the cherry results in a matt finish that brings the grain to life and contrasts well with the walnut (photo 20). When both parts are dry the cherry can be glued to the walnut. If the depth of cut has been accurate, then PVA adhesive should work well (photo 21). However, if there is a slight gap between the two timbers, a little silicone spread over the walnut would work equally well in addition to filling any slight gap. When clamping the two components together make sure the grains of both timbers are parallel with each other so that any shrinkage will be in the same direction on both timbers. Finally, cut a circle of baize and glue this onto the underside of the board, then purchase a set of suitably coloured marbles. **ww**

### FURTHER INFORMATION

House of Marbles  
Web: [www.houseofmarbles.com](http://www.houseofmarbles.com)



20 Apply a suitable finish



21 Glue the two components together



22 The completed solitaire board should look something like this

# schepach

## Germany

1100 W

60mm

200 mm

WORKSHOP



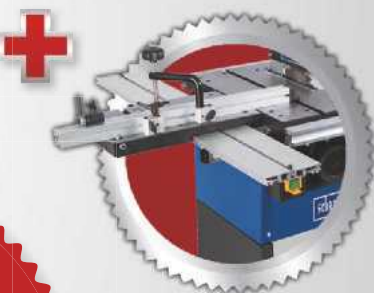
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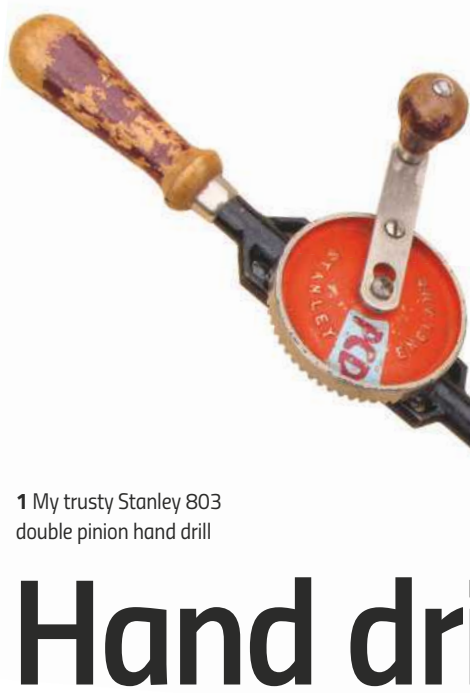
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1 My trusty Stanley 803 double pinion hand drill



2 You can see the double pinion teeth on the Stanley

# Hand drills: on the endangered list?

Phil Davy answers the question of why many people still choose to use a hand drill to this day

A few decades from now, how many of our familiar hand tools are likely to be relegated to museums and private collections? Take the hand drill, for example. With regular innovations from power tool manufacturers to speed up our woodworking lives, is it in danger of extinction, I wonder? Why on earth would you need a hand

drill when a cordless version offers speed, power and often screwdriving capability as well? Let's take a closer look at the pros and cons of this basic workshop item.

In many woodworking situations it's the ideal tool for boring. For fine cabinetmaking or antique restoration tasks, such as fitting delicate hardware, musical instrument and model making, there are plenty of occasions when a slip of the drill bit could spell disaster. Fortunately, a hand drill is slower than its power tool equivalent. By gently rotating the handle there's much greater control, so you can stop instantly without fear of drilling too deeply. Sometimes hole depth is critical, which isn't always so easy to manage with a cordless or mains drill.

Another advantage is chuck capacity, especially at the smaller end of the range. Precision drilling with small bits is a cinch, with the jaws securely gripping a 0.5mm diameter bit. With many cordless or mains powered tools such a tiny bit will simply drop out when the chuck is tightened. Even when it is locked in the jaws, the weight of the tool can snap a bit if you're not careful.

And don't forget the noise. OK, so a cordless drill is not the loudest of power tools, but if working late at night you probably don't want to disturb the neighbours. And if you're not in the habit of charging batteries regularly, the cordless tool could be out of juice just when you need it.

## Child's play

Many of us probably encourage our kids or grandchildren to join us in the workshop, rather than let them spend countless hours on the Playstation. Teaching them how to use and control a hand drill is a useful practical skill, regardless of what they do later in life. Not many tools a child can be left alone with are unlikely to cause injury, but this one is fairly safe to play with. Lightweight and easy to control, the hand drill is simple, fun and easy to use, with nothing to go wrong. A drop of oil occasionally is all it demands. What more could you ask?

## Drill basics

Descended from the bow drill, a favourite piece of kit of those Ancient Egyptians, the hand drill is also known as a wheel brace. Evolving over the centuries, probably the most extensive range was produced by American company Millers Falls. Some of these were actually two-speed drills, introduced around the time of World War I (photo 3). A knurled ring shifter altered the speed.

These days most crown wheels are steel or cast aluminium, the teeth meshing with one or two steel pinions. These cause the chuck to rotate as you turn the handle. Chucks are keyless and contain three jaws, although until relatively recently Marples produced a tool that used a key for tightening, just like a pillar drill.

Stanley still produce two hand drills, though disappointingly these now have plastic handles,



3 An unusual two-speed Millers Falls wheel brace



4 Twist bit and lip and spur (dowel) bit



5 Rose (fluted) and snail pattern countersink bits



7 Ratchet brace (four jaws) and hand drill (three jaws) chucks

like their bench planes. The designs remain the same, though. Older versions had sturdy, lacquered beech handles. A detachable side handle makes the tool easier to grip when boring horizontally, while some drills have a removable end handle where you can store a few bits. My old Stanley drill lost its side handle years ago, so I'm hoping it will turn up in the bottom of a toolbox one day...

### Bits & pieces

What type of bits are best to use with a hand drill? Twist bits are the most common, though designed for boring metals, these engineering bits are good all-rounders, producing a fairly clean hole in wood (photo 4). Make sure you have an offcut as backing, though, or you'll get break-out where the bit leaves the wood. More efficient are lip and spur bits, also called dowel bits. Spurs ensure a clean perimeter to the hole on both entry and exit.

When drilling larger holes it helps to mark the centre with a bradawl or centre punch. This ensures



6 From left to right: centre bit, auger bit, Jennings pattern bit

the bit itself will not wander when you start drilling. Alternatively, drill a smaller pilot hole first.

A hand drill is perfect for accurate countersinking, particularly where depth is important. A few turns of the handle means you can match the size of a screw head exactly (photo 5).

If your drill bits are sharp, then you don't need to use much pressure. As you're turning the handle, withdraw the bit now and again from the timber and clear the debris from the flutes. Don't forget to clamp your work down to the bench, though. Just because there's no chuck spinning at 1,000rpm doesn't mean timber does not need to be secure.

If you want to bore holes larger than about 7mm you may have to consider a breast drill, or perhaps a traditional swing brace. More recent braces were equipped with ratchet action, making them easier to use in confined spaces. A swing brace uses bits with square taper shanks (photo 6).

### Counting the cost

I bought my Stanley 803 hand drill almost 40 years ago and it still gets used today (photo 1), though admittedly not on a regular basis. If you've never owned such a tool you don't need to spend a fortune. A quick check on eBay revealed several old hand drills for around a fiver. If you prefer gleaming new kit, there are still a few companies producing hand drills. A brand-new Stanley single pinion drill will set you back about £15, while a double pinion tool is nearer £30. Both have aluminium gear wheels and 8mm chucks. A new Footprint hand drill is a similar price. Actually, my Stanley will only securely grip bits up to 7mm in diameter, but I'm more than happy with that... **www**



8 A swing brace is a great tool for drilling larger diameter holes



9 A hand drill offers you complete control...





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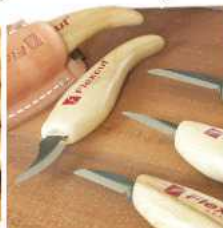
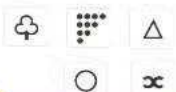
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# Smooth operator

Teach yourself the techniques of tambour-making with **Pete Martin's** roll-top bread bin

‘**T**ambour’ is the rather exotic and spicy-sounding name for the panel of articulated slats that’s most familiar to us, perhaps, from the roll-top covers of writing desks. As a species of door, they have a style all of their own, while their space-saving slide-away operation makes them all the more attractive; whereas a hinged door requires room to swing open, the tambour simply rolls vertically or horizontally into the carcass itself, affording complete access to the interior. And, for all its seeming complexity, the tambour is a relatively simple mechanism, being used on a variety of different items, from a kitchen cupboard to a bureau or sideboard.

## Planning the slats

A tambour consists of a series of identical slats laid edge to edge and held together by a backing which, traditionally, is made of either fine silk, linen, canvas, or sometimes from leather cloth. Because this backing is flexible, it allows the tambour to bend as it runs in curved grooves in the carcass sides.

The smooth operation of the tambour depends on a number of factors. First, the carcass itself must be perfectly square: any inaccuracies and the slats won’t roll without sticking and jamming. The piece must also be designed so as to provide sufficient space at the back of the carcass to accept the mechanism: in a writing desk, for example, the tambour will roll over the back panel and down behind it, so that nothing can obstruct its movement.

The slats, meanwhile, must be made of a stable and straight-grained timber, but you must also give careful consideration to their width and the thickness, and the radius of any curves around which you’re going to ask them to run. If the radius is too small (which is often the problem when trying to turn the tambour in a very restricted space at the back of the carcass) or the slats are too wide, the tambour will jam. If, on the other hand, the slats are too narrow,





the tambour can become too flexible and will be unwilling to run smoothly.

Striking the right balance comes down to trial and error. For this project, for example, I first determined the dimensions of the bread bin, mapped out the run of the tambour on its sides, then cut the curved grooves and made sample slats to check that they'd run around the track smoothly.

In the course of your experiments, you can improve the tambour's operation by rounding over or chamfering the arrises on the slat tongues where they fit into the grooves; shouldering the ends of the slats, meanwhile, will not only allow you to use more substantial material without the need to cut wide grooves, but also produce a neater finish by concealing the groove behind the shoulders of the slat. On more elaborate furniture, you might also form convex and concave profiles on the slats' mating edges to effectively disguise the gaps that open between them as the slats flex around a bend. (For more on tambour construction, see Ernest Joyce's *Techniques of Furnituremaking*).

### Carcass construction

Before starting work on the tambour, I made up the carcass parts for the bread bin itself. This involved what I considered to be the most difficult task in the whole project – routing the grooves in which the tambour runs. This was done before cutting the end pieces to their curved profile, and for accuracy I routed the grooves using



1 Determine the sizes and draw up a full-sized MDF template, taking into account your guide bush/cutter ratio



2 Jigsaw the curved leading edge of the template to just short of the line and carefully finish with a disc sander to remove...



3 ... any discrepancies that would be repeated in the final groove. Keep the router tight to the edge



4 Take care as you work close to any end-grain



5 I used biscuits to joint the carcass of my bread bin



6 If your thicknesser's range can't cope with the thin slats, use a false table to raise the workpieces

a cutter guided by a bush and a template made from 9mm MDF (photo 1). On the template I set out the curves of the groove, around which I then plotted a parallel line representing the offset track of the bush. For this build, I used a 6mm cutter with an 18mm bush, so the guideline for the bush was set back 6mm from the edge of the groove (i.e. half the difference between the cutter diameter and the bush diameter).

I then roughly cut out the template with a jigsaw (photo 2) and sanded to the line with a disc sander, producing a smooth curve against which the router bush could run. Routing the grooves was then a matter of cramping the template into position on the side piece and, keeping the bush tight against the template at all times, routing a slot of the required depth (photo 3). Take care if your groove takes the router close to the edges

of the component and leaves areas of short-grain (photo 4) when, to avoid the risk of damage, you may find it best to rout the groove in a series of light passes. Next, repeat the operation for the other side piece, double-checking before you start routing that you will be making an exact mirror image of the first side!

This project also requires further grooves to be cut in the side pieces, base and top to house the back panel. Having made these, set out and cut the biscuit joints (photo 5), ensuring that these will neither be exposed when you shape the ends, nor intrude into the tambour grooves. You'll see from the photos that I offset the slots in the top and bottom fractionally so that the end pieces are inset slightly.

After making a dry run to check the carcass for accuracy, make up the back panel, which

should be as snug a fit as possible so that it helps to keep the carcass square. When you're satisfied, mark out the curved profile of the end pieces by cramping the grooving template back into place and using an appropriate spacer to scribe an offset line parallel to and outside the tambour groove. Once again, cut roughly to this line with a jigsaw and use a disc sander to produce the finished profile.

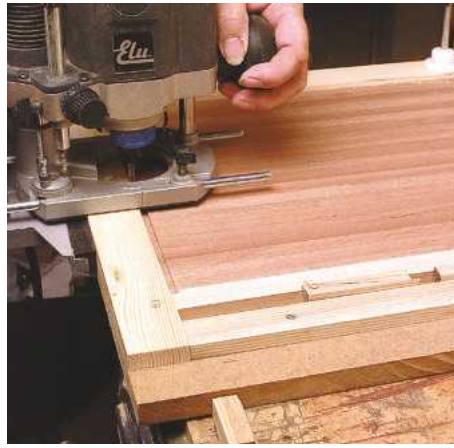
### Making the tambour

In the interests of giving the tambour a uniform appearance, I cut all the slats from a 38mm-thick piece of straight-grained sapele that had been well seasoned.

Having determined the exact length of slat required and subtracted 2mm to provide running clearance at either end, I cut the board slightly



**7** The routing jig must be perfectly square; use folding wedges or similar to cramp the slats together



**8** Using the edge of the jig to guide the fence, cut the tongues on the end of the slats



**9** Sand the slats smooth then chamfer the front arrises with a plane or on a router table

over-length, then planed and dimensioned it to about 35mm-thick. After shooting the edges straight and square, I sawed off the required number of slats (plus spares), planing the edge of the board between each cut. The saw marks were then removed from the second face of each slat by running them through the planer to reduce their thickness to 9mm (**photo 6**).

Cutting the slats to finished length is best suited to a chopsaw or radial-arm saw fitted with a length stop, as these will help to ensure that they're all exactly the same length. By ripping each 35mm-wide slat down the middle and running them through the thicknesser

one last time, I reduced them to their final width of 15mm. I did, however, leave one of my slats double width, and then planed it down enough to form the larger end slat that sits in the groove in the bread bin base.

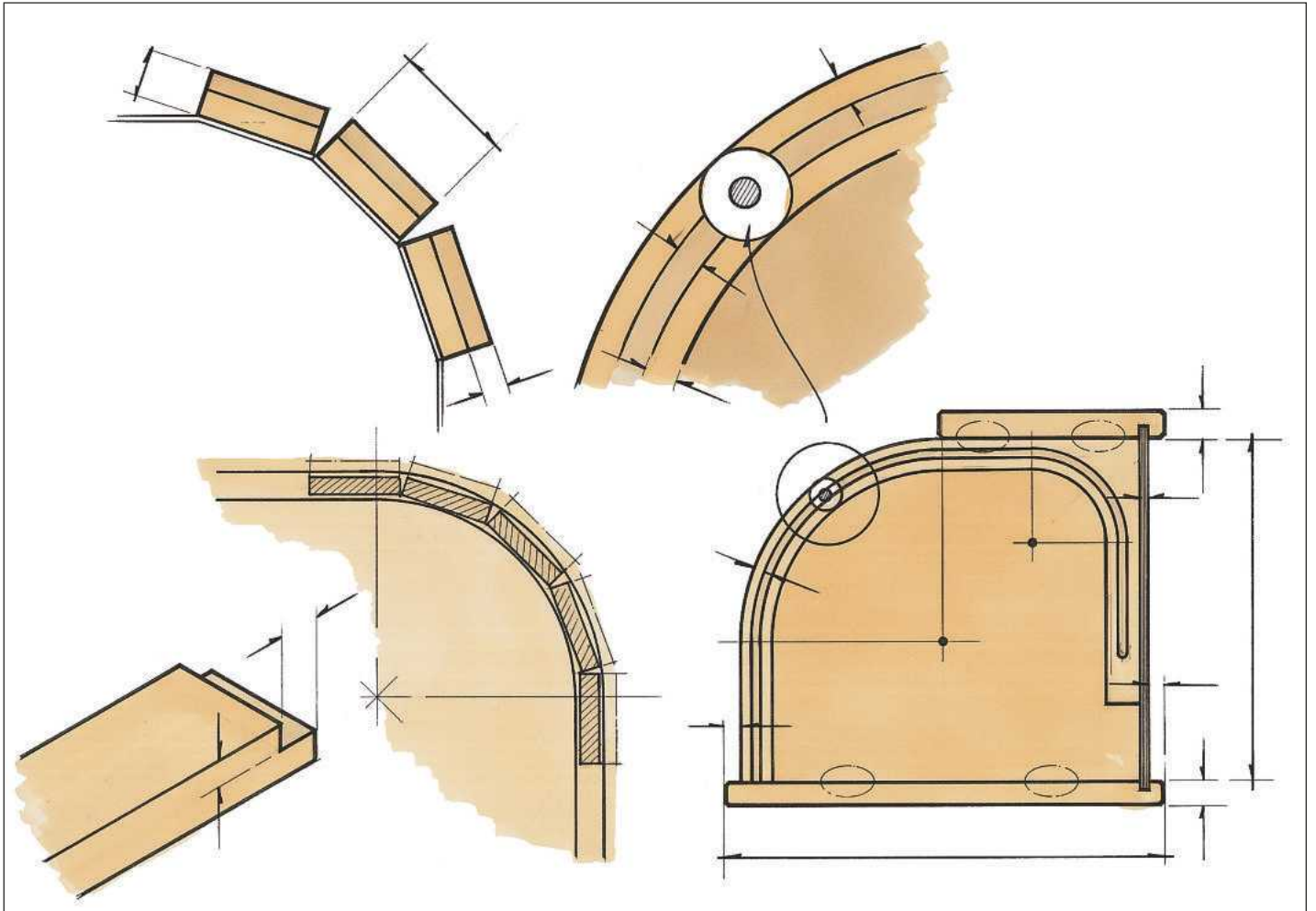
However you go about cutting your slats to size, try to intersperse each step of the process with an overnight rest if possible to allow the timber to settle, as this will further reduce the chance of subsequent distortion.

### Shouldering the slats

When it comes to cutting the shoulders on the slats, there are a couple of methods you can use.

One of these is to set a stop on the fence of a radial-arm saw and to make several passes at the correct depth to produce what is in effect a bare-faced tenon. However, in order to apply the backing material you'll need to make a jig to hold all the slats together tightly, so you might as well use this jig to help rout the shoulders, too.

The jig (see **Fig.1** below) is made by cutting a base board of MDF big enough to carry a frame to hold the slats. This frame must be perfectly square, and its long sides perfectly flush with the base board. The length of the jig gives enough room for you to insert a fifth sliding batten, which is used to hold the slats together;



**Fig.1** Jig for slat frame

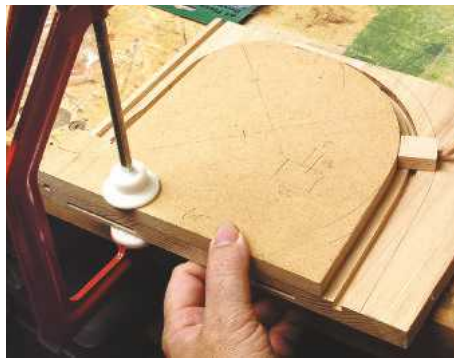


**10** Try the slats in the carcass to ensure they run smoothly; chamfer the tongue edges if necessary

my jig (**photo 7**) uses folding wedges to provide the pressure, but you could come up with a method using long bolts or threaded rod that would work equally well.

With the jig made, routing is simple (**photos 8-11**): lay the slats in position, making sure that each one is showing its best face, and that the larger end slat (if you have one) is in the correct place. Lock the whole lot in position with the sliding batten so that you can rout the shoulders, running the fence along the edge of the jig and making several shallow cuts to ensure a clean finish. Try a slat in the carcass grooves to check that it runs smoothly; if not, replace it in the jig and make another slightly deeper pass with the router. Keep testing the fit until you're satisfied.

Remove all the slats, plane or rout a fine chamfer on both front arrises, and sand the front faces (**photo 12**). If you now apply your chosen finish to those parts of the slat to which the backing fabric won't be applied, it'll help prevent any stray glue sticking where it's not wanted.



**11** Use the groove template and a small spacer to scribe the profile of the side pieces...

To apply the backing material, replace the slats in the jig with their show faces downwards, and tighten the sliding batten to keep them in place. I backed my slats with unbleached calico, (**photo 14**), which is readily available from fabric shops; it will shrink when moistened, though, so wash and iron it before use. If, after doing this, there's still some give evident in the fabric, make sure that the direction of this movement is along the length of the slats, not across them.

Cut your fabric to size, leaving it over-length but narrower than the slats by about 6-8mm so that it stops short of the tongues, then paint a thin coat of glue (**photo 13**) – I used common-or-garden PVA – over the back face of the slats, again keeping well clear of the tongues. Position the fabric on the board and use a laminate roller to press it into the glue and iron out any wrinkles before cramping a waxed MDF caul over the top (**photo 15**). The wax will prevent the fabric sticking to the caul; alternatively you could lay a piece of wax paper or polythene between the calico and the caul.



**12** ... then cut and sand to shape on a disc sander, taking care not to scorch the edges

When the glue has dried, remove the tambour and flex it gently (**photo 16**); hopefully, no glue will have seeped down the joints between the slats and stuck them together, but that's why it pays to finish the front of the slats before assembly. Finally, trim away the excess fabric with a craft knife and screw a backing plate to the end slat to hold the backing material and prevent it coming unstuck in use (**photo 17**).

#### Final assembly

You can now sand and finish all the components, taking care not to contaminate the surfaces still to be glued, then make a final dry assembly to try the tambour in its slot; waxing the grooves may help to make it slide more smoothly. The next step is to glue up the biscuits and assemble the bin (**photo 18**), checking that the carcass is absolutely square and that the tambour runs properly before finally setting it aside to dry. And that's it! Now you can add the tambour technique to your repertoire. **WW**



**13** Use the jig to hold the slats tight together as you glue them; try not to let glue run down into the joints



**14** Cut the calico backing to size and smooth into place over the slats; a veneer roller will help when doing this



**15** Apply cramping pressure with a caul; wax the face to prevent it sticking to the backing fabric



**16** Try the completed tambour assembly in its grooves to ensure they all run smoothly



**17** Screw a backing plate to the bottom slat to sandwich the backing fabric and prevent it coming unstuck in use



**18** Assemble the carcass, making sure you insert the tambour the right way round and keep glue out of the grooves



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PART # HC5122M

**Up Cut**

Part #	Shank Dia.	Cutting Dia.	Cutting Length	Overall Length
HU4125	3/8"	3/8"	1-1/4"	3"
HU5125	1/2"	1/2"	1-1/4"	3"

**Down Cut**

Part #	Shank Dia.	Cutting Dia.	Cutting Length	Overall Length
HD4125	3/8"	3/8"	1-1/4"	3"
HD5125	1/2"	1/2"	1-1/4"	3"



**Up / Down Cut (2+2 Compression)**

Part #	Shank Dia.	Cutting Dia.	Cutting Length	Overall Length
HC4122	3/8"	3/8"	1-1/4"	3"
* HC4122M	3/8"	3/8"	1-1/4"	3"
HC5122	1/2"	1/2"	1-1/4"	3"
* HC5122M	1/2"	1/2"	1-1/4"	3"

\* Mortise Style (Short up-cut flute for shallow dado cuts)

**COVE NOSE SPIRALS**

*Two Flute*

**NEW**



PART # RU2075CN

RU2075CN

**Up Cut**

Part #	Shank Dia.	Cutting Dia.	Corner Radius	Cutting Length	Overall Length
RU2075CN	1/4"	1/4"	1/16"	3/4"	2-1/2"
RU5125CN	1/2"	1/2"	1/8"	1-1/4"	3"

**BALL NOSE SPIRALS**

*Two Flute*



PART# RU1800RN

RU2075RN

**Up Cut**

Part #	Shank Dia.	Cutting Dia.	Radius	Cutting Length	Overall Length
RU1800RN	1/4"	3/16"	3/32"	3/4"	2-1/2"
RU2075RN	1/4"	1/4"	1/8"	3/4"	2-1/2"
RU5125RN	1/2"	1/2"	1/4"	1-1/4"	3"

**CONICAL BALL NOSE SPIRALS**

*Four Flute*

**NEW**



SC64

PART # SC64

SC66

PART # SC66

**Up Cut**

Part #	Shank Dia.	Ball Dia.	Radius	Included Angle	Overall Length
SC64	1/4"	1/16"	1/32"	11°	2-1/2"
SC66	1/4"	1/8"	1/16"	7°	2-1/2"

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(A) FLUSH TRIM (B) PLUNGE / PATTERN (C) COMBINATION

Part #	Shank Dia.	Cutting Dia.	Cutting Length	Overall Length
(A) UDF9112	1/2"	7/8"	1-1/8"	3-3/4"
(B) UDP9112	1/2"	7/8"	1-1/8"	3-1/2"
(C) UDC9112	1/2"	7/8"	1-1/8"	3-3/4"

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**NEW**

Up Cut Part #	Down Cut Part #	Cutting Dia.	# Of Flutes	Cutting Length	Overall Length
<b>1/4" SHANK</b>					
RU1581A	-	1/8"	1	1/4"	2"
RU1601A	RD1601A	1/8"	1	1/2"	2-1/2"
RU1701A	-	5/32"	1	5/8"	2-1/2"
RU1801A	-	3/16"	1	5/8"	2-1/2"
RU2074A	RD2074A	1/4"	1	3/4"	2-1/2"
RU2076A	RD2076A	1/4"	2	3/4"	2-1/2"
RU2111A	-	1/4"	1	1-1/8"	3"
<b>3/8" SHANK</b>					
RU4111A	RD4111A	3/8"	1	1-1/8"	3"
<b>1/2" SHANK</b>					
RU5121A	-	1/2"	1	1-1/4"	3"
RU5161A	-	1/2"	1	1-5/8"	3-1/2"
RU5201A	-	1/2"	1	2"	4"



TOP VIEW



PART # RU5111A

**NEWS**

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In the first of a new mini series, **Colin Simpson** shows us a variety of techniques that can be used to make your turned work stand out from the crowd

## Colouring & texturing PART 1

Over the last few years, I have shown you many ways to colour and enhance your woodturning projects. Mark, our Editor, thought that it might be a good idea to bring a number of these techniques, together with a few I have not shown you, into a small mini series. So, over the next few issues, rather than show you how to make one project, I'll provide you with a number of different ways in which you can make your work stand out from the crowd.

### SPIRIT STAINS

There are many ways to apply spirit stains to wood: they can be brushed on, airbrushed or even blown on using a venturi tube. I have also splattered them on using an old toothbrush.

In this case I am going to stain the rim and back of an ash bowl. Spirit stains are quite thin and can bleed through the grain of the wood, so to prevent this happening, turn the bowl to a finish and sand the rim and back to 400 grit.

Sand the inside of the bowl to 120 grit and seal just this area with sanding sealer. Be careful not to allow any sanding sealer to spill over onto the rim. The sanding sealer blocks the ends of the tubes of grain and seals the surface so that any overspill is more easily removed.

### The technique in action

I use Mylands or Chestnut Light Fast Stains (**photo 1**) but other companies make similar products. It is also a good idea to use disposable latex gloves as the stain doesn't distinguish between wood and skin. I am using three colours here: red, blue and yellow and I apply them all at the same time so that they run together, just like the wet-on-wet used in watercolouring. This can appear to be very uncontrolled, but there are a few tips that can give you back some control. Firstly, wet the surface of the wood using cellulose thinners. I want to apply the colour when the surface of the wood still appears shiny from the thinners, but not running with it. If the surface is too wet, then the three colours will run together, creating a flat muddy colour. If the wood is too dry, the colours will not run together enough and can dry with hard lines. Decant enough of the coloured stains into three smaller vessels. This technique can contaminate the colours on the brushes, so don't dip them back into the original bottle. I use small, disposable glue brushes. Dip one brush in each colour and gently shake off the excess. Hold the brushes together in one hand and stipple the wet surface of the platter in a random manner (**photo 2**).



1 A selection of the spirit stains I use



**2** Use three glue brushes to stipple the stains onto the wood...



**3** ... then use individual colours to 'balance' the colouring



**4** Don't overwork the sanding sealer as it will lift the colour off



**5** Lime waxing open-grained woods can be very effective



**6** Use a small bronze brush to pick out the softer areas of grain



**7** Rub liming wax into the opened up grain...



**8** ... then remove the excess using Danish oil on a paper towel



**9** Power sand the inside to remove any stain overspill



**10** If it was sealed properly then the overspill will not have penetrated the wood

Work quickly and recharge the brushes as necessary. Don't worry if some stain runs into the bowl part of the platter. Providing you sealed it well with sanding sealer, the contamination will not penetrate the wood and can easily be cleaned off later. When the area you want coloured is complete you can use individual brushes to add a little more colour in places, if necessary. **Photo 3** shows me applying a little more blue to an area I thought had too much red. Now let the stains dry completely.

The next step is to give the stained surface a liberal coat of cellulose sanding sealer (**photo 4**). This will lift some of the colour so do not brush it on too vigorously. Gently wipe off any excess immediately. The sanding sealer does two jobs here. Firstly, it does remove some colour, giving the piece a more subtle hue, but more importantly, it seals the colour.

On open-grain timbers, such as ash, elm and oak, it is sometimes effective to apply liming wax to the grain after staining the piece, as shown on the elm bowl in **photo 5**. If you intend doing this, sand the area to be coloured to 400 grit and then, before applying the stain, go over the piece with a soft bronze brush to pick out the softer areas of grain (**photo 6**), then apply the stain as described above. If you don't intend to lime wax your piece, you can go straight to step 9.

When the sanding sealer is dry apply liming

wax to the stained area with a paper towel. Rub the wax across the grain to ensure it fills it completely (**photo 7**). Leave the liming wax to dry for a few minutes and then remove the excess wax with Danish oil (**photo 8**). Keep changing the paper towel as it gets contaminated with wax. The liming wax enhances the grain of the wood but it also gives the colour a more pastel appearance. When all the excess liming wax has been removed, leave the piece to dry.

Once the oil has dried, power sand the inside of the bowl to remove the overspill and the sanding sealer that was put on at the beginning (**photo 9**). If the sanding sealer has done its job properly, there should be no sign of the stain on the inside of the bowl (**photo 10**). Sand down to 600 grit and apply another coat of Danish oil to the whole piece, then burnish with a paper towel. A couple more coats of Danish oil applied over the next few days will give the piece a lovely sheen (**photo 11**).



**11** The finished piece



12 Use a stiff wire brush to texture the surface...



13 ... then heavily scorch the wood using a blowtorch



14 Remove the burnt carbon with a bristle brush



15 Apply black stain to the scorched area



16 I use a glue brush to paint on the different metal acrylic paints...

### FAUX BRONZING

This effect uses metal acrylic paints to give the appearance of old, tarnished metal to the wood. I think it looks better if there is a contrast between the metal effect and the wood, so here I am going to 'bronze' the outside of an oak bowl.

#### The technique in action

Turn the bowl as normal, remove all tear-out and sand the outside to 120 grit. Sand the inside to a finish. You need to finish the inside now because when the bowl is scorched it is likely to move a little. Next, use a stiff wire brush on the outside and rim of the bowl to pick out the softer, spring growth fibres (**photo 12**).

To texture the outside further, I scorched it with a blowtorch (**photo 13**). Brush any loose carbon dust away with a stiff bristle brush (**photo 14**), apply a black stain to the scorched area (**photo 15**), then allow to dry.

To achieve the bronze effect I used Jo Sonja's metal paints. These come in various metallic colours and I used two: one called burnished copper and the other pale gold. Apply these paints very sparingly with a small dry brush and distress it in places by rubbing it off with a finger before it fully dries. Keep some of the black showing through and aim to achieve the finish shown in **photo 16**. Keep applying the different colours and rubbing off some paint until you are happy with the result.

To add to the metal effect I knocked in some metal upholstery tacks around the circumference of the bowl and painted these to blend in with the rest of the outside.

When the paint was dry I gave the inside of the bowl a liberal coat of Danish oil and, while this was still wet, I sprayed the outside and the rim with gloss acrylic lacquer (**photo 17**). Because the oil was still wet I could wipe off any over-spray of lacquer on the inside with a paper towel. The finished result can be seen in **photo 18**.



17 ... and finish the outside with acrylic lacquer



18 The finished piece



19 Put a small amount of thinned paint in the centre of the revolving workpiece...



20 ... and add different colours...

**CENTRIFUGAL PAINTING**

Finally this month is a very simple technique, which you could involve your small grandchildren in, if you have any. This would work well on small items such as spinning tops and would be a great crowd puller if you demonstrate at craft shows. Just ensure to not spray the crowd!

**The technique in action**

Here I'm demonstrating it on a small bowl. Start by turning both the outside and inside to a finish and seal the outside with sanding sealer to avoid the paint bleeding through.

Mix a variety of different coloured acrylic paints (spirit stains would also work) to a consistency of ink. Load a small artist's paintbrush with one colour and, with the lathe running at around 750-1,000rpm, put a small blob of paint in the centre of the bowl (photo 19). The revolving wood will make the paint run up the side of the bowl. Clean the brush and add another colour. Keep repeating this process (photo 20), but don't always start in the very centre of the bowl. You should end up with something like this (photo 21). Let the colours dry thoroughly and then give the piece a couple of coats of gloss acrylic lacquer. **WW**



21 ... until you are happy with the result



22 I finished this piece with gloss acrylic lacquer



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# Triple decker

The sturdy design of this bunk unit with pull-out bed and drawers called for appropriately robust building techniques and some quick thinking, recalls **Allan Willey**

**T**hese pine bunk beds had to accommodate a pull-out bed and drawers and needed to be sturdy. My design was also based on mattress and pull-out dimensions and the fact that the unit height had to be restricted to 1,980mm to ensure clearance on the top bunk for its occupant. I opted for 100mm bedposts to give plenty of reinforcement for the heavy structure.



**1** After taking care to orient the posts, the mortises were marked out to one side

## Mortise & tenons

After marking out the mortise positions on the posts (**photo 1**), leaving the posts at full length at this stage to avoid any discrepancies in cut position (**photo 2**), I turned to the tenons on the 50 × 100mm rails for the bed sides. The length of the rails ruled out use of the tablesaw tenoning jig so I built a jig (**photo 3**) for the router to allow me to cut all eight tenons on the bench (**photo 4**).

Next came the bearers that would hold the slats in place on the rails (**photo 5**). Once cut these were put aside until I was ready for them to be added to the rails.

Taking 16 150 × 50mm pieces, I then marked



**2** Cutting the mortises was a simple process thanks to the machine

and cut these with 50mm tenons on the ends as the rails for the head and foot boards, then cut some 25mm square stock for the spindles (**photo 6**). Using the router with a half-round cutter, I rounded the centre section of all 32 pieces (**photo 7**).

With the mortiser I cut the square holes into the head and foot board rails to accommodate the spindles (**photo 8**), finally routing chamfers to the edges to give an eased look and take off the sharp edges.

Next, taking four of the pieces, I laminated another 50 × 100mm section on top of them; once dry these would be bandsawn into a curve. ▶



**3** Because the rails were so long I made a jig to assist in cutting the tenons



4 This jig provided a firm base for use of the hand-held router

### Post work

With these pieces in clamps I returned to the posts. Measuring from the bottom of each one with them all lined up I marked and cut them in half at 940mm, a job for the chop saw with its large capacity to cut the 100mm.

I now needed to cut 50mm holes into the ends of the posts to add a dowel, which would enable the beds to be transported and fitted back together on site. I would normally use the lathe for this work but as the pieces were too long for the lathe bed, I had to figure out another method.

After removing the table on my floor-standing pillar drill I made up a block from scrap materials and cable-tied it to the back of the pillar (**photo 9**). This would ensure that the end of the post was centred under the Forstner bit. I then had to add a couple of blocks of scrap under the base of the posts to raise it enough for drilling. Using a spirit level, I lined up the post below the bit and cut the holes to a depth of 75mm (**photo 10**). My Heath Robinson contraption ensured each of the holes was centred and parallel in each post.

After turning some 50mm dowel on the lathe, I cut these to length for the posts then tapered

one end of each to allow the posts to be joined easily on site (**photo 11**). To disguise any slight discrepancies between the alignment of the posts, I routed a small chamfer around the ends where the posts would connect.

### Back to the boards

With the head and foot board laminations dry, I drew a curve on one of the laminated sections with a flexible piece of timber, then cut out the curve on the bandsaw and transferred the curve to each of the other three pieces, which were then cut in the same way. After routing a large round-over onto the top of each of the curves, the boards were ready for assembly and a test fit (**photo 12**).

Aligning the spindles and tenons with only one pair of hands was tricky, but all was soon safely clamped up (**photo 13**).

### Rail joints

Now it was time to tackle the joints on the rails, using through bolts for their strength as I had seen commercial bed brackets break. Using the pillar drill, I marked out and cut pockets into the ends of each of the side rails (**photo 14**) before



5 Notches were cut in the rail bearers to take the bunk bed slats



6 Pieces lined up and marked ready for routing the spindles



7 The centre sections of the spindles were shaped with a router



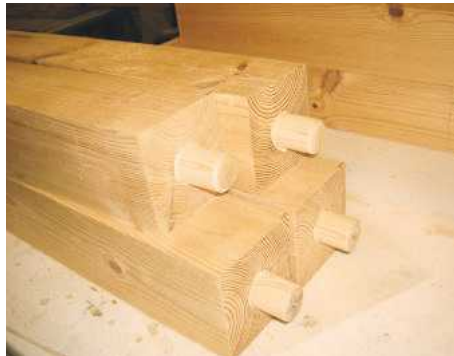
8 Spindle holes were cut with a mortiser in the head and footboard rails



9 This Heath Robinson affair, involving pillar drill, scrap timber and cable ties...



**10** ... worked a treat, drilling the post holes with a Forstner bit



**11** All four posts with lathe-turned dowels installed ready for on-site assembly



**12** The first headboard passed its dry-fit examination...



**13** ... and head and footboards were all OK, so it was on to their glue-up



**14** Pockets were cut into each of the side rails with a Forstner bit in the pillar drill...



**15** ... to look like this. Now all they needed was a good clean up

cleaning them up with a chisel and giving the rails a large-diameter round over with the router (**photo 15**).

Next, using a small-diameter drill bit, I drilled holes through the centre of the mortises and the posts to mark the bolt positions. Using a Forstner bit in the drill, I then cut 20mm deep holes to accommodate the ends of the bolts.

After inserting each rail end tenon into its mortise and, using a 10mm drill, drilling through the post and into the tenon as deep as the bit would reach, I marked the rail and post mortise & tenon for assembly later (**photo 16**).

Removing the rail, I then drilled the remainder of the hole through into the cut pocket. These holes would accommodate the 150mm coach bolts that would secure the bed frames. With all

of the rails finished, I could now glue and screw the bearers to the insides (**photo 17**).

### First dry-fit

After a day in the clamps the head and foot boards were removed and cleaned up, then it was time for my first dry-fit (**photo 18**). This would be a bit of a handful on my own, but having built a few beds in the past I made use of some blocks of wood and clamps to allow me to support the rails and hold things together during assembly.

Supporting the two lower rails on some blocks, I put the bolts through and nipped them up just enough to square up the lower frame, then placed the top headboard onto the bottom one, lining up the holes and dowels, which slid into place with a light tap. The foot board was then

placed on top of the lower one and 'flexed' to fit the side rails into the mortises; this was why I had only nipped up the bolts at this stage. Bolts were then added to the top bunk and everything was tightened up.

With the beds assembled I could now measure the distance between the head and foot boards for the centre rails, which would be mortised into the boards (**photo 19**). This joint would be a dry-fit to allow removal for transport.

Taking two lengths of 50 × 25mm timber, I cut half laps onto each end and rounded over the sides to take off any sharp edges.

Now disassembling the beds, I routed mortises to a depth of 45mm into the centre of the bottom rails on the head and foot boards to take the centre rails.



16 The next job was to drill and test fit the rails

### Now for the ladders

Having measured the height between the two bunks I cut the timber to make the ladders to the top bunk. These were made out of some 100 × 20mm timber and cut into two 990mm lengths and five lengths 330mm long. I then marked out the rung positions on the side pieces and cut dados into them 10mm deep × 20mm to take the rungs before cutting and sanding to a curve the top and bottom ends of the sides. Sections of 25 × 38mm were cut at each end to take the pieces that would mount the ladders to the side of the beds (photo 20), and each piece was given a round over on one edge before assembly.

With these in glue-up I then reassembled the beds with the centre rails in place and started work on the slats, all 33 being cut and the edges rounded over on the router table.

### Lower bunk panels

The pull-out bed is enclosed by end panels on the lower bunk (photo 21). After cutting the 50mm square pieces for the frame and slotting them on the router table with slotting cutters set to 15mm to accommodate the 15mm V tongue & groove panels, I spindle moulded matching tenons on the horizontal pieces, assembled them and clamped up in glue.

I next cut some runners from spare ash,



17 Bearers were attached to the insides of the rails with glue and screws

to guide the pull-out as it was pushed under the bed. A radius cut on the front edge would allow the pull-out to self align. I also added a 25mm square section to the top edge to allow them to be screwed to the side panels.

### Drawer frame

The drawer frame (photo 22) would hang below the lower bunk and house three drawers. Four pieces of 20 × 150mm were cut to fit the width of the bed, a piece cut to a length of 1,930mm to fit the length of the bed between the posts and another 1,930mm piece of 25 × 38mm cut for the front.

Half laps were then cut into the ends of the



19 The centre rails were mortised into the boards with loose mortise & tenons



20 A robust ladder was screwed into place on the bed side



18 Both bunk beds were subjected to a successful test fit



21 End panels were fitted to the bottom bunk to enclose the bottom



**22** The drawer frame that hangs below the lower bunk was fitted in place below the bottom rails

long board and dados cut at one-third intervals. With 25 x 38mm notches cut into the ends of each of the short lengths, I joined all of the pieces with glue and screws and with a little juggling screwed this assembly to the underside of the lower bunk.

Some 15mm ply and use of my dovetail jig resulted in drawer boxes, the bases of which were made from 6mm ply (**photo 28**).

### Guard rails

The guard rails were made from 75 x 20mm timber simply by cutting a curve on one end of the shortest pieces of the front rail and then rounding over all of the edges with the router. For the uprights I used 25 x 20mm pieces, again rounding over the edges and gluing and screwing them together.

These would be screwed to the top bunk rails



**23** The guard rail screwed in place and slats fitted

with two screws and would stand 305mm above the top bunk rails. They would also be screwed into the posts for good support (**photo 23**).

### Pull-out bed

The pull-out bed frame (**photo 24**) was made from four pieces of 20mm timber glued and screwed after rounding over one edge with the router. After cutting some rebates diagonally across the corners, I added 20mm triangular blocks into these for reinforcement and wheel placement (**photo 25**).

With glue and screws I then added some 20 x 45mm timber around the inside of the frame for the slats to sit on (**photo 26**), and biscuit-jointed the ends into the triangular pieces for more strength. After fitting the dry end panels to the bed, the guide runners were screwed to them and the pull-out was put into position to



**24** The pull-out out frame was built from four pieces of timber and fitted with wheels...

### GET OUT OF THAT ONE!

After positioning the pull-out bed I found an error: when marking out the posts I had accidentally made the bottom bunk 25mm lower to the ground, meaning there would not be enough space between the bottom of the drawers and the clearance for the mattress on the pull-out. How could I work around this while keeping within the required dimensions of the beds? The solution lay in adding 50mm blocks to the bottom of the four legs and cutting down the top of the lower bunk posts by the same amount.

The blocks were added with glue and screws by cutting a chamfer around the top and bottom of each to give the impression of feet – brilliant! With the head and foot boards assembled, cutting the tops down was more difficult. I cut them close to the line with a hand saw and then, standing each of them next to my bench on level ground, used my router with an extended base to cut them down to the line and level. I then had to use the pillar drill to deepen the holes in the post tops, but this was easier this time as there were already holes in the posts. The result was a snug and sound fit with the required spacing under the bottom bunk. Phew!

test the fit, resulting in a satisfactory 13mm clearance between the runners (**photo 27**).

### Drawer & fronts

I then laminated pieces of 20mm timber for the drawer and pull-out fronts and put them aside in the clamps (**photo 29**). With these in glue I gave the whole lot a good sanding ready for a finish.

When dry, the laminated pieces were cut to size, after which I routed a groove around the panels using a classic bead cutter and routed a round-over on the edges before cutting hand holes with the jigsaw and rounding the inside edges again with the router.

On the reverse of the drawer fronts I cut a rebate to allow a grip on the drawers when opening them (**photo 30**).

I attached the pull-out front with screws, using thin blocks to space it from the floor so it sat 200mm above the slats of the pull-out to allow clearance for the mattress. I had allowed



**25** ... and the cut-outs were to take reinforcing triangular blocks on which to attach the wheels

## WOODWORK Bunk beds

a 13mm gap at the bottom of the pull-out front to the floor to allow for the wheels to run unhindered on a carpeted floor.

### Finishing & fitting

Next came a coat of cellulose sanding sealer. When dry everything was sanded with 320 grit and dusted off to receive two coats of brushed on water-based antique pine varnish, chosen to match a set of bunk beds the client already owned. I delivered the beds a couple of days later and spent just over an hour fitting them and making sure everything lined up and worked. Unfortunately the bunk mattresses hadn't arrived yet as the customer had ordered them separately. He did have the mattress for the pull-out, however, and I fitted this in place and made sure it had enough clearance under the beds.

I am glad to say the customer was very happy with the result and am sure to receive more work from him, which is always a bonus. **WW**

### TIP

I am not a lover of water-based varnishes because they tend to pull with the brush and become streaky, so to avoid this I always apply it in thin coats, allowing plenty of drying time in between



**26** Bearers were cut on the radial arm saw ready for fitting to the pull-out frame



**27** Scraps were clamped to the frame to check pull-out front depth



**28** The drawer boxes assembled and ready for fitting



**29** Laminated timber for the drawer fronts was left in clamps



**30** All drawer fronts and pull-out in place, ready for the finish

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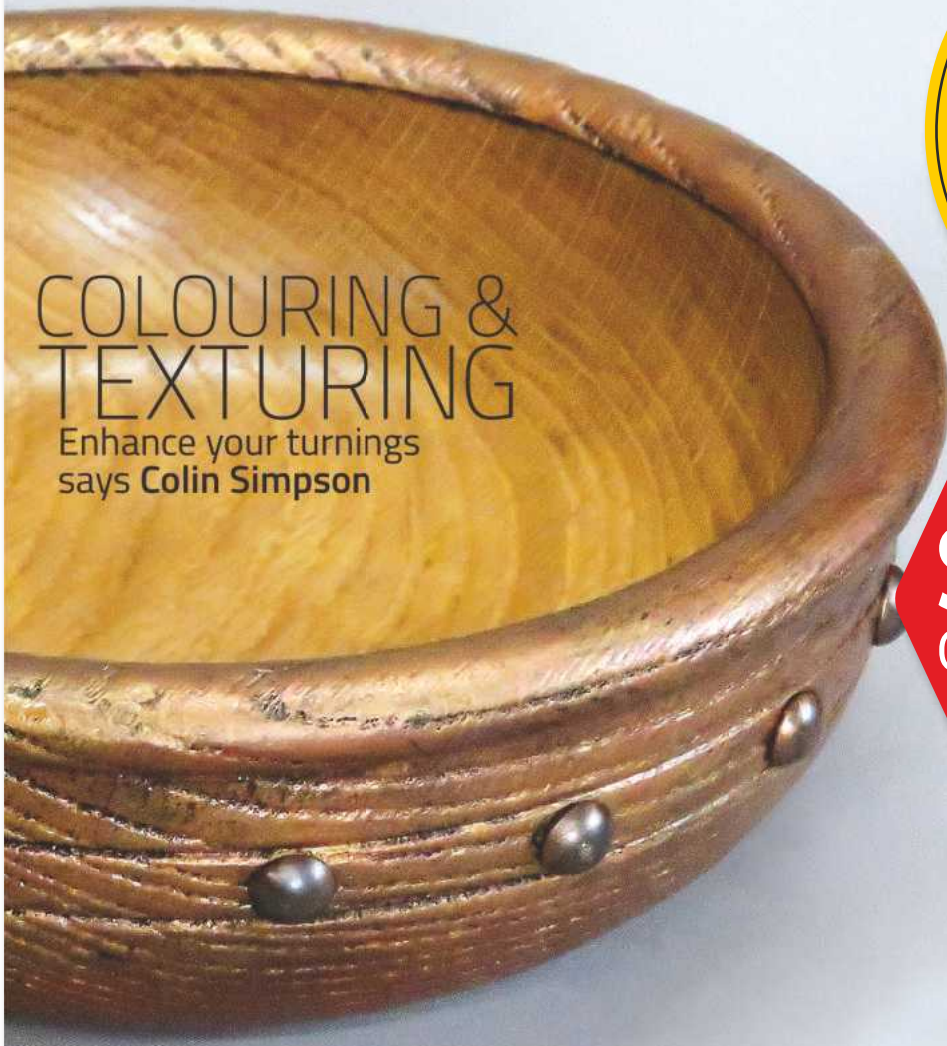
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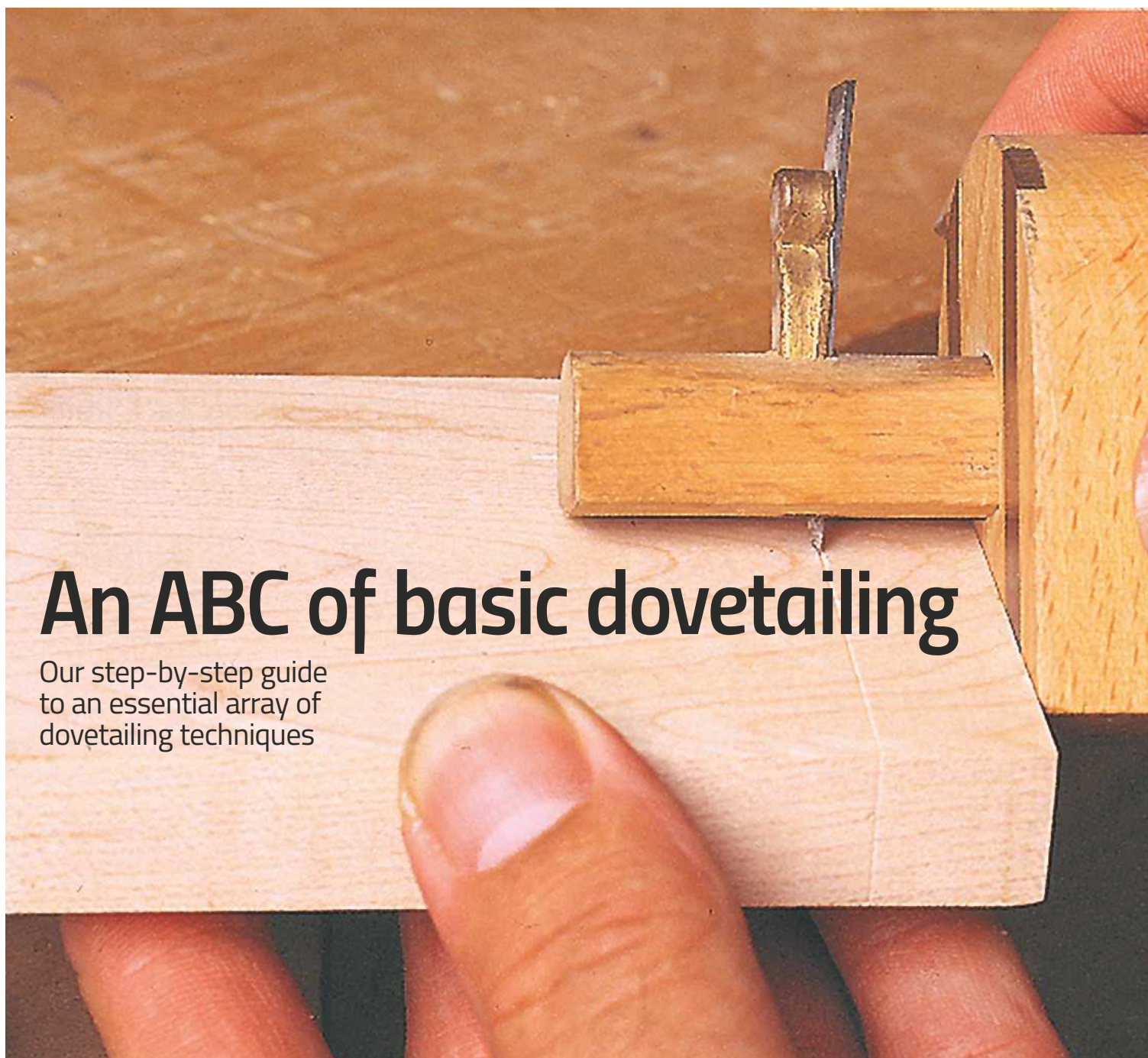
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# An ABC of basic dovetailing

Our step-by-step guide to an essential array of dovetailing techniques

**A**s a means of holding two pieces of solid wood together at a corner, regardless of their width and thickness, the dovetail is probably second to none. The basic dovetail is also the joint that causes the most anguish in the workshop, although some woodworkers tend to think more positively about the challenge that it represents, often designing it into a piece just because they enjoy the simplicity of a joint where one half acts as a template to form the second half.

Although the dovetail can be machine-cut using a jig, hand methods are quick and involve a minimum of tools: a sharp, fine-toothed dovetail saw, marking knife and gauges, some well-honed chisels, and a coping saw will do the job; and if you supply the practice and patience, they'll do a really good job!



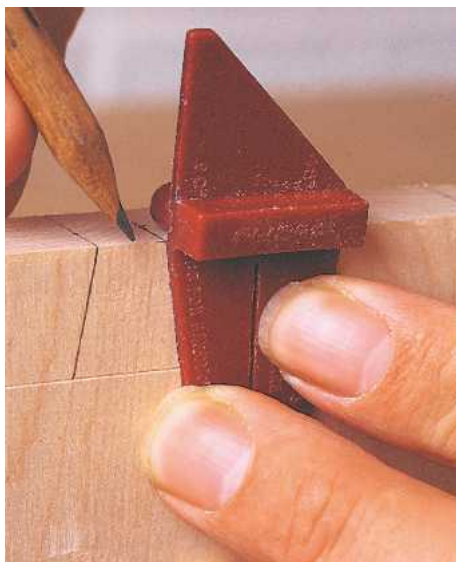
**2** Once the tail spacings have been determined, square them across the timber ends with a sharp pencil. A large try square is too awkward for this, especially when working on the ends of the timber, so use a small version specifically for dovetails, such as this one from the Marples range



**1** The timber ends must be cut absolutely square or the carcass will twist. Scribe the tail and pin shoulder lines with a sharp gauging knife. Unlike a pencil line, or a pin gauge, which will tear the fibres, this gives a crisp indent to locate the chisel precisely when the joint is pared back



**3** The correct tail angle is crucial; too much and the short-grain shears off, too little and you lose the strength of those interlocked wedges. A ratio of 1:6 is fine for basic carcassing or softwood; 1:7 or 1:8 is more common for finer show joints in hardwoods. Transfer the angle to a sliding bevel from a ratio drawn on the corner of the bench or a piece of scrap



**4** As when squaring the ends, a normal sliding bevel is too large for accurate marking of the tails. Various templates are available with a range of angles on them...



**5** ... including this pair from Veritas. Whatever you use, mark the lines with a hard sharp pencil (1H or 2H) and take care that they align exactly with the squared lines across the ends. Keep the lines clear but light and don't make multiple passes, which only confuse the issue when cutting

### Tooling up for clarity & precision

For best results, it's essential that your marking out is clear and precise. Master this, and you should be able to produce consistently neat, snugly fitting tails and pins.

The starting point is a sharp pencil. Sawing the tail and pin cheeks accurately necessitates just kissing the marked line with the saw, so a smudgy 2B pencil line is of no earthly use. Buy yourself a 2H pencil, sharpen it to a fine point, and use it to mark thin, precise lines, which should be drawn once only. Alternatively, equip yourself with a fine marking knife.

The conventional marking aids – the try square and sliding bevel – are generally too awkward to use for marking the tails on the ends of narrow timbers. Miniature squares and bevels are better suited to this work. There are also several excellent dovetail templates on the market, though you could

easily make your own from scraps of plastic or alloy, varying the tail angles to suit the timber and the look you're trying to achieve.

Generally speaking, however, gauges giving 1:6 bevels for joints in softwoods and 1:8 bevels for joints in hardwood will be sufficient for most purposes.

### Tails or pins?

Which do you cut first – the tails or the pins? Pete Martin preferred to cut the tails and then use them to mark the pins. "It's easier," he reckoned, "to put a pin piece in the vice and lay the tail onto it than to attempt the reverse, with the pin balanced precariously on top of the tail piece." Whichever way round you work, though, it all boils down to tracing the exact shape with the sharpest pencil/knife possible.

Even then, it's all too easy to end up with

a mismatched set of dovetails around a carcass unless you're equally careful about identifying each and every component and its orientation to its neighbour. To do this, lay out the boards and mark them clearly with both a face side and face edge, then label the pairs of matching ends.

When you start work, scribe the shoulder line around each end with a gauging knife rather than a pencil and square (**photo 1**). And rather than scribing a line to represent the exact thickness of the timber stock, make an allowance that will result in the tails and pins each being 1mm over length. That way, planing or sanding the protruding ends flush after assembly will also remove any signs of blade wander at the start of each cut.

The number of tails and pins in any joint is largely a matter of matching their proportions to the overall piece, although their shape and

size will affect the strength of the joint, of course. Having settled on the joint's configuration, set it out on the end of the first tail piece, squaring the measurements across the end of the timber (**photo 2**) and marking the tail angles down to the shoulder line with the aid of a template or bevel (**photos 4 & 5**). At first, you may find it useful to mark these on both faces of the cut to help keep the saw straight; after a little practice, however, you'll probably only need to mark the front face.

### Cutting the tails

Mark the waste areas between the tails clearly to ensure that you cut to the right side of the line; for safety's sake, cross-hatch the waste on both the top edge and front face (**photo 6**).

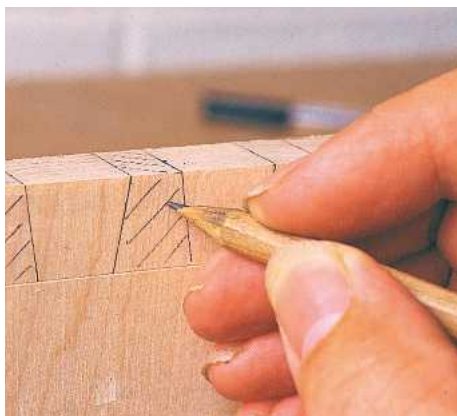
The aim now should be to cut just to the waste side so that the kerf is just kissing the line. This is less critical on tails which – if you're cutting them first – provide the template for the pins, but it is essential when cutting the pins themselves if they are to match the tails perfectly.

Having sawn or chopped away most of the waste, it becomes obvious, as you pare back to the line with a chisel, why a marking gauge fitted with a knife rather than a pin is used to mark the shoulder: the knife cut leaves a crisp groove, which guides the chisel into exactly the right position every time (**photo 9**).

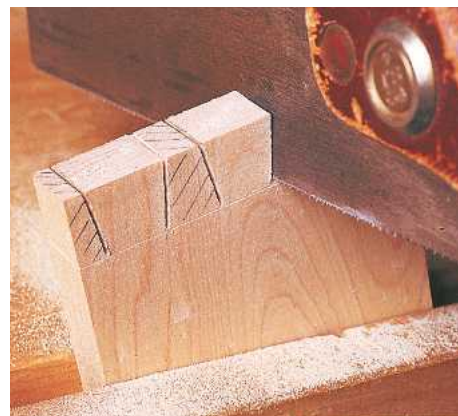
### Marking the pins

When it comes to marking out the pins from the completed tails (**photo 10**) it's important that the two mating pieces are aligned absolutely square to one another and that you use a freshly sharpened pencil to trace the shapes.

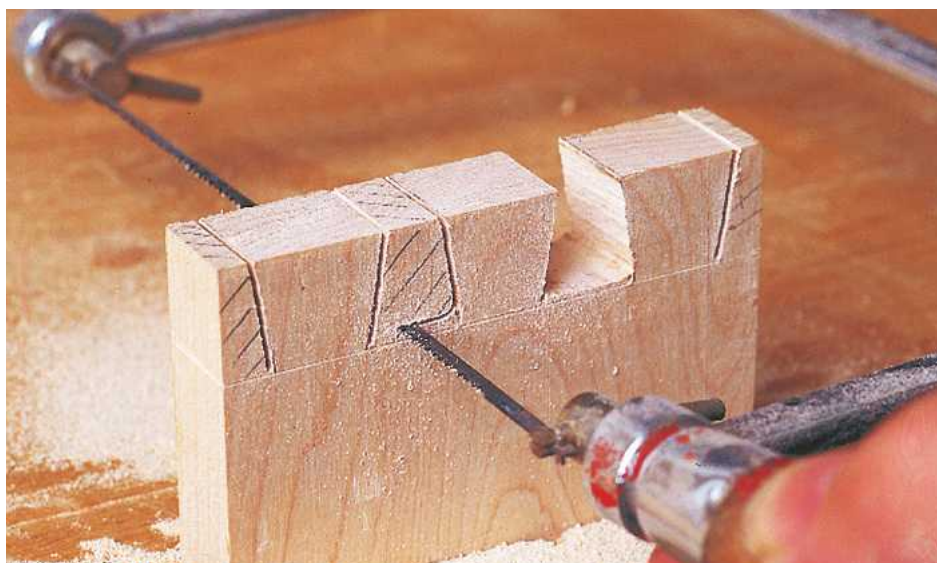
If you use a marking knife, get one with a single bevel on it that will sit close up against the tail. If you then exercise the same care in cutting the pins, you should have no problems in making a neat dovetailed joint that's good enough to display on the outside of your carcass for all to see. **WW**



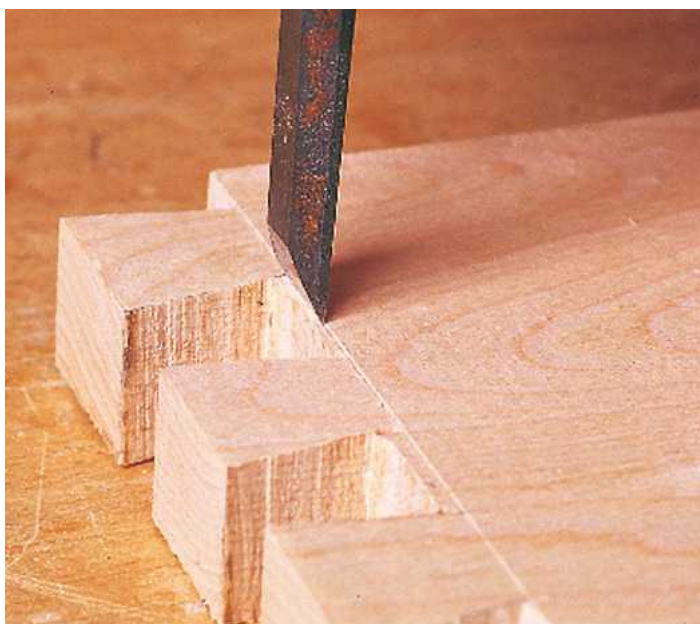
**6** Cutting two tails on mating pieces or wasting the wrong section are the two most common mistakes in dovetailing, so mark the joint sequence and orientation clearly, and cross-hatch the waste areas between the tails. Double-check both before you start



**7** Tilt the wood in the vice until the tail cheeks can be cut vertically rather than at an angle, keeping the timber as low as possible in the vice so that vibration won't cause ragged saw cuts. Ensure that the saw is cutting square



**8** Most of the waste between the tails can be removed with a coping saw, taking care not to cut past the shoulder line or into the cheeks; this is when clear marking of the waste sections pays off. The half-pin waste at the ends can be cut away to the shoulder with the dovetail saw, and with the timber held horizontally



**9** Use a sharp bevel chisel, guided by the gauged knife line, to pare back the waste. Work towards the middle from either side of the timber, taking care not to bruise the wood with chips on the bench top as you turn it over. Leaving the face of the shoulder slightly concave rather than convex will help ensure a tightly fitting joint



**10** The pins are traced directly from the tails with a fine pencil. Hold the pieces firmly together, with the shoulder line for the tails accurately aligned with the rear edge of the lower timber, and the sides flush and square with each other. Be sure to cut to the correct side of the lines or the joint will be slack

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# Perfect veneer joints

Ian Hawthorne explains how to achieve those near-seamless veneer joints

**V**eneering is an effective way of transforming what could be viewed as an ordinary piece of woodworking into something quite exceptional.

For boxmaking, which is my focus, veneers allow you to create unique pieces, and I often use a variety of different veneers to decorate the lid tops of boxes.

Sometimes adding veneers is not as

straightforward as cutting and placing them in, though. The veneer piece you have may not be the right shape for what you had in mind, or perhaps you want it bookmatched or you'd like to arrange it into a particular design, such as steps.

On such occasions there are several ways of jointing veneers, including the use of a veneer saw, shooting board, jointer, scalpel and straightedge, or using a router with flush trim bit. I have tried most of these methods with varying degrees of success as they all have their drawbacks. A jointer, for instance, works well on straight-grained veneers but will tear figured or burr veneers.

After experimenting with different jointing methods I have finally settled on using a simplified abrasive technique, which I have found produces perfect results, even on light coloured and delicate veneers.

## Sanding board

It's crucial to ensure that the sanding board is flat and long enough to easily accommodate the length of the veneers you're going to use.

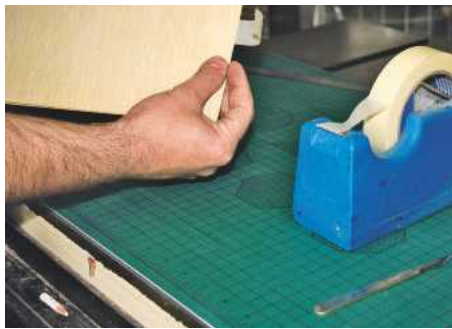
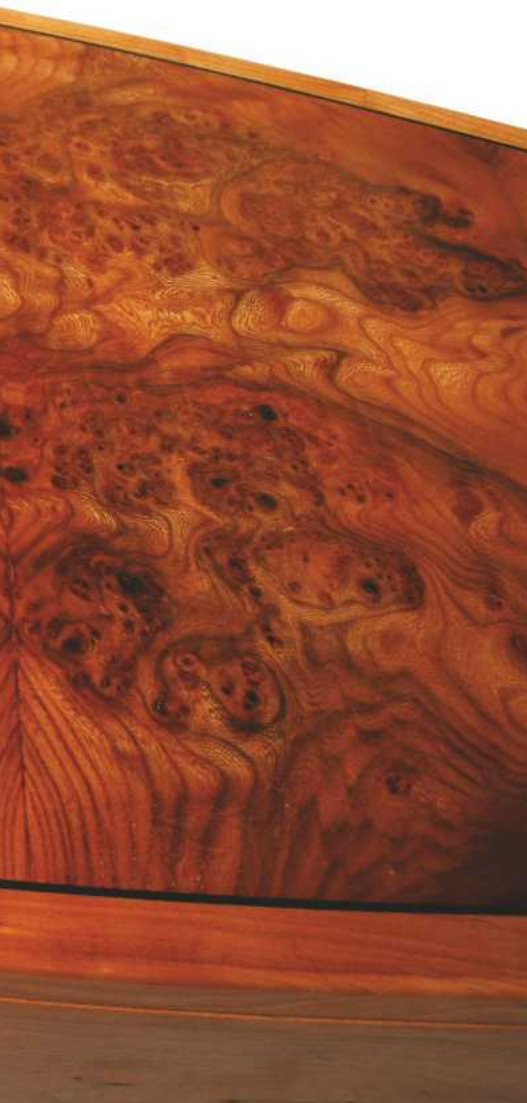
My own sanding board is a piece of 18mm MDF clamped to the table of the cast-iron table saw. When I first checked the cast-iron table it had a slight dip in the middle, so I shimmed under the MDF with masking tape until I had a perfectly flat surface with no deflection. I then double-checked this with my straightedge (**photo 1**).



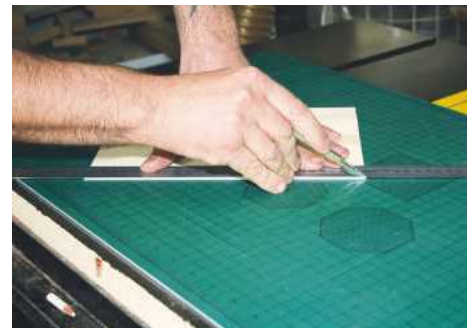
**1** The surface of your sanding board needs to be absolutely flat; I shimmed this MDF board for the job

## MATERIALS REQUIRED

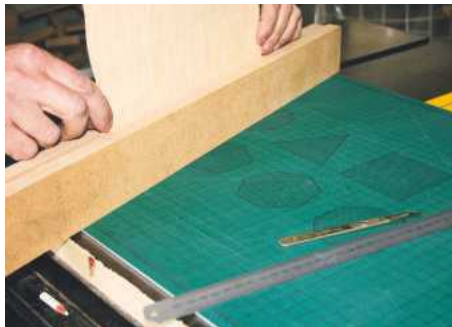
MDF board  
Clamps  
Double-sided tape  
100 grit abrasive paper  
Scalpel and ruler



**3** After choosing your veneers – in this case ripple sycamore – tape them together



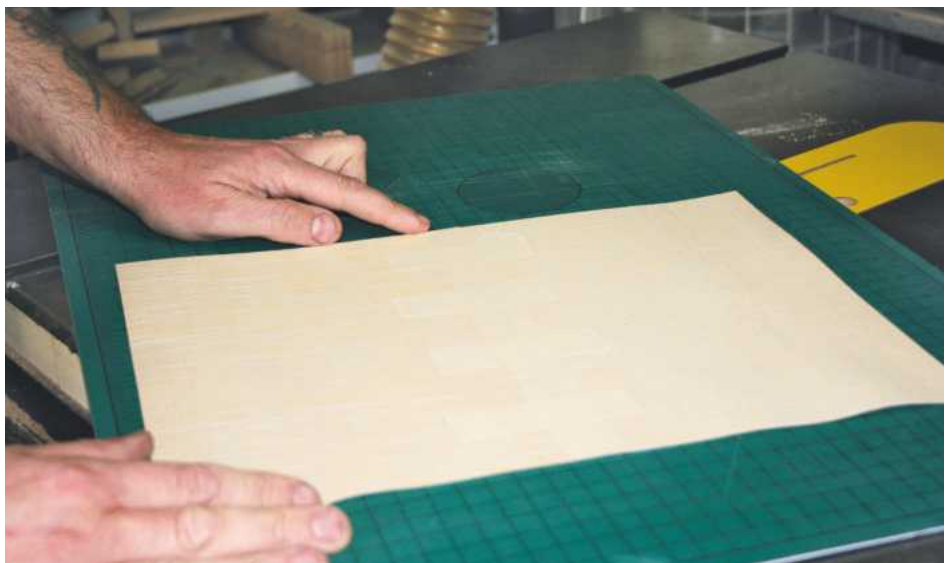
**4** Take a skim off the edge with a sharp scalpel and ruler, thus making them flush



**5** Next, sandwich the veneers between two pieces of 18mm MDF...



**6** ... then clamp together, and mark a wavy pencil line along the underside's length



**7** Having removed the veneers from the MDF, tape the front sides together using low-tack masking tape

Next you need to apply double-sided tape to the top of the MDF board and stick on a piece of 100mm wide 100 grit abrasive paper to cover the length (**photo 2**).

### Flat's the way

Veneers need to be flat to joint them successfully and so if you are using burr or figured veneer, you must flatten them first by using a solution of water, alcohol and glycerine; I use six parts water, three parts alcohol and one part glycerine. Spray



**2** Apply double-sided tape to the top of the board and stick down 100mm of 100 grit abrasive paper

the solution onto the veneer and let it stand for 10 minutes.

If you don't have a veneer press, then place a sheet of kitchen roll above and below it to soak up any extra moisture and press the veneer between two MDF boards. Press for 24 hours, changing the kitchen towel half way through.

### Scalpel and sand

Select the veneers to be jointed and tape them together (**photo 3**). Take a skim off the edge with a fresh scalpel and ruler to make them flush (**photo 4**) and sandwich them between two pieces of 18mm MDF (**photo 5**). Clamp the veneers and MDF together, turn upside down and mark a wavy pencil line along the length and take them over to the sanding board (**photo 6**). Now comes the fun bit: using a side-to-side motion, continue sanding until the pencil markings have disappeared.

### Low-tack tape

Remove your veneers from the MDF and tape the front sides together using low-tack masking tape – I use Tesa Sensitive (**photo 7**) – see details at the end of the article. When applying the tape, stretch it very slightly to ensure the joint is pulled tight.

The next step is to turn the veneers over and add a little glue to the seam before taping the back in place. Let it dry for 30 minutes before gently removing the tape from the front and back and pressing onto your groundwork. Job's a good 'un. **ww**

### FURTHER INFORMATION

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# Coming up in the next issue...

WW Autumn Special  
on sale 22 September

## WOODTURNING DESIGN

What does designing a turned piece actually involve? Bob Chapman finds out



### NINE MEN'S MORRIS

Continuing with his board games mini series, Peter Dunsmore shows how to make this strategy board game for two players, which dates back to the Roman Empire



### RESTORED – THE JOY OF WOODWORK

Robin Gates recalls how some basic woodwork gave two old friends a new lease on life

**PLUS** ■ Making a small sash ■ Charles Rennie Mackintosh  
■ Sanding machines ■ From tree to bench – part 3

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### Specification

**Max torque:** 30/15Nm

**No-load speed:**

0–400/0–1,300rpm

**Battery type:** 2.0Ah

Lithium-ion

**Battery voltage:** 12V

**Chuck capacity:** 1/10mm

**Torque settings:** 20+1

**Bit holder:** 1/8in internal hexagon

**Weight without battery:**

0.6kg

**Length:** 132mm

**Height:** 178mm

**Max drilling in wood:**

30mm

**Max drilling in steel:**

10mm

**Max screw diameter:**

7mm

**Typical price:** £238 (but

expect to pay around £200 for the FlexiClick if you shop around)

**Web:** www.bosch-pt.com

### PROS

- Where to start? It's compact, lightweight and hugely versatile

### CONS

- I'm still looking for some

**RATING:** 5 out of 5

## Bosch GSR 12V-15FC FlexiClick drill driver

The new FlexiClick system from Bosch is truly a polished product. Not only is it slick, powerful and efficient, but changing the chucks is also enormously pleasing

Although most of us will have one or two cordless drills and drivers in our kits, for anyone just setting up they could do a whole lot worse than to invest in the new Bosch FlexiClick. This manages to combine everything you need for interior fitting and general woodwork in a neat and compact package. Re-engineered from a similar Bosch 18V system a year or two back, the new 12V version (actually 10.8V but re-badged to conform with the current market trend of displaying the maximum peak voltage available) is smoother and more efficient in its chuck changes.

I'm sure that most of us will have encountered tight-spot drilling and screwdriving situations in the course of our working lives, but happily that should be considerably easier as the FlexiClick has a chuck or adaptor to cope with just about anything. The basic driver itself has a very short body length

of only 132mm (with no chuck fitted) and so the whole unit starts from a position of easy access and goes on from there.

### Standard chucks

First up is a standard three-jaw chuck with a maximum capacity of 10mm, which turns the FlexiClick into a regular compact drill. All the standard features are here: progressive trigger action, easy speed and direction change, plus battery indicator and the now ubiquitous LED worklight (with sensible 10 second afterglow). It's one of the most comfortable drills to hold and use and, for those of us who don't mind working up a ladder or on steps, a nylon holster – with retaining strap – is provided, which can loop onto a belt (anyone like me who prefers the low-slung quick-draw cowboy style will just have to work out their own solution).



The FlexiClick, safe in its holster



The compact drill driver, surrounded by its four interchangeable chucks and adaptors



The two parts simply push together and twist to lock with a satisfying 'click'



Grip the collar, twist and the chuck can be changed



The right-angle adaptor with hex-bit holder fitted



The worklight plus battery indicator (showing low)

The chucks (or adaptors) are so easy to remove from the driver body: just grip and twist and the two come apart in a most satisfying manner. The next chuck is the hex-bit holder. Although a hex bit can be set directly into the magnetic driver mounting spindle (the root of the drive), for added security in working – and to protect the inner faceplate – the hex-bit holder will lock your bit in place and make for a better driving experience all round.

### Adapt & thrive

I think it's the inclusion of the two adaptors, however, which really make the FlexiClick system the polished product it rightly deserves to be. Of these, the right-angle adaptor will be the most familiar, and provides the user with the chance to either work round corners or to get a drill bit into an area of very restricted access (and with homes getting ever smaller these days, any saving when it comes to space just has to be a good thing). The right-angle adaptor has a duplicate of the body faceplate and drive spindle on the business end, which allows either drill chuck or driver to be used with ease.

Even though it will probably get the least use of all the four 'chucks', the offset driver could be the one which provides the biggest relief and working satisfaction. Driving a screw at floor level (or anywhere you can't get directly behind the screw) has always been problematical, but here is a simple solution and one which is elegantly achieved. Often there'll be just one unreachable screw, which is critical to the job, and it will be this offset driver that will save the day.

### In summary

The build quality is just what you'd expect from this German giant of manufacturing, and while some may carp about the motor not being brushless (another high-end enhancement common to the bigger brands, including Bosch), I for one think this will make very little difference to both the overall performance and the life of the tool. My original 10.8V Bosch

driver (almost identical and also not brushless) is still going strong after seven hard years' labour.

Like many recent innovations, I wish this one had been around years ago when I first started out. It's slick, powerful, efficient and changing the chucks is enormously pleasing; definitely worth a look. **MC**



The offset adaptor is perfect for awkward access



The NOVA Comet II midi lathe – the beginner's dream!

### Specification

**Weight:** 35kg  
**Motor:** 550W  
**Speeds:** 250-680rpm;  
 530-1,420rpm;  
 1,380-4,000rpm  
**Head and tailstock bore:**  
 No.2 Morse taper  
**Swing over bed:** 305mm  
**Max distance between centres:** 420mm

**Price:** £599.74  
 (including NOVA G3 reversible woodturning chuck)  
**Web:** www.brimarc.com

### PROS

- Variable-speed
- Big motor
- 2MT
- Easy reach adjustments
- Solid build quality

### CONS

- Short toolrest
- Very difficult to see the speeds on the dial

**RATING:** 4.5 out of 5

## NOVA Comet II VS midi lathe

The Nova Comet II midi lathe is ideal for beginner turners and offers great results, but a digital readout and bigger beds would make a world of difference

I'm still a fledgling woodturner, and as with other forms of woodworking, I'm continually learning; although woodturning definitely does need a lot more concentration when attempting the finer side of things, as one lapse usually results in a catch with disastrous results.

For me, a smaller lathe never seems quite as daunting, and as I'm unlikely to turn a full set of stair parts or table legs, suits me perfectly. Having had a chance to look at the NOVA Comet II from Teknatool, I found it's one that makes life that bit easier for me and should do the same for any novice or intermediate turner looking for a well-built, stable and easy to use machine. It also has the added bonus of being able to fit an extension bed, if you do want to start working on longer pieces. It also has a 3' bit more 'oomph' on bigger pieces, resulting in quite meaty cuts if needed, but for me its real comfort zone is the finer side of things, especially working to its 'out of the box' capacities rather than extending the beds.



The banjo secures solidly with excellent quality fittings

### Solid build

So looking more closely at that solid and robust build, it has cast-iron beds, a silky smooth operating quill and easily adjustable firm holding toolrest, although here I found it a little wanting due to it only being 150mm long, which means that any longer spindle-type work requires you to move the rest along a little – a longer rest would allow for an easier operation here.

The tailstock allows for easy adjustment, which means that it scores highly for me. It's well thought out with the locking lever in easy reach for quick adjustments; no reaching round the back for levers and knobs as can be the case on rival machines.

### Variable-speed

But for me, the variable-speed is the real game changer. Like routing, lathe work demands similar principles so smaller work can be spun faster, whereas bigger work needs to be slowed down to work safely. On belt change machines there's



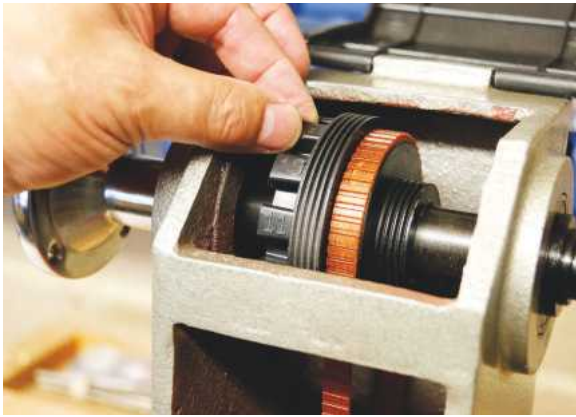
The lathe is put into reverse with the simple flick of a switch



The speeds around the controller dial are very hard to read!



This lever and handle combination is used to swap the belt position



The top pulley has 12 indexing positions



You lock the pulley wheel by pulling out and rotating this disc

always a tendency to go for a 'middle for diddle' belt setting that gives the best compromise between the two, as belt swaps can be a pain.

The variable-speed on the Comet II is operated by a dial on the right of the bed with a good range of speeds across its three settings. These three settings mean that belt swaps aren't eliminated, but you can set the machine to the work you are doing and slow it down to do the roughing and centralising work before stepping it up once it's round and true.

There's also a crossover of speeds within these settings so you can sit it in one speed ratio while still allowing a bit of leeway into another ratio if needed.

### Need for digital

The swapping of the belt is simple: the plastic front cover hinges to lift away and gives full access to the drives while a small external Bristol lever secures the tensioning lever to change the positions easily. My only gripe here is the sticker

that indicates the speeds: the writing is so small that it is difficult to see where you're at when altering the speed, but I guess you soon begin to get an idea of what feels right as you become more confident.

I'd be inclined to make a simple chart to indicate the speeds at set positions and stick it to the headstock pulley case for easier reference. Who knows, maybe the MKIII will have an easier to read dial or, better still, a digital readout!

Alongside the speed dial is a small switch that alters the spindle direction to aid sanding work. You have to remember that in reversing the direction, anything screwed to the drive spindle can become detached, so any faceplate or chuck has to have a securing grub screw or similar. Whichever direction the lathe is running, it's a very smooth and whisper quiet operation with no vibration through the spindle.

### No.2 Morse taper

The lathe has the bigger No.2 Morse taper fitting for the head



A well-positioned lock makes tailstock adjustments very easy



Top quality fittings, such as the quill advance, are a theme throughout the lathe



Between centres work is a very smooth, quiet and vibration-free ride



The toolrest is a tad short for longer spindle-type work

and tailstock, normally associated with bigger lathes, which helps to achieve maximum surface bearing when the lathe is under load. The tailstock is also self-ejecting with any fitment removed by winding the quill back in. You can still eject through the hollow tailstock using the supplied rod if necessary; the same hollow feature is replicated in the headstock.

At the drive end the thread is a 1in x 8tpi spindle for faceplate and chuck work, but if you already own other chucks and accessories from a different lathe spindle profile, there are thread adaptors available.

At the rear of the headstock is a large spring-loaded rotating disc that serves the dual purpose of acting as a spindle lock for removing accessories screwed to the spindle, or for decorative work, as an indexing pin, engaging into any of the 12 positions, holding firmly while you work.

#### In use

Before giving the lathe a workout, I did a minor bit of fettling: a little coat of paste wax along the beds to help the banjo and tailstock run more freely being the main one, with a run over the toolrest with a fine file to soften its quite sharp edge, which will allow chisels to move freely without snagging.

I started by turning a bowl or two to check the higher torque involved – no problem in this area and I was taking some pretty meaty cuts to true the blank as well as the general shaping. Maybe not as attacking as our own Colin Simpson when he goes in with a chisel, but I was happy enough! It's certainly a real boon to be able to set a relatively slow speed to true the blank before ramping it up with the dial to get nice clean cuts rather than swapping belts!

However, being a smaller lathe with limited capacity over



The variable-speed makes the NOVA brilliant for smaller projects, such as pen kits



Working the interiors of bowls is easier with the tailstock removed

the beds, I did find it made life more difficult when trying to take some cuts with traditional long-handled tools, specifically dropping the handle, as it clashed on the bed. Also the tailstock gets you bunched up when working directly in line, but that particular problem is easily rectified by slipping the tailstock off the beds, which affords you plenty of elbow room.

#### In summary

I do like making pen kits and I've been putting the lathe to work in this area extensively, and I'm pleased to report that it hasn't let me down at all. The lathe is so easy to adjust for initial setting up as well as speeds and runs so smoothly in use. I've been getting really great results throughout and I'm certainly far more confident and able to experiment since it's been with me. Only a couple of minor niggles keep this lathe from hitting top marks, but it's a lathe that hits the spot nonetheless. **AK**



Using a chuck is a great way to expand your horizons with any lathe



There's plenty of power for higher torque applications

# CEL 14.4V impact driver

If you're looking for an impact driver for occasional workshop use, then this offering from CEL represents pretty good value

Many of you will remember the Power8workshop that was launched a few years ago after its appearance on TV's *Dragon's Den*. In fact, a while back I ended up using one with a project on the Get Woodworking stand at one of the Alexandra Palace woodwork shows. The concept was great, though there were a few teething problems as I remember. So when I heard about this range of DIY cordless tools from CEL, I was interested to find out more.

Like the Bosch and Ryobi cordless tool systems, the CEL 144 range is based around a single battery common to each tool. You only need buy one power pack as individual tools are bought bare (without battery). Unlike these two familiar brands, CEL features a 14.4V platform, rather than 18V. To be honest, for most work around the house 14.4V is more than adequate. Remember when 7.2V tools were popular, with 9.6V pro models regarded as a peak in terms of performance?

## Battery & charger

These lithium batteries are rated at 1.5Ah, fairly common on budget tools and this is reflected in their cost. As yet,



Allow at least 40 minutes for battery charging



Red means it's charging; green means go



CEL doesn't have plans to introduce a larger power pack, so it would probably be wise to buy a couple to get started. With no power level indicator it's guesswork as to how much juice is remaining in the battery, so a second pack will stop you from taking that extra long tea break...

The fast charger will get a discharged battery up to 80% capacity in about 40 minutes, while full capacity takes one hour.

There are two status LEDs at the front of the unit, which is all you really need. While charging a solid red LED illuminates, switching to green when fully charged.

## Making an impact

At first glance you may well think this impact driver was a Hitachi tool with its striking colour scheme. Weighing a tad over 1kg (with battery fitted), it's comfortable enough to hold with no shortage of textured, soft-grip rubber. The trigger is a decent size, while the forward/reverse button is easy to reach. As you'd expect now, an LED worklamp is located below the chuck, activated when you squeeze the trigger, and at the sharp end is a standard quick-release 1/8"

Speed range is from 0-2,400rpm, fairly standard for an impact driver, with maximum torque possible at 90Nm – much lower than a professional model but still reasonable. My test for an impact driver involves driving 75mm screws into softwood and hardwood without pilot holes. The CEL coped with softwood well enough, though the tool struggled when driving screws into a chunk of iroko.

## In summary

These tools are not industrially-rated, so don't expect top performance for heavy-duty work. That said, for occasional use in the workshop they're cheap enough and pretty good value. One way that CEL has reduced costs is by providing a no-frills cardboard box for each product, though if you want a heavy-duty storage bag this is available as an extra. Other tools in the range include an SDS hammer drill, jigsaw and drill/driver. **PD**

## Specification

**Voltage:** 14.4V  
**Maximum torque:** 90Nm  
**Impact/hammer rate:** 0-3,300ipm  
**No load speed:** 0-2,400rpm  
**Chuck type capacity:** 1/8" Hex  
**Drilling capacity:** Steel: 10mm; wood: 13mm; masonry: 10mm  
**Weight in use:** 1.15kg

**Price:** £59.90 with battery and fast charger  
**Web:** www.cel-uk.com

## PROS

- Quick charging
- Good for occasional use in the workshop
- Good value

## CONS

- 14.4V platform could be limiting for some
- No power level indicator
- A second battery may be required

**RATING:** 3.5 out of 5



Squeeze the trigger to activate the worklamp



Softwood yes, but the jury's out on iroko

**Specification**

Price: £99.99

Web: [www.ryobitools.eu](http://www.ryobitools.eu)

RATING: 5 out of 5

## Ryobi 18V 5.0Ah battery

With an impressive run time this new battery is deserving of its five stars

With power tools becoming more compact while our demand for greater working efficiency and power increases, it's no surprise that cordless kit is often preferred to mains-powered equivalents these days. Breakthroughs in battery technology have been a major factor here, with lithium-ion development at the forefront. Most professional brands now have a 5.0Ah battery pack in their range, though Ryobi are arguably the first consumer brand to add one to their extensive line-up.

**Handy features**

Part of the 18V One Plus stable, this is exactly the same size and virtually the same weight (740g) as the earlier 4.0Ah model and can be used across Ryobi's 18V range. A familiar feature is the fuel gauge, removing the guesswork from estimating battery life. Depress the button and a four-segment LED display indicates what's remaining in the tank. This can be tricky to read in direct sunlight, but it's still a very handy feature.

**Performance**

Individual cells are monitored via Ryobi's IntelliCell technology, so these power packs should always be operating at maximum efficiency. Charge time is about 90 minutes. To give you some idea of performance, Ryobi's 4.0Ah battery kept the R18 hybrid area light illuminated for 210 minutes. This new pack increased the run time to 255 minutes. I've yet to compare drilling or screwdriving performance, but will do so when I test Ryobi's impressive new 18V brushless combi drill. **PD**

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## A changing landscape

In this instalment of his working years, **Stan Clark** recalls the abundance of elm trees where he grew up and how Dutch elm disease went on to affect the whole area

A few years back I watched with great interest the TV show *The Trees That Made Britain*; it was to bring back many happy memories from the late 1940s, at a time before the Dutch elm disease took a hold and wreaked destruction in the Northamptonshire area where I live. In my early days, I started climbing tall elm trees just for the fun of it. To go to the top of the very tall ones in a strong wind, when everything was swaying about, was very exciting and exhilarating; to hear the noise of the wind in the boughs, along with the calls of the rooks and crows that filled the air, was an experience I was privileged to have.

Around my way, Dutch elm disease not only altered the landscape, but was to create terrible problems for every undertaker throughout the land, as at the time coffins were made almost exclusively of elm boards.

### Ladders & coffins

From a very young age I have always taken an interest in trees and timber, and when I left school in 1954 I started work at John Ward & Son, training to become a ladder maker, as I've outlined

in previous issues, along with making coffins for the undertaking side of the business; the standing joke for us at the workshop was ladders for going up and coffins for going down.

Nearly all the coffins that I helped to make were of elm; the odd wealthy person might have ordered an oak coffin, but that was very rare. The other wood we used especially for cremations was poplar, as it was a very quick burning timber that gave off little smoke. We had to join these coffins together with wooden pegs, for at the time no nails were permitted in the furnaces, as they tended to jam up the bone-crushing machinery.

While making all these elm coffins by the hundreds, it never occurred to any one of us that this type of timber would ever be in short supply, for every hedgerow all over the county was full of them, row upon row. Most of the ones we were to cut down came from hedgerows that were planted during the early years of the Enclosure Act, which was being enforced from about 1760. When we counted the rings we found them to be around 160 to 200 years of age, and from 2.5 and 3ft thick in diameter, about 6ft up from the stump.

### The secrets of growth rings

In some of the local parkland, where trees of all kinds had been growing long before the Enclosure Act came to be, they were of a tremendous size, sometimes over 8-9ft in diameter just up off the stump of the tree. Some of the boughs from them were thicker than the trunks of the elms we cut down in the hedgerows, and by counting the growth rings we discovered them to be double the age or more.

The very old boys, who had been in the timber trade all their lives, would point out to me the good growing years these trees had experienced over time, by explaining the different sizes of rings that were left from each growing season. Dark rings were left every 11-22 years apart, as every 11th year, due to the sun's activity or sun spots, dark rings would be left, and every other 11th year, the sun's activity would be stronger or weaker, depending on the cycle you were counting from.

One old wheelwright, who I worked alongside in the workshop, used elm for wagon wheel hubs – as the wood did not split readily – as well as clefted oak for the spokes due to the strength of the timber, and ash for the fellows (the segments that made up the wheel), as they took the shock and pounding from the road surface. **WW**

### NEXT MONTH

Join us next month for more stories from Stan and his colleagues in the ladder making shop.

And if any other readers have a story to tell, we'd be glad to listen. Just write to [editor.ww@mytimemedia.com](mailto:editor.ww@mytimemedia.com) and we'll see how we get on



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