Issue 324 • November 2017

Good woodworking

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WIN! 1 OF 20 IRWIN JACK 880 PLUS UNIVERSAL COATED HANDSAWS – SEE INSIDE FOR DETAILS

MEET THE MODERN MAKER

Alexander White on how he keeps pushing the boundaries of furniture design

5-STAR INNOVATIVE NEW KIT: The Ryobi R18TR cordless trim router

BRAND-NEW BULLAR

JOHN BULLAR TAKES A LOOK AT HIS FAVOURITE WORKSHOP MACHINE – **THE BANDSAW**

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- Trend T5 router – we revisit a classic
- Sharpening debunked with Tony 'Bodger' Scott
- Bastian Bonhoeffer's unique warrior knife block design

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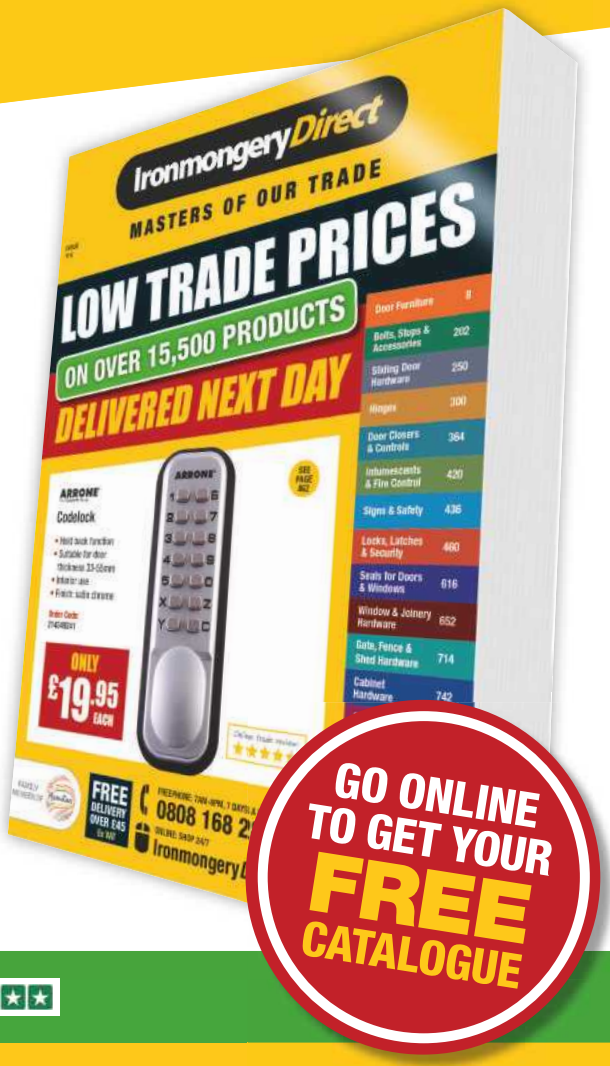

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Welcome

'Some of my favourite things from this issue'

Welcome to our November issue – I'm not sure where this year has gone but it's certainly been a great one, and we still have our Timber Special to come next month as well as our December issue, which promises a number of Christmas treats!

It's been a busy month for me so far, what with a fair few client visits around the country as well as attending some woodworking shows, which is always welcome as it's a bit of a treat to get out of the office and meet new people. As I write this, the Bentley Woodfair is less than a week away (fingers crossed for some autumn sun) and the much-anticipated D&M Tool Show is also just around the corner as we enter October. I love to get out and about and discover what's new – whether it be an emerging maker to profile or an exciting new tool to feature or test. I also love meeting and talking to you, the readers, and finding out what you like about the magazine, or perhaps don't like. It's all part of the journey, so do come and say hello if you're planning on attending the upcoming North of England Woodworking & Power Tool Show in Harrogate from 17–19 November, which is where I'll be next.

A blast from the past

It was also great to reconnect with old friends this month, namely one of my mum's old school friends who lives locally and is also a professional carpenter. I remember some of the things he made for us when I was younger, including a stunning veneered backgammon board, a wonderful coffee table that I loved to touch the surface of, and we also made some projects together, such as a biscuit-jointed church for a school project, and a box, which, to my surprise, he says he still has nearly 20 years on. It was so lovely to see him after all these years and to find out what projects he's been working on both now and historically. As I child, I always loved hearing about how he'd worked on some of the carpentry at Disneyland Paris, but more recently, he told me how he'd had the pleasure of doing some restoration work on the Brighton Pavilion – an exotic palace in the city centre with a colourful history, built as a seaside pleasure palace for King George IV – which saw him working on some of the sash windows in the Pavilion's gate house.

I also asked about his workshop, which he told me is in dire need of a clear out and re-jig! What with winter knocking on the door, I pointed out that now would be the perfect time to get things sorted. Scrolling through photos on his phone, I was greeted with a whole host of wooden wonders that he'd photographed over the years, including a hand-carved wooden sofa, as well as photos of old tools that he couldn't help but welcome into his vast collection. I'm currently trying to convince him to share his tales of how carpentry has changed as he's now entering retirement, so hopefully he will be obliging.

Write in & win

Don't forget that as well as saying hello at woodworking shows and events, it's also great to receive your emails, letters and photos, as well as your opinion on the magazine or a particular article/feature in general. It's wonderful to see what you've been making, but equally interesting to hear your views, so do keep in touch. We've also got a fantastic new star letter prize up for grabs – the Trend SET/SS31X1/4TC ¼in 30-piece router cutter set, worth over £100 – so why not share your story and be in with a chance of winning this great workshop addition? I look forward to hearing from you, but in the meantime, we hope you like our November issue as much as we do!

Enjoy! *Tegan*

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THE BEAUTY OF BANDSAWS

As John Bullar shows in the first of a new series, for a small workshop where most of the work is carried out using hand tools, a bandsaw may be the only machine that needs buying

WIN!

1 of 20 IRWIN Jack 880 Plus Universal Coated Handsaws. Number one for speed, ease and quality of cut, see page 48 to find out how you can be in with a chance of getting your hands on one!

Good woodworking

November 324

• TOOLS • PROJECTS • TECHNIQUES • ADVICE

PROJECTS

TECHNICAL

PEOPLE & PLACES

TESTS

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Scottish Woodworking Show @ Brodies Timber

Growing year-on year and taking place from 20–21 October at their premises in Perthshire, Scotland, this event from Brodies Timber brings together everyone in the world of woodwork. The organisers are delighted to announce the line-up for this year's Woodworking Show, which features demonstrators across a wide range of woodworking disciplines.

Vintage Hand Tools
Tony Murland returns for the second successive year with a hugely popular stand in vintage and second-hand tools. Bag a real bargain or add to your collection from this eclectic range of tools.

Lathe demonstrations
Brodies' own team will be demonstrating the craft of woodturning, which they apply to their bespoke joinery work.

Relief woodcarving
Richard Douglas has been letter carving for the company in waney-edge oak boards and will be demonstrating his skills at the show. These boards are to become bed heads, commissioned by The Fife Arms Hotel in Braemar, for a series of work by Brodies Timber.

3D carving
Ron Dickens will be carving beautiful birds and demonstrating just what a keen eye and skill for detail he has. You can expect to see stunning work from this ever-popular carver. Sign up for one of his carving classes via the website.

Lonely Mountain Skis – Jamie Kunka
Going from strength to strength, Jamie is a rising star in the world of ski making and innovation. Featuring on the BBC's *Country File* earlier this year, don't miss this fascinating insight into steam-bending techniques and laminating technology. Based locally in Birnam, Brodies are delighted to have him back at this year's woodworking show, and look out for a special feature on Jamie in a few issues' time.

Record Power Tools & Machinery
Brodies are always delighted to welcome Craig from Record Power to the shop, as not only does he possess a wealth of knowledge on woodworking machinery and tools, but he also brings great show day deals too! Grab yourself a great deal with Record Power.

Bespoke cabinetmaking
The company's own team will be demonstrating some of the skills they use every day while producing custom-built products. From dovetails to fox wedges, joints and build techniques, they will be on hand to observe and discuss techniques with visitors.

Galgael – Robert Louth
This year Brodies are delighted to welcome Robert and his team back to the show where they will demonstrate some traditional woodworking techniques.

Instrument making – Chattan Luthiery
Euan brings his amazing arrangement of instruments and musicians to the show, to demonstrate the intricacy of woodwork and how it affects the quality of his instruments.

You can also expect to see trade stands from the following: Chestnut Finishes, Treatex Hardwax Oils, Lie-Nielsen Heirloom Hand Tools, Veritas Tools, plus carving tools, saws, abrasives, finishes, and much more! Join the team for a great day of woodworking demonstrations and deals; to find out more, see **www.brodiestimber.co.uk**.

Bosch GHO 12 V-20 Professional Compact Planer – a unique new experience in woodwork tool handling

This new compact planer, brand-new from Bosch, is uniquely small and light in appearance, being similar in size to equivalent hand tools. Featuring an excellent ergonomic compact design, it is easy to guide with one hand and also benefits from long life and runtime, thanks to brushless motor technology.

Optimised ergonomics allow for one-handed use, and with a small grip circumference, the compact planer features ideal hand position and a deep balance point. There is also a smooth and easy planing depth adjustment, which is optimised for depths of up to 1mm.

The GHO 12 V-20 benefits from a high-powered, highly energy-efficient brushless EC motor, as well as high-quality, durable components, including a machined planer housing made from a single aluminium block. Also included is switchable dust extraction to the left or right, depending on planing direction, and it can also be used with a dust bag. Additional features include integral inlay to hold a second planing knife; perfect fit with the Bosch accessories range (56mm knife); and the planer is also fully compatible with the comprehensive Bosch 12V Li-ion power tool range.

The new GHO 12 V-20 Professional Compact Planer is now available from specialist retailers with an RRP starting from £226.80; to find out more, see **www.bosch-pt.com**.

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Fine furniture school creates craftsmanship Guild

The Fine Furniture Guild has recently been set up by the Chippendale International School of Furniture, near Edinburgh.

The Guild is a not-for-profit business, and Professor Richard Demarco OBE has agreed to be its first honorary chairman. The purpose of the Guild is to create an online platform for customers of fine furniture – putting them directly in contact with a designer near to them. It also offers those customers the guarantee that the furniture designer and woodworker is a qualified craftsman or woman, who has successfully completed the exacting Chippendale course.

"This is a unique venture in the woodworking schools sector, and represents a very real commitment by the School to former students both here and internationally," said principal Anselm Fraser.

The Chippendale International School of Furniture is over 30-years-old and has achieved an international reputation for the quality of its teaching, endorsed earlier this year by an Education Scotland report.

Professor Richard Demarco OBE

Professor Demarco is one of the UK's leading arts commentators, who is himself an artist and one of the most influential advocates for contemporary art. He is also a staunch supporter of the Chippendale International School of Furniture and each year awards a prize in his name to an outstanding student.

"The purpose of the not-for-profit Chippendale school is to teach all aspects of woodworking. However, we have long recognised that, in a competitive market, even the most gifted of alumni can find it hard to secure commission sales," continued Anselm.

In recent years, the School has introduced additional commercial modules into the curriculum – including business planning and marketing, website design and public relations. The School has also created incubation space for alumni to set up in business in East Lothian, while still having access to the School's specialist equipment and teaching staff. Currently, some 10 alumni work from the Chippendale campus.

"We recognise that some students are better than others in marketing their businesses and connecting with a buying audience. The purpose of the Guild is to provide alumni with an additional resource to engage with customers local to them."

A unique project

Nothing quite like the Guild has been created before, either specifically in furniture schools or, more generally, in other craftsmanship institutions – for example, jewellery making or furnishings design.

This largely reflects the more focused ethos of other schools – teaching only furniture making skills, without transitional or longer-term business support. The Chippendale School's ethos has always had a longer-term focus on student welfare and success, and this project reflects that.

The School wants its students to be successful, and to play a role in securing Scotland's and the UK's place as a centre of furniture design excellence. The Guild is intended to help underline both of those objectives.

"We believe the Guild has lessons for other niche educational institutions. It will showcase Scottish craftsmanship to international audiences and help support graduating furniture designers as they transition into employment or self-employment. "We are also immensely grateful to East Lothian Council for grant funding to help us develop the business plan and help take us to where we are now," he finishes.

To find out more about the School, the Guild, and the range of courses on offer, see **www.chippendaleschool.com**.

Trainees kick-start new career with Morris Joinery

Following its summer work experience programme, Shrewsbury-based Morris Joinery has employed two new trainees at its Bicton workshop. Earlier in the year the company offered one week's work experience to five prospective joiners from Shrewsbury College who would be given the opportunity to secure employment with the company at the end of the summer. Three students were then invited back for an additional week and two have now been taken on.

Joe Hudson (19) and Brice Courtney (18), who have completed their level three qualifications, were selected for the traineeships based on their quality hand skills, passion for the job and commitment to continue learning. Both will now complete their NVQs in the workshop supported by on-the-job training.

Steve Granda, Joinery Manager, said: "After the rigorous selection process this summer it was clear to us that Joe and Brice both had the right attitude and aptitude to progress a career at Morris Joinery. They are working closely with their mentors and acquiring as much experience as possible from the other team members to enhance their skills and knowledge. Following the success of this process we may look to take on another apprentice in this way next year, and continue to nurture the next generation of bespoke bench joiners."

Morris Joinery is committed to training the next generation and finding the best talent to continue its tradition of providing bespoke, hand-crafted joinery while mixing traditional and contemporary methods; to find out more about the company and their thriving work experience programme, see **www.morris-joinery.co.uk**.

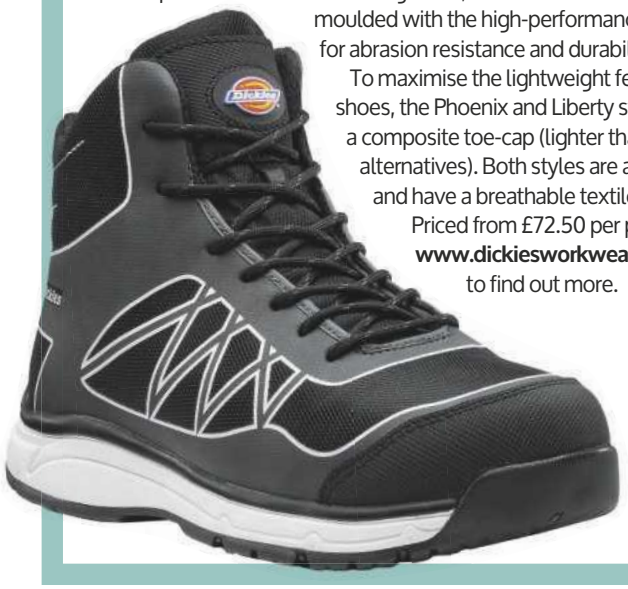
OPPOSITE: New to Morris Joinery, Joe Hudson and Brice Courtney

Dickies Workwear brings flexibility to the fore with new footwear launches

Dickies Workwear is launching two new footwear lines offering greater flexibility than ever before, using its latest innovative outsole designs. The newest additions to the company's extensive footwear range, the Phoenix and Liberty styles, are both available as a trainer or boot and feature Dickies brand-new DTc outsole. Designed by footwear experts to achieve the highest grip performance on smoother surfaces, the DTc sole has ergonomic flex lines and geometric tread patterns for maximum ground contact – even in wet conditions.

Ideal for tradesmen working in an indoor environment, these styles are particularly suitable for anyone who is often required to kneel or bend, while offering a high level of comfort for those who are on their feet all day.

The midsole is made from EVA (ethyl vinyl acetate), which is especially lightweight and flexible. This material provides cushioning and rebound, which helps absorb shock from the ground, whilst the outer sole is moulded with the high-performance rubber for abrasion resistance and durability.



To maximise the lightweight feel of the shoes, the Phoenix and Liberty styles have a composite toe-cap (lighter than steel alternatives). Both styles are anti-static and have a breathable textile lining. Priced from £72.50 per pair, see **www.dickiesworkwear.com** to find out more.

'Harrogate' 2017 show set to be the best yet

This year's North of England Woodworking & Power Tool show, or the 'Harrogate' show as it is affectionately known, is set to be the biggest and best yet. With 40 top demonstrators on show throughout each day and over 100 companies exhibiting, this year's event promises to be a great day out. Be sure to put a date in your diaries for 17–19 November and for more info or to purchase advance tickets, visit the show website **www.skpromotions.co.uk** or call **01474 536 535**.

COURSE DIARY

It may be getting colder, but there's no shortage of woodworking courses!

NOVEMBER
1 Sharpening hand tools with Tormek*
1–2 Wood machining
1–2 & **9–10*** Woodturning for beginners
2–3 Beehive making
3*, **6–7** & **28–29*** Routing for beginners
6–10 Woodturning
7–10 Engineering mill and lathe – intro
9 Hand plane tuning
10 Sharpening hand tools
14 Introduction to Leigh jigs*
16 Turning peppermills*
21 Turning a pestle & mortar*
23–24 Turning Christmas nutcrackers
27 Pyrography
28 Making Christmas gifts
28–29 Small engineering lathe – intro

* Course held in Sittingbourne, Kent
Axminster Tools & Machinery
Unit 10 Weycroft Avenue
Axminster, Devon EX13 5PH
Tel: 08009 751 905
Web: www.axminster.co.uk

6–10 Cabinetmaking techniques
25–26 Basic jointing weekend
27–1 Router skills

Chris Tribe, The Cornmill, Railway Road
Ilkley, West Yorkshire LS29 8HT
Tel: 01943 602 836
Web: www.christribefurniturecourses.com

11–12 Wood machining
30–3 French polishing & modern hand finishes

John Lloyd Fine Furniture, Bankside Farm
Ditchling Common, Burgess Hill
East Sussex RH15 0SJ
Tel: 01444 480 388
Web: www.johnlloydfinefurniture.co.uk

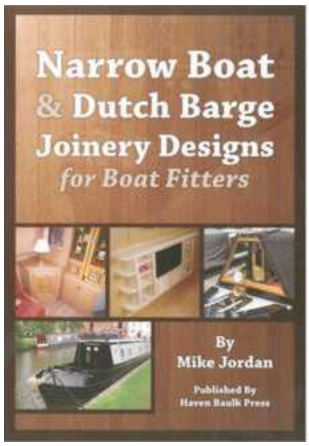
12 Intro to woodcarving
15 Intro to sharpening
26 Intro to spoon carving

The Goodlife Centre
49/55 Great Guildford Street
London SE1 0ES
Tel: 0207 760 7613
Web: www.thegoodlifecentre.co.uk

7–28 Introduction to green woodwork
25–2 Make a Windsor-style stool

Ben Willis Woodcraft, Stoney Lane
Studios, Stoney Lane, Crystal Palace
London SE19 3BD
Tel: 07976 287 797
Web: www.benwillis-woodcraft.co.uk

Narrow Boat & Dutch Barge Joinery Designs for Boat Fitters



Mike Jordan has been making woodwork for amateur and professional boat fitters for more than 35 years, with some of his work quietly featuring in several award-winning boats.

He has been happy to make the 'tricky bits' for many a boat building project, and his new book *Narrow Boat & Dutch Barge Joinery Designs for Boat Fitters* (ISBN 978-0-9576824-0-5) contains many of the designs used. Sketches and colour photographs of the making process are included, together with material sizes and cutting lists where appropriate.

For those who lack the equipment or the time to complete the designs, the book ensures that your local woodworker can make the item you need without spending expensive time on design work. The book is available at chandlers, boatyards, or from online retailers. Priced at £18.50 (post free), email Mike for further info: **mike.jordan31@btinternet.com**.

Festool has a successful roadshow thanks to pedal power

Festool is on its way to raising more than £25,000 for the British Lung Foundation (BLF), helping to promote lung health to UK tradespeople. The company launched a Cycle Challenge earlier this year as part of its 'Breathe Easy with Festool Dust Extraction' campaign, featuring Wattbikes on its impressive UK roadshow as part of the European tour. Three lucky participants won £500 of Festool prizes for biking the fastest mile, three miles and five miles.

From left to right: Festool's Allan Steenkamp and Paul Kirby

As part of its fundraising initiatives, Festool has sold more than 100 top quality cycling tops through its eBay page – see **http://bit.ly/Festooltop** – with the money made from the limited edition cycle shirts and the roadshow going towards research into life threatening lung diseases, as well as help provided by the BLF for those living with conditions such as chronic obstructive pulmonary disease (COPD), idiopathic pulmonary fibrosis (IPF), mesothelioma, asthma and lung cancer.

The truck tour began in Portsmouth and called at Twickenham, Newmarket, Leyton, St Albans, High Wycombe, Mansfield, Derby, Rotherham, Glasgow, Dunfermline, Blackburn, Belfast and Dublin. Photos from the event can be viewed here: **www.festool.co.uk/campaigns/roadshow**.

Ideal for mobile use and assembly, the Festool range of safe and robust dust extractors are lightweight and compact, ideal to transport from job to job, again saving time for the tradesperson. Festool offers a range of dust extractors which are suitable for any job from low to high class dust, including general work to anything that is a known carcinogen, including lead, cadmium and asbestos. To find the right dust extractor for you, visit **www.festool.co.uk** for more info.

New Trend Snappy 15-piece Screwdriver Bit Set

Trend has launched a new 15-piece drill bit set, which will add to their popular Trend Snappy Quick Release System range. The set has been designed with ease of use in mind and features unique colour-coded rings that allow quick and easy selection of the different bit types as well as a magnetic quick-release chuck for instant bit setup and swapping, all of which is neatly stored in a durable carry case with belt clip.

The set contains the following: 2 × Pozi screwdriver bits; 2 × Philips screwdriver bits; 3 × Hex screwdriver bits; 2 × slotted screwdriver bits; 5 × Torx screwdriver bits; 1 × magnetic quick-release chuck and 1 × storage case and belt clip. The SNAP/SB5/SET is priced at £11.94 inc VAT; see **www.trend-uk.com** for further details.

NEWS IN BRIEF

Woodworking & Power Tool Show will be taking place from 27–28 October at Clyst St Mary, Exeter. You can learn how to start and/or improve your woodturning, woodcarving and DIY skills, as well as receiving top tips on getting the very best from your woodworking machinery and power tools. Free demonstrations and skill clinics will be taking place, as well as masterclasses from Phil Irons, Robert O'Conner, Joe Laird and Paul Jones, each of which is priced at £15. To find out more, see **www.wptwest.co.uk**

Peter Sefton will once again be an official demonstrator at the North of England Woodworking & Power Tool show, which takes place from 17–19 November. He will be doing live tutorials and demonstrating fine woodworking and furniture making hand skills at his bench throughout the three days; to find out more, see **www.skpromotions.co.uk**

The Irish Woodturners' Guild National Seminar 2017 will take place on Saturday 14 and Sunday 15 October at the Glenroyal Hotel Maynooth, in north County Kildare, Ireland. Over the two-day event, 40 demonstrations will take place offering something for woodturners of all skill levels. The Seminar competition features 10 categories and is the premier showcase of the best of woodturning that Ireland has to offer; to find out more, see **www.iwg.ie**

Northumbrian Woodturners Association will be holding their annual auction of tools and equipment on 8 December at Briardale Community Centre , Briardale Road, Blyth NE24 5AN. Expect free entry and parking, plus a good selection of both new and used lots on offer Catalogue available mid November from **stan.oakey@icloud.com**

New DEOS from Mirka set to shape the future of sanding

The new Direct Electric Orbital Sander (DEOS) with its revolutionary design is being launched by Mirka. The new DEOS allows the user to get closer to the surface, easily accessing hard-to-reach areas and delivers a flawless smooth finish quicker than other sanders. The DEOS is available in two sizes: DEOS 383 CV 70 x198 and DEOS 353 CV 81x 133, making it suitable for use across multiple applications, including stripping back old paint and lacquer, for example.

The DEOS is the only electric orbital sander on the market that has been optimised for net abrasives by incorporating more than 45 holes in the pad. When the tool is combined with Mirka's net and paper abrasives, it offers an excellent scratch pattern and a dust-free work environment.

Its innovative features incorporate a powerful brushless motor, which provides a high power to weight ratio when in use. The design team has been able to reduce the weight, size and height of the sander, providing customers with a compact, lightweight and easy to use tool.

In addition, it has an integrated vibration sensor with Bluetooth technology that can be connected to a mobile device with the new myMirka app to give guidance on vibration levels; see **www.mirka.com/uk** for more info. Please note that Mirka offers a two-year warranty as standard, with an additional year given subject to the tool being registered within 30 days of purchase on the Mirka website.

New NOVA 1624 II lathe

The NOVA 1624 II is a capable and well constructed lathe, built to a high standard. All the major castings are thick section cast-iron, resulting in a lathe with a solid feel and trouble-free, low vibration running.

The 1,120W (1.5hp) motor provides plenty of power for large projects. The pulleys offer an excellent choice of eight speeds; belt changing is easy. The low speed (178rpm) gives plenty of scope for the large diameter turnings, while the high speed (3,000rpm) is perfect for pens or lace bobbins. This lathe is great for turning wooden bowls, pens, spindles, small table parts and anything you can turn in the range of 400mm diameter × 610mm long. The 360° swivelling head allows you to still turn larger bowls comfortably in a reasonably compact space.

The control switch on the headstock has a safety off button and reversing switch. Cam action levers make adjustments fast and easy; their rubber grips provide good ergonomics. The NOVA 1624 II comes with a strong steel stand featuring adjustable levelling feet. It includes a 2MT drive centre, 2MT live centre, 80mm faceplate, 300mm toolrest, fastenings and manual. Priced at £1,112.47, see **www.axminster.co.uk** for more info.

FREE READER ADS

Send your adverts to: tegan.foley@mytimemedia.com

Multico-Pro-Mex TWL 1000 woodturning lathe – in good condition; £250
07716 994 616 (Derby)

Woodturning workshop contents for sale – including lathes, bandsaw, pillar drill and lots of hand tools and wood for turning
01628 628 147 (Berkshire)

APTC M950 lathe – six-speed, plus many extras including two chucks and revolving centres – in very good condition; call for details; buyer collects – £499
01284 705 656 (Bury St Edmunds)

Tormek T4 with woodturner's accessory kit, stone grader, diamond stone turning wheel, knife jig, square edge jig, turning tool setter and honing compound; £450 – buyer collects
01233 638 039 (Kent)

Metabo BAS 317 precision bandsaw – in good condition; £100
07716 994 616 (Derby)

Axminster CT-150 planer/jointer; £250; CT-330 thicknesser; £250; Multico Supershop 5-in-1; £300; shop vac; £20
01604 870 380 (Northants)

Scheppach TS 2010 table saw with side extension, sliding table, outfeed table and stand – in good condition; £350
07976 692 359 (Twickenham)

For sale – various *Woodworker* magazines from 1946–2013. All are in pristine condition. A wonderful collector's item – selling due to bereavement; collection only
07847 394 507 (Derbyshire)

Arundel K450 woodturning lathe; 30in c/c; no bench but in good working order; £85 ONO
07535 574 528 (N. Powys)

Carving chisels by Addis, Kirschen and Cannon – 39 in box; all good to go; £200
07904 433 520 (Newark)

Record RPMS-R router centre with AEG 2050 E 1/2in router and RSDE dust extractor; £275
01656 654 302 (South Wales)

150mm bench-top planer/ thicknesser; £150 – buyer collects
01233 638 039 (Kent)

Jet JSS16 scrollsaw; brand-new; never used; bought in error; £40 – buyer collects
01432 270 757 (Hereford)

Sharp thinking

Give your drill bit collection a new lease of life with this handy and effective product from Multi-Sharp

Drill bits are probably the tools that get the least amount of care in the workshop, and even more so out on site, where items are tossed in the toolbox or often discarded when blunt. I've acquired a stash of masonry bits over the years, many of which are hopelessly ineffective due to lack of a suitable sharpening device. Thankfully there's a solution, though.

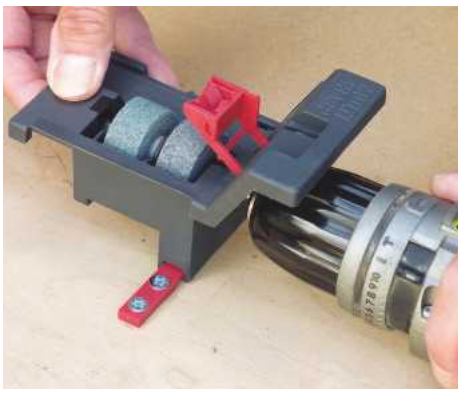
Multi-Sharp have been around for more than 30 years, with several products aimed mainly at DIYers and gardeners. Their Drill Bit Sharpener doesn't take up much workshop space and will restore those blunt tips fairly accurately if used carefully. Powered by an electric drill, it consists of a pair of grinding wheels that rotate inside a sturdy plastic jig. Bits are moved across the rotating wheels at a set angle, regrinding their tips at the correct angle.

Sliding carriage

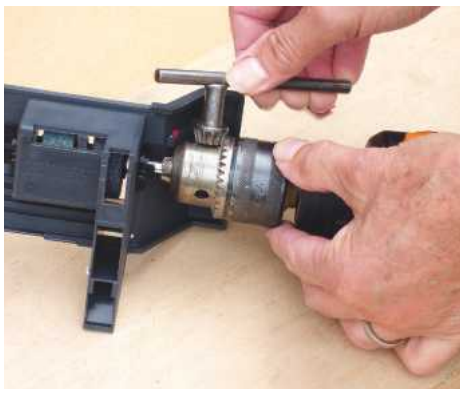
First you need to secure the jig to a board or bench top with a locating foot. This is screwed down, enabling the jig to slide into place. You'll need a mains-powered drill to get the most from the Multi-Sharp, though a cordless tool can be used. Battery power is not ideal as maximum speed is lower, leading to faster wheel wear. A cramp over the trigger will also be necessary, as cordless drills rarely have lock-on buttons. I actually tried a cordless drill with the jig to begin with, before switching to a 230V tool.

A spindle running through the jig is secured in the chuck, then you're almost ready for action. A grey aluminium oxide wheel is used for HSS bits, while masonry (TCT) bits are reground on the adjacent green silicon carbide wheel. Both are 15mm wide, with a diameter of about 35mm.

A sliding carriage is clipped over the fixed grinding bed and this is used to guide the drill bit. The bit is inserted into a vertical turret, which presents the tip at 118° to the wheel. There's a



The locating foot is screwed down, enabling the jig to slide into place



A spindle running through the jig is secured in the chuck, then you're almost ready for action

Both the grey aluminium oxide wheel and the green silicon carbide wheel are 15mm wide, with a diameter of about 35mm

The bit is inserted into a vertical turret, which presents the tip at 118° to the wheel

Left and right options for the carriage align the bit with the appropriate wheel

choice of either HSS or masonry bit positions for the turret and these determine which wheel is used. Left and right options for the carriage align the bit with the appropriate wheel. Once the bit is locked at the correct depth in the turret, grinding can be begin. Two collets are provided for the turret, meaning bits from 3mm up to a maximum 13mm diameter can be accommodated.

Masonry bits

Activate the drill and you can then move the bit across the revolving wheel. With a HSS bit three or four strokes are recommended on one edge of the tip, before rotating the turret through 180° to grind the opposite edge.

The masonry bit option is clever, adding cam action to the turret and enabling you to change the geometry of the tip. As a result you can regrind standard, hammer action or SDS masonry bits.

The Multi-Sharp is actually quite a sophisticated little jig, though I noticed some slight flexing when moving the carriage across the green wheel with masonry bits. This was not detected when sharpening HSS bits, however. With care you can get some pretty good results, though.

A simpler guide is used for grinding brad point (lip and spur) bits. You can regrind flatbits, too, though results are less accurate as there's no guide as such. It's also possible to regrind slotted screwdriver tips, cold chisels and so on with the green wheel. These are held freehand in a similar way to using a bench grinder.

Conclusion

Thankfully, this gadget comes with comprehensive instructions. It's important to follow these (and retain them!) to achieve balanced tips, as drill bits are often used for precision work. All relevant settings on the jig are clearly marked and nothing is ambiguous.

The Multi-Sharp is a really handy sharpening device that should give your drill bit collection a new lease of life. Replacement grinding wheels with bearings are available at about £3 each – see reader offer details in the sidebar above. **GW**

READER OFFER

Multi-Sharp is also offering a special reader offer on this product, which usually retails for £16.95 (plus £4 P&P) via their website – **www.multi-sharp.com**. The offer allows you to save 19% on this price – £14 – and also gives a reduced posting and packing rate of £2.95.

As an additional extra, there is also an offer on the replacement grinding wheels for the Drill Bit Sharpener, when ordered with the sharpener. Save £1 on aluminium oxide and silicon carbide wheels, which are priced at only £2.95 each as opposed to the £3.95 stated on the website. When ordering, please email **admin@multi-sharp.com** and quote the following code: '**Good Woodworking Offer G1**'. Upon ordering, please quote your order (i.e. 1 × MS2002 aluminium oxide replacement wheel), along with your name, delivery address and daytime phone number. On receipt, Multi-Sharp will call you to confirm your order, and take payment. Please note that this offer is not to be used in conjunction with any other Multi-Sharp offer

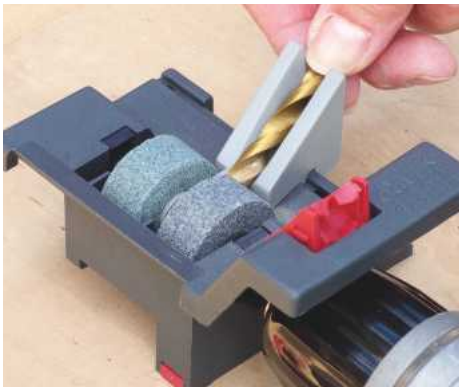
Specification:

- **Accurately regrinds the following bits:** HSS; centre-point (brad-point) wood; flat wood; masonry including SDS-Plus; 3-13mm diameter
- **Typical price:** £16.95 (plus £4 P&P); reader offer price – £14 (plus £2.95 P&P)
- **Web:** www.multi-sharp.com

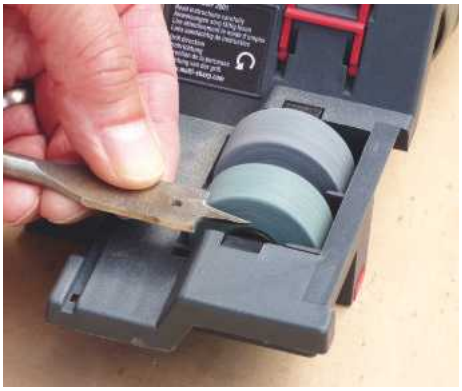
THE GW VERDICT

- **PROS:** Revive most old drill bits, including masonry; replacement grinding wheels inexpensive
- **CONS:** Mains drill preferable to cordless tool; don't lose the instructions!
- **RATING:** 4 out of 5

You can regrind standard, hammer action or SDS masonry bits



A simpler guide is used for grinding brad point (lip and spur) bits



You can regrind flatbits, too, though results are less accurate as there's no guide as such

Cordless routing at last!

This new cordless offering from Ryobi is compact and allows for fine depth adjustment. Cabinetmakers, shopfitters or musical instrument makers will no doubt find an array of tasks for this router

Occasionally a new power tool is anticipated with real excitement. I first saw a prototype of Ryobi's new trim router almost 18 months ago. Although a simpler version has been around for several years in Australia, it's not actually the world's first cordless router. That accolade belongs to Porter Cable. Long-time *Good Wood* readers may remember we tested their machine many years ago, though it then disappeared without trace. This was a 19.2V machine and I seem to remember you couldn't actually do much routing before the Ni-Cd batteries expired. More recently and on a smaller cordless scale there's Dremel, if you add the superb Veritas plunge router base into the equation.

Ryobi have greatly improved their original trim router by redesigning the sliding base, improving ventilation, adding soft-grip rubber and including a substantial guide fence, which is a real bonus. What was once a fairly basic power tool has suddenly grown up and will be of much greater interest to woodworkers generally. Although it's not a plunge router, refinements help give the user greater control with this new compact model.

Cordless cutting

As part of Ryobi's One Plus system, you'll need to add an 18V battery and charger to get started as the router is sold bare. If you're starting from scratch, I'd suggest either a couple of lower capacity batteries (2.5Ah) or one 4.0Ah or 5.0Ah pack. The obvious disadvantage of cordless routing is running out of power halfway along an edge, for example. At least you have a good idea of how much juice is left with Ryobi's clear LED battery display.

The tool will sit flat (upside down) on the bench whether a battery is attached or not, making cutter change pretty convenient. In fact, there's a tendency to forget the battery is fitted, so you need to get into the habit of removing this when changing a bit. Fortunately, the on/off slider switch is nicely recessed, so there's little chance of accidental start-up. There's no variable-speed here, rarely necessary on a 1/4in router. Instead, speed is a constant 29,000rpm.

A spring-loaded spindle lock is provided, which did feel a bit wobbly – a stronger spring would probably make this stiffer. Access to the collet nut when fitting a cutter is easy enough, with a steel wrench included. Two collets are provided (1/4in and 6mm), plus a 6mm straight bit.

Fine adjustment

A 6mm-thick, clear polycarbonate baseplate is fitted to the bottom of the tool with four screws, giving you a good view of the cutter. With a 35mm hole, this will accommodate most large diameter 1/4in cutters. It's square, so easy enough to run against a fixed guide or jig. The baseplate is screwed to an alloy base assembly that slides along the plastic motor housing, with up to 42mm of travel. It's possible to remove the entire base, though this should be rarely necessary.

Depth setting is clever, with coarse and fine adjustment combined in a two-way lever. Open the large locking lever for fine adjustment via a threaded steel rod, carried out with a knurled thumbwheel at the top of the tool. A full rotation

If you're starting from scratch, I'd suggest either a couple of lower capacity batteries (2.5Ah) or one 4.0Ah or 5.0Ah pack

The on/off slider switch is nicely recessed, so there's little chance of accidental start-up

A spring-loaded spindle lock is provided, which did feel a bit wobbly – a stronger spring on the spindle lock would be an improvement

Two collets are provided (1/4in and 6mm), plus a 6mm straight bit

With a 35mm hole, the clear polycarbonate baseplate will accommodate most large diameter 1/4in cutters

Depth setting is clever, with coarse and fine adjustment combined in a two-way lever

Open the large locking lever for fine adjustment via a threaded steel rod

Depressing the spring-loaded secondary lever underneath disengages the rod

The alloy guide fence may be small, but it's sturdy and has holes for attaching a hardwood facing

equals about 1.6mm of depth travel and is clearly marked in increments of 0.2mm. For rapid adjustment, depressing the spring-loaded secondary lever underneath disengages the rod, enabling you to set the depth approximately. Flip the lever shut again and everything is locked nicely. A clear metric depth scale on the housing is revealed as you slide the base downwards.

Solid fence

What increases the versatility of this tool is the alloy guide fence. It may be small but it's sturdy and has holes for attaching a hardwood facing. It's fitted to the base with a pair of 7mm threaded steel rods which are slow to insert, so could be irritating should you need to switch between fence work and freehand routing (with bearing-guided bit) frequently. Plastic thumbscrews lock the fence to the rods, giving a maximum capacity of 105mm. A fine adjuster here would be the icing on the cake... Like most Ryobi tools there's no storage case provided.

Conclusion

Although the Ryobi R18TR is not rated as a pro tool, I could see many workshops keeping this set up with the same cutter. Cabinetmakers, shopfitters or musical instrument makers, for example, will no doubt find an array of tasks for this router. The R18TR is a brilliant little tool for inlay work, adding chamfers or smaller edge profiles and it offers plenty of potential. To give some idea of battery performance, I managed to rout 14m with a bearing-guided ogee bit in softwood using a 4.0Ah power pack, which is pretty good going.

With the added benefits of greater capacity batteries and innovative technology, I reckon Ryobi will have a few competitors scratching their heads. Bosch have just launched their pro cordless router, while there are rumours Makita has a new model up its sleeve. These are likely to be more expensive products, but this all adds up to great news for the growing number of cordless power tool fans! **GW**

Specification:

- **Collet capacity:** 6mm & 6.35mm
- **No load speed:** 29,000rpm
- **Weight (without battery):** 1.3kg
- **Voltage:** 18V
- **Included components:** 6mm collet; 6.35mm collet; straight cutter; wrench; side-fence

- **Typical price:** £99.99 (bare)
- **Web:** www.ryobitools.eu

THE GW VERDICT

- **PROS:**
  Cordless routing at last! Compact. Fine depth adjustment
- **CONS:**
  Fence rods slow to fit; no dust outlet
- **RATING:** 5 out of 5

The alloy guide fence is fitted to the base with a pair of 7mm threaded steel rods

The Ryobi is a brilliant little tool for inlay work, adding chamfers or smaller edge profiles

Testing the Ryobi with a (bearing-guided) roundover bit. Fitted with a 4.0Ah battery, an ogee bit cut 14m of softwood

A trio of brilliant blades

This range of jigsaw blades from Bosch all deliver a great finish to both upper and lower surfaces

A jigsaw is only really as good as the blade that's fitted, but whether you're cutting softwood, hardwood or sheet materials there's a baffling choice. If you're looking for a really clean cut (particularly in worktops), Bosch have perhaps made the decision slightly easier with the introduction of their new Hardwood Precision and Extra-Clean blades.

Blade range

All prefixed with T308, they'll cut up to 50mm-thick sheet materials and solid timber where an ultra-clean finish is required. The T308BOF has two sets of up-cut teeth (with slightly different rake) and lightly relieved cutting edge. Both the T308BFP and T308BF have up and down-cut teeth with a more pronounced front curve. The T308BFP is more suitable where cuts need to be dead square to the surface, and all blades are spade-end and bi-metal quality.

Conclusion

I tried all three blades across several materials – oak, plywood and melamine-faced MDF. Although not designed for tight curves, gentle curved cuts were not a problem. As expected, the finish to both upper and lower surfaces was as clean as a whistle. Whichever blade you choose, you're unlikely to be disappointed...

THE GW VERDICT

- **PROS:** Very clean cuts to upper and lower surfaces
- **CONS:** A tad expensive
- **RATING:** 5 out of 5

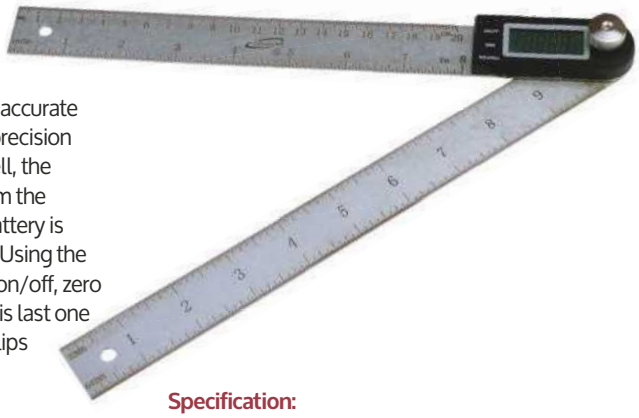
Specification:

- **Length of teeth:** 91mm
- **Tooth spacing (mm):** 2.2 XC
- **Depth:** 1mm
- **Width:** 82mm
- **Height:** 200mm

- **Typical price:** From £9.99 for a pack of three
- **Web:** www.bosch-pt.com

Extreme accuracy

This excellent digital protractor and rule from iGaging features an easy to read and set display and delivers incredible accuracy



Most of us will have fond memories of those good old plastic protractors from our school geometry sets. They relied on you having good eyesight for accurate readings. Nowadays, digital readouts are commonplace, so life is easier. This combined protractor and rule from iGaging consists of a pair of brushed, stainless steel blades and displays the precise angle between them when set. Blades can be locked firmly with a knurled steel thumbscrew.

Child's play

Each rule has etched graduations which look slightly archaic, but at least they're clear. The rear longer blade is imperial only (up to 10in or 250mm), while the shorter one has metric along its top edge. Maximum distance on the front one is 200mm, and holes at the ends mean you can store the tool on a hook and these coincide when closed.

This protractor is sturdy and highly accurate (resolution 0.05°), so it's ideal for precision checks. Powered by a 3V button cell, the compartment slides out neatly from the edge of the display box. A spare battery is included, which is always a bonus. Using the digital readout is child's play, with on/off, zero and hold/reverse buttons. Press this last one for three seconds and the display flips upside down, which is neat.

Conclusion

So, an excellent tool that's an interesting mix of old school measurement and digital technology. Longer version models (350mm and 450mm) are also available. **GW**

Blades can be locked firmly with a knurled steel thumbscrew

Specification:

- **Open length:** 525mm (incorporating both metric and imperial rules)
- **Accuracy:** +/-0.3°
- **Range:** 360°
- Supplied with a standard 3V CR2032 battery

- **Typical price:** £25
- **Web:** www.johnsontools.co.uk

THE GW VERDICT

- **PROS:** Extremely accurate tool; display easy to read and set
- **CONS:** Metric on one rule only; slightly dated numerals on rules
- **RATING:** 4 out of 5

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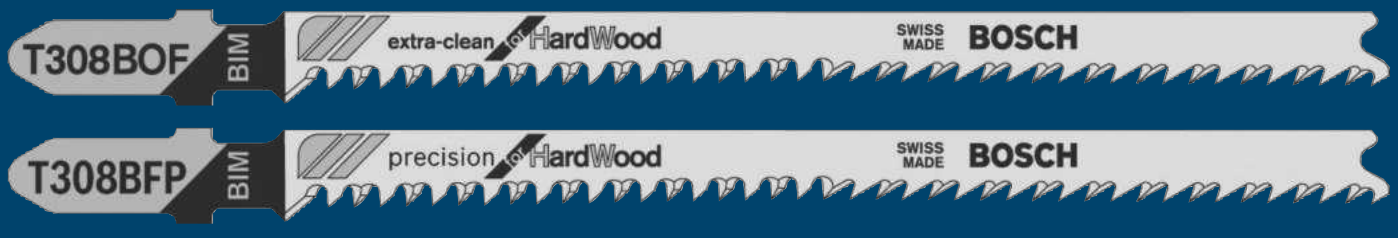
NEW! Extra-Clean and Precision Jigsaw Blades for Hard Wood.



First class routing, nearly 20 years on

Since being introduced to the market nearly 20 years ago, the Trend T5 has gone from strength to strength. A classic indeed, this variable-speed router is compact, lightweight, easy to control and also represents fantastic value for money

NEW
T5 VIDEO!
See **www.trend-uk.com/video**

The *GW* archives show that the Trend T5 made its debut to the market way back in 1998 and was reviewed in issue *GW*76 by Phil Davy who commented on its ease of use and similarity to the classic Elu 96 and 96E machines.

Now, almost 20 years on, it not only survives, but retains its place in the market as a much loved router by trade and amateur alike; a perfect example of 'if it ain't broke, don't fix it'.

Transitions & tweaks

That's not to say the T5 has remained static and untouched during this period: over time the router has had a few tweaks along the way while still maintaining the classic design and being easy to operate.

This includes an improved spindle lock assembly for more efficient bit swaps, and upgrades to the plunge lock and handles for smoother operation, and under the bonnet, enhancements to the electronics make the router more efficient under load.

Ergonomics & design

Ergonomics play a big part in tool design and little wonder the T5 still survives, as the original Elu version was a hard act to follow, with the sliding power switch position on the side of the tool in easy reach of the thumb for a quick and smooth operation.

The plunge is another area of great ergonomic forethought and where the T5 bucks the trend for most router designs. While the majority rely on a lever lock for the plunge, and these can be good, bad or indifferent depending on how easy they are to access and engage, the T5 plunge is operated via a grip on the opposite side of the power switch.

A simple twist releases or locks the plunge so it's incredibly easy to control, and ideal for ramped cuts or starting in from an edge for stopped grooves or moulds.

It soon becomes second nature to twist, plunge and lock and this is a really intuitive way of controlling a cut without having to feel around the back of the router for a plunge lock lever in order to lift the cutter away from the work.

The inclusion of a simple, clip to fit dust kit to control the dust and keep the work area clear as you rout is also a big bonus.

Router accessories

It's not just about the ergonomics, however; Trend made a big impact on the market with the range of router accessories they introduced with many new, radical and innovative designs in their day, thinking well outside the box and intending the user to get the full use from a router, and this innovation continues to this day. The base design of the Elu routers that were taken into the Trend versions remain an attribute that some manufacturers also adhere to with identical guide bush aperture diameters and fence rod spacings, as well as similar base shapes or screw fixings, which ensures they are compatible with the full range of routing accessories. This is high praise indeed, especially for a design that is now decades old – certainly no mean feat in an era of huge technological advances!

T5 changes

So while the T5 seems to have come full circle in retaining a look and feel that is little different to when it was first introduced, under the bonnet the motor has gone from the initial 850W to a 1,000W machine, so there's greater power to drive the more demanding cutters and it remains a compact, lightweight and easy to control router.

The fence remains a fine adjustable cast alloy version as standard with sliding cheeks to allow the fence aperture to be reduced for different applications, just as it was in

A clip-in dust kit is supplied to control the dust and help keep the work area clear as you rout

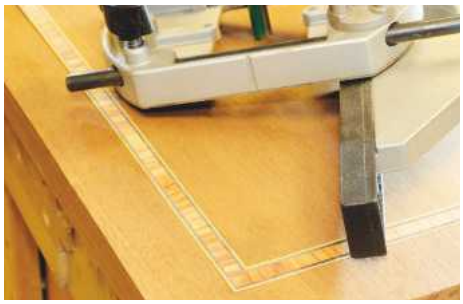
The fence is excellent and comes with a fine adjuster as standard

Using the guide bush, you can easily work with templates and jigs

Also supplied in the kit is the trammel point for circle and arc work

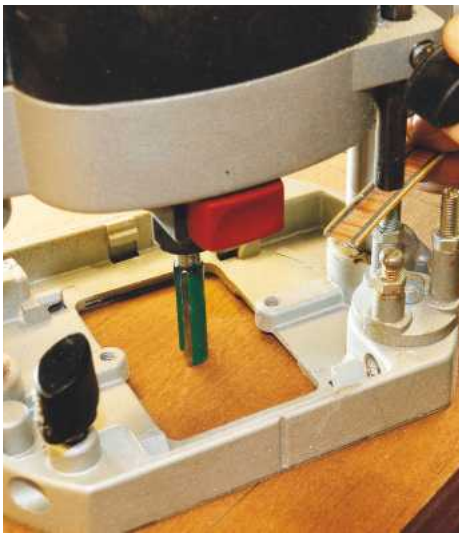
The sliding fence facings allow full support for different sized bits and applications

The side-mounted sliding power switch is easy to operate



The basic T5 is very adaptable and not just limited to edge moulds; this inlay is easy to let in but very effective

You can use the turret to gauge against fittings such as hinges...



... or against inlays to set the routing depth to let them in perfectly flush

1998 – something that is often omitted in favour of inferior simple pressed steel versions with fixed facings, as used by other manufacturers.

If you are looking to get the best from your router, any fine adjustments are beneficial and welcome, and being able to nudge a cut in micrometer increments with a fence when fitting inlays or making housing joints, for example, is an essential attribute.

The height adjustment out of the box remains the same as the original Elu; a simple depth post dropping down to a rotating three-post turret. Simplistic as it is, the design is clever and easy to use for routing set depths by using the post to gauge thicknesses of the work to be let in or with gauge blocks, or simply to run a series of passes to limit the depth of cut per pass, which helps to minimise strain on the router and cutter. Again, this same or similar design is replicated across the board by many manufacturers as it works so well.

A fine height adjuster is available for fine-tuning a cut, which is useful for some jig work where a cut may require fine control in order to achieve the fit – when using a dovetail jig, for example – but with most work, the simple depth post works well.

UK wide promotional offer

So nearly two decades on, the Trend T5 retains its place in the industry and continues to be a firm favourite here at *GW* as well as out in the field, but most remarkable of all has to be its price. Back in 1998 the RRP for the T5 was £199 with a selling price of around £179.

This was certainly a decent price back then for a tool that could do so much and with so many accessories available, but now, in 2017, the T5, thanks to a UK wide promotional offer, can be picked up for a steal at just £149.

There cannot be many, if any, tools that have retained their place in the market for so long a period and somehow managed to shave £30 off their selling price! Here at *GW* we've always loved the design and performance of the T5, and at this new promotional price, there should now be a lot more people who'll be able to do the same. **GW**

The rotating turret and depth post are simple but very effective for many routing jobs

The simple twist lock plunge is great for fast, easy and controllable plunges

Specification:

- **Rating:** Professional/trade
- **Plunge stroke:** 0-50mm
- **Power input:** 1,000W
- **Standard collet dia:** 1/4in
- **Max cutter dia:** 40mm
- **No load speeds:** 9-27,000rpm
- **Dust spout size (ID):** 35mm
- **Guide bush dia:** 20mm
- **Weight:** 3.3kg
- **Voltages:** 240 or 115V

- **Includes:** 1 × 6.35mm collet; 1 × 35mm clip-in dust spout; 1 × 20mm guide bush; 1 × side-fence with micro adjuster; 1 × beam trammel attachment

Promotional price: £149 (list price £267.94)
Web: www.trend-uk.com

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CTS10D

MODEL	MOTOR	BLADE	EXC.VAT	INC.VAT
CTS800B	600W	200mm	£72.99	£87.59
CTS11	1500W	254mm	£149.98	£179.98
CTS10D	1500W	254mm	£169.98	£203.98

NEW Clarke 4" BELT/ 6" DISC SANDER

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

CS4-6E

£92.99 EXC.VAT £111.59 INC.VAT

Clarke 6" BELT/ 9" DISC SANDER

- Includes stand
- 1 HP/ 230V/ 1ph motor

CS6-9C

£239.00 EXC.VAT £286.80 INC.VAT

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

CTS14

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

£129.98 EXC.VAT £155.98 INC.VAT

SHOWN WITH OPTIONAL LEG KIT CLK5 £19.98 EXC.VAT £23.98 INC.VAT

EVOLUTION FURY5-S TABLE SAW

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

£149.98 EXC.VAT £179.98 INC.VAT

3 YEAR GUARANTEE

Clarke WOODWORKING VICES

STANLEY Record

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

WV7

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EXC.VAT	INC.VAT
Clarke CHT152	Bolted	150/152/61	£14.99	£17.99
Stanley Multi Angle	Clamped	72/60/40	£17.99	£21.59
Record TV75B	Clamped	75/50/32	£20.99	£25.19
Clarke WV7	Bolted	180/205/78	£29.98	£35.98

Clarke QUALITY CAST IRON STOVES

8kW

OVER 22 QUALITY STYLES ON DISPLAY

£219.00 EXC.VAT £262.80 INC.VAT

FLUES, COWLS & ACCESSORIES IN STOCK

BARREL II

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock
- Quality Induction 300W motor

£69.98 EXC.VAT £83.98 INC.VAT

CBS1-5

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY £139.98 EXC.VAT £167.98 INC.VAT

METABO ALSO AVAILABLE

- Powerful 750W motor
- 56 litre bag capacity
- Flow rate of 850M3/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CDE35B	750W	450 M3/h	56Ltrs	£139.98	£167.98
CDE7B	750W	850 M3/h	114Ltrs	£159.98	£191.98

Clarke ELECTRIC HEATERS

DEVIL 7005

DEVIL 6005

FROM ONLY £74.99 EXC.VAT £89.99 INC.VAT

MODEL	VOLTAGE	HEAT OUTPUT	EXC.VAT	INC.VAT
DEVIL 6005	400V	2.5-5kW	£74.99	£89.99
DEVIL 7005	400V	5kW	£84.99	£101.99
DEVIL 6009	400V	4.5-9kW	£119.00	£142.80
DEVIL 6015	400V	5-10-15kW	£179.00	£214.80
DEVIL 7025	400V	22kW	£299.00	£358.80
DEVIL 7030	400V	30kW	£349.00	£418.80

Clarke STAPLE/ NAIL GUNS

- All models include nail/ staple pack and tough moulded case

FROM ONLY £22.99 EXC.VAT £27.59 INC.VAT

NEW

CONSN18LIC

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

MODEL	TYPE	STAPLE/NAIL GAUGE	EXC. VAT	INC. VAT
CC48	Cordless 4.8V Ni-MH	22/18	£29.98	£35.98
CESNG2	Electric	18/18	£39.98	£47.98
CONSN18LiC	Cordless 18V Lithium-Ion	18/18	£109.98	£131.98

NEW

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

£39.98 EXC.VAT £47.98 INC.VAT

CMFT250

Clarke TURBO AIR COMPRESSORS

airmaster

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

- Superb range ideal for DIY, hobby & semi-professional use
- 'V' Twin Pump

8/250

MODEL	MOTOR	CFM	TANK	EXC.VAT	INC.VAT
8/250	2HP	7.5	24ltr	£89.98	£107.98
7/250	2 HP	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*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke 4" BELT/ 8" DISC SANDER

- Includes two tables
- 550W 230V motor

£159.98 EXC.VAT £191.98 INC.VAT

CS4-8

Clarke DISC SANDER (305MM)

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

£129.98 EXC.VAT £155.98 INC.VAT

CDS300B

Clarke POWER PLANERS

CEP1

BLACK & DECKER

- 82mm cutting width

FROM ONLY £28.99 EXC.VAT £34.79 INC.VAT

MODEL	DEPTH OF CUT M OTOR		EXC.VAT	INC.VAT
Clarke CEP1	650W	2mm	£28.99	£34.79
Einhell TE-PL850	850W	3mm	£52.99	£63.59
B&D KW750K - GB	750W#	2mm	£57.99	£69.59

Clarke CROS3 450W RANDOM ORBITAL SANDER

- Adjustable front handle improves control
- 7000-14000rpm

£29.98 EXC.VAT £35.98 INC.VAT

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

Clarke BELT SANDERS

makita

- Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK

BS1

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

*was £113.99 inc.VAT

MODEL	MOTOR	M/MIN	EXC.VAT	INC.VAT
Clarke BS1	900W	380	£36.99	£44.39
Clarke CBS2	1200W	480	£79.98	£95.98
Makita 9911*	650W	75-270	£86.99	£104.39

Clarke HARDWOOD WORKBENCH

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

CHB1500

£144.99 EXC.VAT £173.99 INC.VAT

Clarke SHEET SANDERS

- Ergonomic design for optimum comfort

CON300

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

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190X90mm	150W	£16.99	£20.39
CON300	230X115mm	330W	£34.99	£41.99

Clarke STATIC PHASE CONVERTERS

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

PC60

ROTARY PHASE CONVERTERS ALSO IN STOCK

CONVERT 230V 1PH TO 400V 3PH

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

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

Clarke ELECTRIC POWER FILE

CPF13

- Variable belt speed
- Tilting head

*Black & Decker

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

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

Clarke CIRCULAR SAWS

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

CON185

*Includes laser guide

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

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

VAC KING WET & DRY VACUUM CLEANERS

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

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

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC25SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR*	1400W	24/21ltr	£99.98	£119.98

Clarke CORDLESS DRILL/ DRIVERS

Clarke CONTRACTOR

CON18Li

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

powered by Li-ion

MODEL	VOLTS	BATTS	EXC. VAT	INC.VAT
CON18Ni	18V	2 x Ni-Cd	£69.98	£83.98
CON18Li	18V	2 x Li-Ion	£89.98	£107.98

Clarke PORTABLE THICKNESSER

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

£219.00 EXC.VAT £262.80 INC.VAT

CPT250

Clarke OSCILLATING BOBBIN SANDER

- Provides exceptional finishes for deep & wide work pieces, front edges & narrow inner curves
- Dust collection port
- Inc. 6 sanding sleeves/ bobbins

£139.98 EXC.VAT £167.98 INC.VAT

COBS1

Clarke BOLTLESS SHELVING/BENCHES

- Simple fast assembly in minutes using only a hammer

SAVE 10%

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150 KG (evenly distributed) Strong 9mm fibreboard shelves PER SHELF

350 KG (evenly distributed) Strong 12 mm fibreboard shelves PER SHELF

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

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

Clarke WHETSTONE SHARPENER (200MM)

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

ONLY £119.98 EXC.VAT £143.98 INC.VAT

Clarke PLANERS & THICKNESSERS

CPT800

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

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

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£209.98	£251.98
CPT1000	10"	120mm	£289.00	£346.80

Clarke OSCILLATING BELT & BOBBIN SANDER

- Can sand concave, convex, straight or multi-curved work pieces
- Dust collection port
- Inc. sleeves, drum & belt

£179.98 EXC.VAT £215.98 INC.VAT

COEBS1

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Clarke SLIDING COMPOUND MITRE SAW

BEST SELLER

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

£139.98 EXC.VAT £167.98 INC.VAT

CMS10S2

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/CROSS	EXC.VAT	INC.VAT
CMS210	210/30	60/120	£59.98	£71.98
CMS10S2	254/30	78/340	£139.98	£167.98

Clarke CONTRACTOR BOSCH JIGSAWS

BEST SELLER

CON750

*DIY #Professional

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

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC VAT
Clarke CJS380*	420W	55/6mm	£15.99	£19.19
Clarke CON750#‡	750W	80/10mm	£27.99	£33.59
Bosch PST700E*	500W	70/4mm	£44.99	£53.99

‡ was £34.79 inc.VAT

Clarke BENCH BANDSAW

- Produces fast, precise mitre & longitudinal cuts • Cuts in all types of wood

£129.98 EXC.VAT £155.98 INC.VAT

CBS190B

MODEL	MOTOR	THROAT SIZE	EXC.VAT	INC.VAT
CBS190B	350W	7.5"	£129.98	£155.98

Clarke PROFESSIONAL BANDSAWS

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

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

CBS300

FROM ONLY £399.00 EXC.VAT £478.80 INC.VAT

MODELS ALSO FEATURE:

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

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS300	305mm/12"	165mm	115mm	£399.00	£478.80
CBS350	340mm/14"	225mm	160mm	£498.00	£597.60

Clarke BISCUIT JOINTER

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

NEW

2 YEAR GUARANTEE

£49.98 EXC.VAT £59.98 INC.VAT

TC-BJ900

MITRE SAWS TC-SM2131

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

2 YEAR GUARANTEE

Laser Guide ‡ Sliding Compound

- Quality Range of Mitre saws and blades in stock

MODEL	BLADE DIA/ BORE (mm)	MAX CUT DEPTH/CROSS	EXC. VAT	INC. VAT
Einhell TC-MS 2112	210/30	55/120mm	£59.98	£71.98
Einhell TC-SM2131#	210/30	62/310mm	£129.98	£155.98
Einhell SM2534‡	250/30	75/340mm	£159.98	£191.98

Clarke SCROLL SAWS

FROM ONLY £82.99 EXC.VAT £99.59 INC.VAT

CSS400C

BEST SELLER

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

MODEL	MOTOR	SPEED RPM	EXC. VAT	INC. VAT
CSS400B	85W	1450	£82.99	£99.59
CSS16VB	90W	550-1600	£94.99	£113.99
CSS400C	90W	550-1600	£114.99	£137.99

Clarke MORTISING MACHINE

£174.99 EXC.VAT £209.99 INC.VAT

CBM1B

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

CHISELS AVAILABLE FROM £8.39 INC VAT

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

Clarke ROUTER TABLE

CRT-1

Router not included

BEST SELLER

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

£69.98 EXC.VAT £83.98 INC.VAT

Clarke GRINDERS & STANDS

- Stands come complete with bolt mountings and feet anchor holes

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

6" & 8" AVAILABLE WITH LIGHT

STANDS FROM ONLY £47.98 INC.VAT

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

With sanding belt *8" whetstone & 6" drystone

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

Clarke FOLDING MITRESAW STAND

CFMSS1

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

ONLY £66.99 EXC.VAT £80.39 INC.VAT

Clarke WORK TABLE SUPPORTS (PAIR)

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

CWTS1

SIMPLY ADD YOUR OWN TOP

ONLY £28.99 EXC.VAT £34.79 INC.VAT

BEST SELLER

Clarke CONTRACTOR BOSCH ROUTERS

- Powerful heavy duty machines ideal for trade and DIY use

CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

FROM ONLY £46.99 EXC.VAT £56.39 INC.VAT

CR1C

*DIY

MODEL	MOTOR (W)	PLUNGE (mm)	EXC.VAT	INC.VAT
CR1C*	1200	0-50	£46.99	£56.39
Bosch POF1400ACE	1400	0-55	£86.99	£104.39
CR2‡	2100	0-60	£119.98	£143.98

‡ was £149.99 inc.VAT

Clarke 13" MINI WOOD LATHE

£149.98 EXC.VAT £179.98 INC.VAT

CWL325V

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

Clarke DRILL PRESSES

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

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

CDP152B

B = Bench mounted F = Floor standing

MODEL	MOTOR (W) SPEEDS	EXC. VAT	INC. VAT
CDP5EB	350 / 5	£66.99	£80.39
CDP102B	350 / 5	£79.98	£95.98
CDP152B	450 / 12	£139.98	£167.98
CDP202B	450 / 16	£185.00	£222.00
CDP10B	370 / 12	£198.99	£238.79
CDP352F	550 / 16	£229.00	£274.80
CDP502F1100	/ 12	£499.00	£598.80

Clarke DETAIL SANDERS

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

CDS-1V

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

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

ALL MODELS INC. SANDING SHEETS

Clarke 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

CDTJ12

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From bole to bowl

Edward Hopkins puts the Arbortech TurboPlane blade through its paces and uses it to rough down and shape a large burr bowl blank

WORD PLAY

Q. Changing one letter at a time, can you get from bole to bowl using two intermediary words? I can do it using three (see bottom of page 25)

Have you ever passed an old oak tree with a whiskery bulbous burr at the bottom of its trunk and entertained the nefarious fantasy of coming back in the night with a chainsaw, slicing it off and taking it home? Oh good! I'm not alone. I've wanted to do this for decades but propriety stood in the way: it would be rude to the owner and rude to the tree itself. Well, all good things come to those who wait: in my new garden were several oak stumps needing to be reduced. One had burrs. I asked the surgeons to be careful.

Burr oak is the nearest that wood gets to being marble. It has fantastic, psychedelic whirlpools of swirling grain, and crazy streaks, like a weather map of the whole world compacted and condensed into a few square inches. Burrs form when the tree's urge to replicate is limited by a lack of plumbing (as with some woodworkers). The shoots don't go upwards fighting for the light, but remain as twigs, with great character but a lack of determination (as with some woodworkers).

Neither nefarious nor now a fantasy, the burr was mine!

I put my burr bowl blank (for what else would it become but a bowl?) along with lesser others up in the garage to begin to dry out. It would take years to fully season, so I'd have to work it green. But how would I work it? Mount it on a lathe? Not on my lathe. It might fit, but I wouldn't stay in the room while it went round. Drill away most of the waste and follow up with cranked gouges? Aargh! Route it down in ramps like a quarry? More aargh! Abrasive attachments? Please. What I really wanted was something on the end of a motor that in a controllable way would remove all the wood it touched. In shavings, not dust. Leaving a good finish, but primarily, taking the grunt from the work. Come in, the Arbortech rotary planer: a disc resembling a horizontally sliced doughnut with three curved blades set equally around, to be fitted to a small angle grinder.

The blade at a glance

The curve of the blade extends round the edge of the disc. This perimeter gives the fiercest cutting action but is always in the curved nature of a gouge. It worked best on the concave bowl where the shape of the cutter, itself curved, lent itself to the shape of the hollow. It also removed much of the waste from the outside of the bowl, but here its cutting action was contrary to the shape sought. I played with a variety of sweeping strokes so as to eliminate gouge marks but in the end turned to other tools – hand planer, belt sander and delta sander – to even out the line. The beauty of this bowl was to be the wood itself and I thought the outside should be smooth like a sea-worn pebble. The inside of the bowl I left straight from the Arbortech partly because

The Arbortech rotary plane works well. It is not super fast, but is fast enough. We grated through the bark like cheese, and as sapwood vanished, knots the size of peas and marbles began to appear. The workshop, meanwhile, suffered a blizzard and was carpeted in shavings. You couldn't do this in the kitchen

I started with the outside of the bowl to see what was there. I kept going down until I hit solid rock – except in a couple of places where sapwood and bark ran through. The burr was far from uniform in texture. I did wonder if I could spin the wheel and effectively run a vertical lathe. I tried, but not for long. It was like a reckless version of rubbing your stomach and patting your head. Later I dispensed with the dusk mask as the shavings were moist and heavy, not dusty

the gouge-like marks it left behind were not obtrusive, but mainly because I couldn't face grinding them away with some sort of abrasive attachment, which I didn't have anyway.

Where the TurboPlane failed (in my hands at least) was on the lip of the bowl. No matter how delicately I scooped and swept with it, I could not achieve a flat surface. Instead I set a roller in line with my planer/thicknesser cutterblock, and rotated the bowl's lip over it (as a sort of rotary surfacer). The TurboPlane doesn't do everything but it does a huge amount, and principally it allows the scooping out of the bowl.

The TurboPlane is expensive at well over £100. After many hours work it did leave some scorch marks, but it took only a few strokes with a diamond slipstone (I think for that money, Arbortech might have thrown one in) to restore an edge. Even then it preferred to cut the hardest wood, scuffing up the softer stuff.

The cut left by the tree surgeons made flatter with a hand planer

The blade in use

I used a potter's wheel as a bench. I think some sort of turntable is probably necessary (I've never done this before). I trusted to luck for stability – the dead weight of the burr inclining it to stay put. Later, as the workpiece became lighter, stability became a problem. Upside down, the bowl blank sat on a flattish face, but the right way up, it had an increasing tendency to wobble. I thought that a bag half-filled with sand could be moulded into a collar to hold it. A wheelbarrow tyre might work. I had neither to hand, so I chocked the bowl up with three blocks of wood. I recommend a method a bit more thorough than this.

I gave the bowl a coat of hard wax oil to slow down its seasoning and minimise the risk of shakes, and left it in a darkened room. It mustn't sit in the sun for a long time yet (unlike some woodworkers)

Conclusion

For the job I had in hand, the cutter was almost ideal. Without it I wouldn't have known how to begin. I do wonder, however, what else I might use it for. Were I to be a junior Henry Moore sculpting large curvaceous forms, I might start off with a chainsaw and move onto this for finer shaping. I'm not. I do have many more blanks of burr upstairs in the garage, though nothing quite this splendid. **GW**

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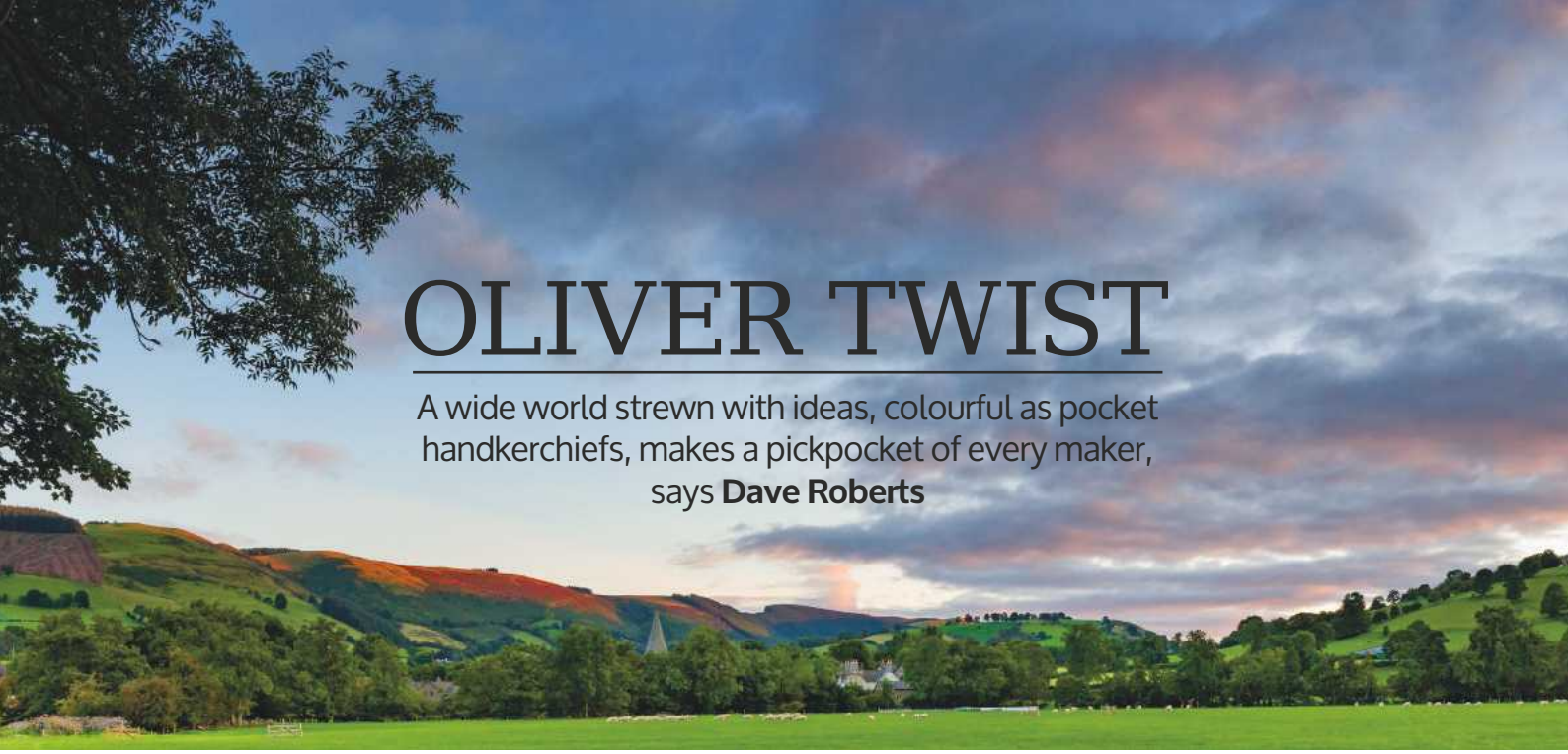
A. *Bole, bale, bawl, bowl*



OLIVER TWIST

A wide world strewn with ideas, colourful as pocket handkerchiefs, makes a pickpocket of every maker, says **Dave Roberts**

PIC 1. A natural contrast is provided by the silver-grey of the oak's weathered long-grain, and the darker end-grain

The workshop at The Old Vic' has been sadly neglected these last few weeks, during which the house has been playing host to the last of the summer's visitors. Among these was a pair of opera singers, part of a company performing at a local arts centre based in what was once the workhouse, which served 23 parishes and remained in service, latterly as a 'public assistance institution', until the 1970s, believe it or not.

The architect of the workhouse was Thomas Penson, whose youngest son would, 20 years later, design the church beside The Old Vic', and probably the vicarage, too. You can see, then, how a train of thought led to Dickens' *Oliver Twist*, from which sprang the thought of pick-pocketing, and the long-held suspicion that, when it comes to inspiration, all makers are pickpockets of a kind. I'm not talking about actual theft, of course, but the normal process of feeding the imagination. In this, I'm sure that woodworkers are no less acquisitive than other craftspeople: for those with magpie eyes, the wide world is strewn with ideas, colourful as pocket handkerchiefs, all of which make the thumbs itch and the pencil quicken. I found an example of this recently in the gardens of friends who live halfway up one of the Berwyns.

PIC 2. Geometric: Chris' seats are made up of right-angles...

PIC 3. ... and the right angle for the seat back – 63°

PICS 4&5. Visible fixings have been kept to the bare minimum; those that can be seen are discretely placed and neatly pocketed. This coach bolt ties the back of the arm to the seat; to avoid using a second bolt in the arm, however, the front is retained by an oversized button – the sort of thing you'd normally find fastening a tabletop to its apron – that keys into a mortise in the arm

Massive & minimal

Commanding an almost-360° view from the eyrie where Chris and John live, these garden seats were originally conceived as a way of using up the left-overs of oak sleepers – the green timbers sold for garden structures, that is, not bitumen-laden railway sleepers. Whatever economy there was in not wasting materials, however, was completely out-weighed by the need to buy more sleepers to complete the job because what Chris wanted was not simply whatever could be managed with odds and ends; she wanted furniture that makes a virtue of simplicity – and does so on a large scale. Her brief to the local craftsman called for oversize, two and three-seat 'sofas' – wide enough for people to sit side by side but still turn to face each other and hold a conversation – and a chair. She wanted a minimalist look created from right-angles and flush faces, as part of which she insisted on the bare minimum of visible fixings; those that couldn't be hidden were to be discretely placed.

Simplicity is never easy to contrive, of course, and its success often depends upon what you don't do. The furniture's only concession to decoration, then, is the chamfer that has taken the arris off the square-cut timbers. It's the lightest of touches, but surfaces and angles that might have appeared merely massive are transformed by its deliberate intention, which is to underscore the fact that the rest of the work has been left to nature. The almost luminous silver-greyness of the wholly untreated long-grain relieves any impression of weight (**Pic.1**); the fine, contrasting detail of the oak's pinstripe grain – its striations almost stone-like – connects through to the annular rings of the end-grain, which has weathered and darkened as though stained. Square and monolithic it may be, but this furniture is

also exceptionally comfortable, something that Chris and John maintain is largely due to the angle of incidence between the back and the seat. After much experimentation, I'm told, the maker arrived at an angle of 63° (**Pics.2 & 3**) – upright enough for one to sit rather than sprawl, yet reclined enough to take the weight off the seat bones and avoid park-bench numbness.

Canals & cobbles

Though the sleepers for Chris and John's oak furniture were bought locally, they probably aren't English oak; or rather, they may be *Quercus robur* – what's commonly called English oak – but probably weren't grown in England. In fact, I gather from Forestry Commission figures for 2015 that, while the majority of the sawn hardwood used in the UK is made up of temperate varieties, such as ash, beech, cherry and – the most popular – oak, only 7% of this hardwood is home-grown. Thereby hangs another story, of course, but for now it brings me back to the workhouse by way of some other massive oak structures, and an encounter with The Canal & River Trust, the charity that replaced British Waterways in 2012.

The trust has responsibility for 2,000 miles of canals and rivers, whose 1,580 locks give rise to an annual maintenance bill of £2m for the replacement of lock gates alone. The life of a lock gate is only about 20 years, with the result that every winter the trust – which has workshops in Bradley near Birmingham, and Stanley Ferry near Wakefield – replaces about 100 of them, every one of which is built from green oak imported from France (**Pic.6**).

It was via this same canal system that, around 175 years ago, the iron coffin handles of *Oliver Twist*'s Mr Sowerberry were brought from Birmingham, and the timber for the workhousewas brought from Liverpool – from which I infer that it was imported timber carried from the quays in the Port of Liverpool. I haven't visited the workhouse itself yet, but I'll lay odds that its floors and beams are of our old friend, North American pitch pine, which was a staple of schools, churches, and public buildings at the time. However, it wasn't imported timber that concerned Thomas Penson at the workhouse, but the local stone, on whose 'intractable nature' he blamed an over-run in building costs. Happily, we're having more luck than Penson while working with the stone at The Old Vic' – most recently when we lifted some paving at the back of the house and uncovered the original cobbled surface of the yard. Though in need of cleaning and repair, its mainly blue-grey and black stones reflected the colours of the rainy autumn sky beautifully, and put me in mind of the petrified wooden 'pebbles' made by renowned bog oak-stalker, Hamish Low of Adamson and Low, using fragments of the 5,000-year-old timber that he excavates from the Cambridgeshire fens (**Pic.8**). The cobbles in the yard – which were most probably sourced from the river bed and banks behind the house – were shaped by the rolling and abrading involved in glaciation; I was sworn to keep secret Hamish's method for shaping the pebbles, but anyone familiar with gem polishing will be able to work out how they were smoothed by a process rather quicker than a glacier…

PIC 6. Every year, about 100 of the canal system's 1,580 oak lock gates are replaced

PIC 7. Uncovered: the cobbles at the The Old Vic' put me in mind of...

PIC 8. ... the petrified wooden pebbles made by Hamish Low, using fragments of 5,000-year-old bog oak

Hidden secrets

The plot of *Oliver Twist* turns, of course, upon a secret, and it is the remaining turn in a covered-over staircase at The Old Vic' that has had me toying with the possibility of revisiting a 'secret door' that I made a while back, and which was disguised as a bookcase lined with dummy books (**Pic.9**). I've no woodwork to show at the moment, but the idea did send me back to some notes I acquired on secret drawers, which say that the 18th century was, 'the European heyday of hiding places, with valuables being concealed in the aprons of tables, the lopers of writing desks, behind false backs and decorative features, or inside hollow partitions'. Overleaf are a few examples: >

PIC 9. "There are books," according to *Oliver Twist*'s Mr Brownlow, "of which the backs and covers are by far the best parts." Dummy spines made for a 'secret door'

OAK & STONE

Oak and stone come together in another magpie-attracting technique, this time used by Workshop East's Mauro Dell'Orco to create a natural-looking rippled texture in oak (**Pic.10**). Rather than routing the flutes, he used a woodworking bit in a Woodpecker which, despite its name, is more usually found in the hands of stone masons (**Pic.11**). Using the Woodpecker was quicker than hand-carving, Mauro explained, but while it took a lot of the labour out of working across the grain, its size and modest cutting speed meant that it was also controllable. Another advantage of the Woodpecker is that it's an electro-mechanical hammer rather than a pneumatic one; it's therefore quieter, and doesn't need a compressor. If, on the other hand, you already have a compressor, then an air chisel would be a cheaper way to experiment with this technique

PIC 10. Mauro Dell'Orco created this natural-looking rippled texture in oak using...

PIC 11. ... a Woodpecker – an electro-mechanical hammer made by Gelma, an Italian company

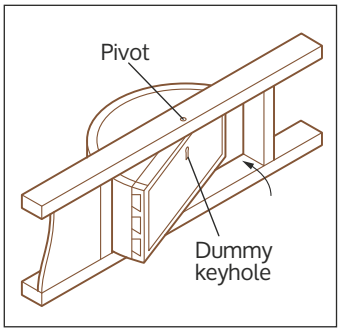


FIG 1. Pivoting drawer

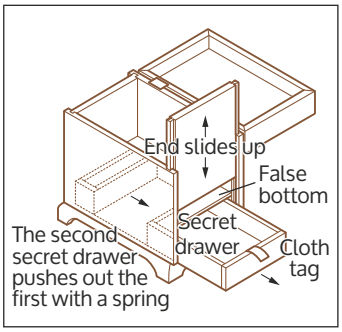


FIG 2. Secret drawer

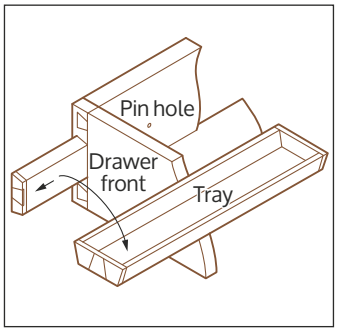


FIG 3. Dummy dovetail

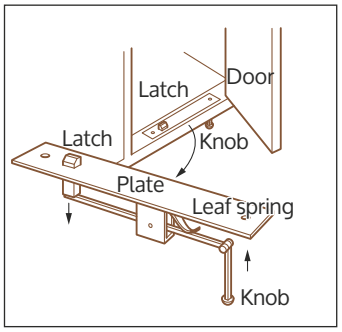
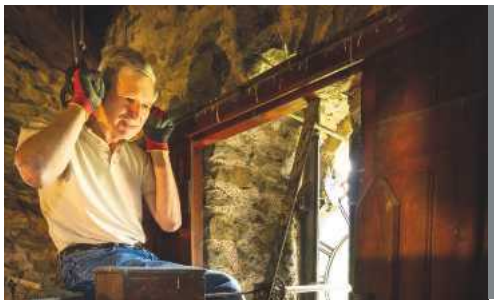


FIG 4. Spring lock

As shown, with its dummy keyhole, this pivoting drawer (**Fig.1**) is hardly a secret, but all that's needed is to do away with the keyhole and match the drawer front to the adjacent panels. In situations that call for shallow drawers, its pivoting operation might well offer a more stable alternative to a conventional sliding drawer on runners, and possibly more usable space.

Fig.2 shows a drawer hidden in the bottom of a box, but the idea can be adapted to other situations and different sizes of project. The compartment in **Fig.3**, meanwhile, is more of a challenge, being hidden in the thickness of a drawer's side and disguised by the interlocking tails and pins of the dovetails. 'The deception relies,' say the notes, 'upon close-fitting joints, and also on achieving a consistent grain pattern across all of the parts, which can be done by cutting a set of dummy dovetails from a piece of veneer and gluing them on top of the joint itself'. The pinhole in the drawer's side, as shown, allows the tray to be teased out, though many hidden features used a catch to release or secure them. Two of the most common catches, apparently, were the spring lock (**Fig.4**), which can be made from spring steel or even a strip of hardwood, and the dovetailed key, a sliding section of joint that fits puzzle-wise into a mortise to lock the hidden drawer or compartment. Again, the principles of these devices are readily adapted, though as David Linley (**www.davidlinley.com**) says: "Secret drawers are one of the most challenging features to include in a piece of furniture. A feat of engineering as much as woodworking, the complexity of the mechanisms of a secret drawer tests even the most talented of craftsmen, and adds an element of surprise and romance to a piece." For more inspiration, try picking Thomas Sheraton's pocket; there are lots of hidden drawers in his *Cabinet Maker and Upholsterer's Drawing Book*. **GW**



NEXT MONTH

Oliver Twist has too many colourful characters not to revisit it again, but I'm going to call on Lionel Bart's adaptation, *Oliver!*, not least because – unlike Dickens' unrepentant villain – Bart's Fagin is a likeable rogue who does at least consider converting from a life of crime to an honest trade. All of which leads us neatly onto next month's timber conversion special...

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Jessica's bed

Tasked with building a 'big girl's bed' for his young granddaughter, **David Long** had to make the most of the available space and also incorporate integrated storage boxes that would fit neatly underneath

My granddaughter Jessica recently had her fourth birthday, and it was time for her to move up from her cot bed to a 'big girl's' bed. In order to maximise the remaining floorspace/toy area, her new bed needed to fit into an alcove that was just 870mm wide between skirting boards. This was too narrow for all identified UK bed frames (including 2ft 6in mattress ones) and the IKEA continental ones (800mm wide mattresses). Up went the familiar cry of "Granddad can build one" and shown in this article is the making of that bed. This project also gave me a great opportunity to use my new Festool Domino machine.

Design & dimension constraints

Width was the overriding factor for this project, along with the requirement to maximise the space under the bed with movable storage bins. To give a bit of allowance for out-of-square walls, the head and footboard width were set at 860mm. We decided to use an IKEA 800 × 2,000mm MALFORS mattress and LURÖY slatted bed base, which after allowing 5mm all round gave me just 50mm maximum remaining width for the side rails! Ultimately the side rail thickness finished at approximately 23mm each.

Other main target dimensions included a headboard height of 840mm and a footboard height of approximately 600mm, with both tops shaped similar to her cot bed. The top of the mattress height from the floor was set to 530mm and needed to be 40mm above the top of the side rail. The bottom of the side rails needed to be between 300-350mm from the floor. Finally, there needed to be three identical storage bins, on wheels and as deep as possible – these ended up being 800mm deep × 650mm wide × 260mm internal height.

Design

As is my usual approach, I created a 3D design in SketchUp (**Figs.1 & 2**), using separate layers >

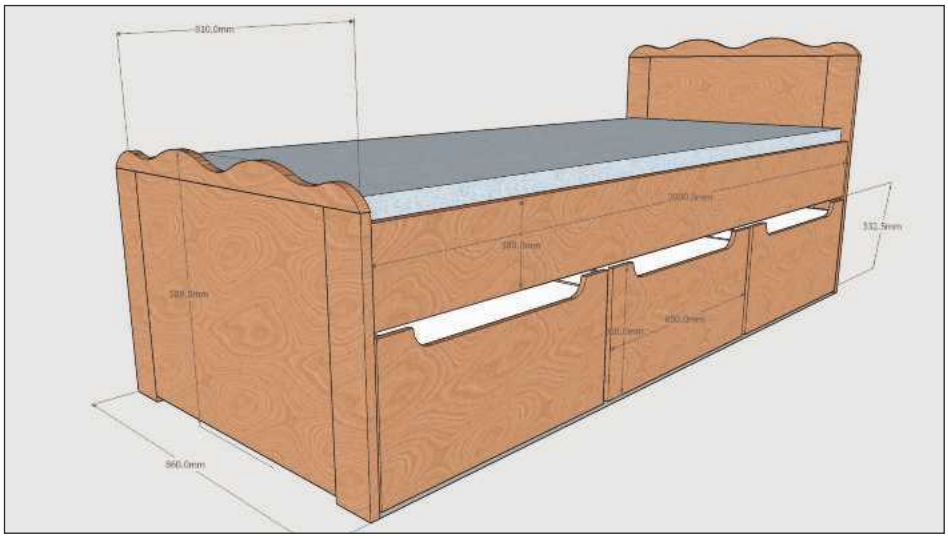


FIG 1. SketchUp image (front)

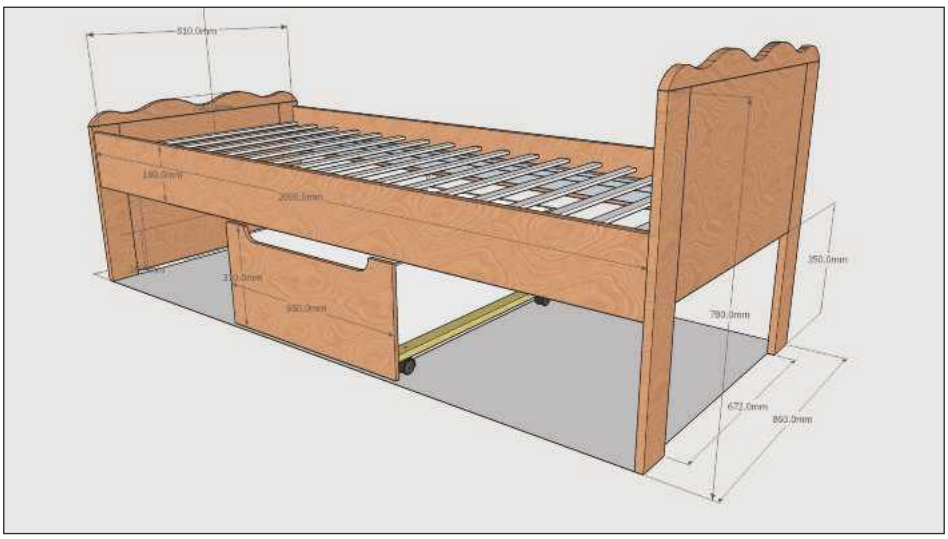


FIG 2. SketchUp image (back)

TIME TAKEN & COST

- Ignoring the initial sizing and acclimatising of the timber, the actual construction time was over two weekends, plus a few evenings for sanding and varnishing
- Approximate cost of materials – £240
- Whitewood and sheet of 12mm ply – £120 (mainly because I asked for it to be planed to 25mm, which came from ex 32mm stock)
- IKEA mattress and slats – £95
- 3 packs of Screwfix 40mm castor wheels – £7.50
- Dowel nuts and bolts – approximately £4 from eBay
- Varnish from B&Q in light oak satin – £15
- Festool Domino – best not mention that in case my wife reads this!

PIC 1. Head and footboard timbers ready to stick

PIC 2. Building up the headboard panel

PIC 3. Marking Domino positions for the leg

PIC 4. Tight Domino mortises in the panel

PIC 5. Draw dowel fitting the breadboard legs

PIC 6. Dowel holes enlarged for movement

for the main topics (headboard, footboard, frame, drawers, etc). I've uploaded the final design file to the sketchUp warehouse, details of which can be found at the end of the article. With the design constraints sorted, and the mattress/slat combination chosen (as this influenced the width of the side rails and positioning), this design was fairly straightforward as it uses rectangles.

I imported the 40mm wheel design as a model from the 3D warehouse (well, why reinvent the wheel!). In order to create the curves for the head/footboard), I referenced a photo of the cot bed and just played with the sketchUp arc and circle tools until I got somewhere close. I then overlaid a 50mm grid on this section and printed this full-size, so it could be used as a template (this grid is the only part not shown in the uploaded model as the file corrupted the views when rotated).

Materials

In order to keep costs down, the bed was constructed from local (independent) timber yard planed (to 25mm) whitewood at a standard 94mm wide (except for the side rails at 180mm), and 12mm ply for the storage unit. I use the 'Optimik' sheet material program to get the best component layout on a sheet and the timber yard accepts this and cuts the components at no extra cost. I converted the whitewood cutting list into lengths of 2.4m, when home, then marked and cut the component parts so that the best wood was used in the most visible parts (top of the headboard and tailboard). All the timber was then left in a bedroom for a few weeks to stabilise (**Pic.1**), before being lightly planed back to flat and a finished thickness of 23mm. The only hardware needed was the 4 × M6 × 20mm dowel nuts and 75mm bolts (to fit the side rails to the ends) and four sets of 40mm castors for the storage units.

Headboard & tailboard

Both the headboard and tailboard follow the same process (**Pic.2**). I chose to use my new Festool Domino jointer for all construction,

CUTTING LIST

Sort	Quantity	Description	Length (L)	Width (W)	Thickness (T)	Material	Notes
1	2	Head leg	780	94	20	Softwood	
2	1	Headboard fill	672	430	20	Softwood	
3	2	Foot leg	530	94	20	Softwood	
4	1	Footboard fill	672	515	20	Softwood	
5	2	Head/tailboard top shape	860	59	20	Softwood	Longer as these top the legs as well as the infill
6	2	Frame side	2,000	180	20	Softwood	
7	2	Slat support	2,000	40	30	Softwood	
8	3	Drawer front	650	310	12	12mm ply	
9	3	Storage back	526	263	12	12mm ply	
10	3	Storage base	800	550	12	12mm ply	
11	6	Storage side	800	263	12	12mm ply	
12	6	Castor holder	800	40	20	Softwood	
	3	Wheel packs	Screwfix 65240			£7.50	
	1	IKEA MALFORS mattress	2,000	800	120	£80	
	1	Slat rail	2,000	800	40	£15	

PIC 7. Leg mortises cut wider for movement

PIC 8. Top board fitted to headboard

PIC 9. Top shape template from 1:1 printout

but dowels or biscuits could also be used. One of the benefits of the Domino that I began to appreciate quite quickly is that it has a tight, loose and looser mortise width setting. Using the tight one on both halves of a joint and with the Domino pin registered gives an exact alignment, unlike biscuits. When jointing the boards for the panels, subsequent mortises could use the loose setting to make assembly easier as the alignment stays registered by the first tight joint.

With the headboard panel glued and trimmed to size, the legs needed to be fitted. I was concerned that the solid wood panel would move, so attached the legs using the breadboard technique normally employed on dining tables (I found the Domino method on a YouTube video). First, the positions for the Dominos were marked and cut in the panel using the 'tight' setting (**Pic.3**). The top Domino in the leg was also cut tight (**Pic.4**) (referenced from the top of the leg, which is flush with the top of the panel at this point); this formed the 'lock' and was ultimately glued. The next two mortises in the leg were cut on the loose setting and the final lower one on the widest setting. The Dominos were glued into the panel but not the leg and then dry assembled. Blind draw dowel holes were then drilled (**Pic.5**), the leg removed and the dowel holes in the Dominos elongated (**Pic.6**). Once done, the top Domino and top of the leg was glued, with dowels then fitted and glued into the panel to retain the leg, but allow the panel to move as needed (**Pic.7**). The remaining three Dominos were not glued into the leg.

The final top to the headboard was then Dominoed to the top of the legs (**Pic.8**) and panel and the shape marked from the template (**Pic.9**), cut with a jigsaw and trimmed with a router bearing-guided cutter. I only just got away with the positioning of the Domino above the leg, as the curve came very close to exposing it.

The final work on the ends is to drill the 7mm bolt hole (**Pic.10**) and two Domino slots (**Pic.11**). The bottom slot is tight to tight (the reference one), and the top slot is a tight to loose (to enable easier assembly while still preventing twist). This is a straightforward task once clearly marked and the reference defined (the position for the bottom of the side rail).

Side rail fittings

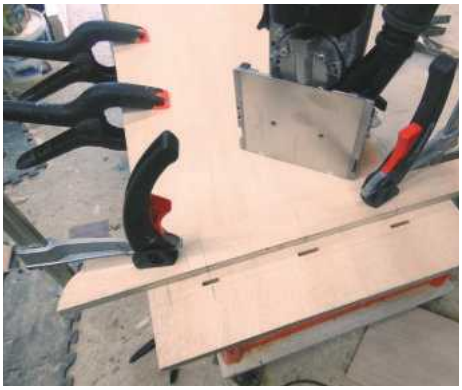
The side rails are just straight pieces of timber that require a 10mm diameter hole to be drilled for the dowel nut, a 7mm hole for the bolt from the end that accurately meets this and Domino slots aligned to those in the legs. For the nut and bolt holes I created a simple jig from scrap 63 × 38mm CLS timber and a piece of ply with a 90° angle (**Pic.12**). Using a pillar drill and a 7mm bit, an accurate hole was drilled that was centred exactly half the thickness of the side rail. This was then screwed to the ply such that the ply edge could reference the bottom of the rail. For the other end, in order to keep the same face reference, I just unscrewed the jig and reversed it. >

PIC 12. Jig for the side rail, dowel nut fitting and bolt

PIC 10. Drilling template for the leg bolt hole

PIC 11. Side rail Domino locations in leg

PIC 13. Dry fit of frame – it fitted first time!



PIC 14. Dominos for the storage box front

The thickness of the CLS gives the accuracy needed to guide the drill bit – I used a Colt 7mm pen drill, which had the length I required. The hole for the dowel nut is 10mm diameter and needs to be deep enough so that the centre is lined with the bolt centre. In my case, the timber thickness was 23mm and the dowel nut was 20mm, so the centre needed to be at 11.5mm with a hole drilled to a depth of 21.5mm. Don't buy a 25mm dowel nut for a 25mm timber unless you want to drill right through and have it exposed. Finally, the timber support for the slats is screwed on – the position is such that the mattress, when placed on the slats, ends up 40mm higher than the side rail.

The storage units

Another discovered benefit of the Domino is that the 4mm Dominos can be used in 12mm ply – making assembly straightforward once the offsets had been determined to Domino the front (**Pic.14**), as this overhangs the sides to hide the wheel rails (I just practised on scrap). I designed the storage units based on an idea I saw on Axminster Tool Centre's website within the projects section, entitled 'how to make multi-purpose storage units'.

This allows you to keep the maximum storage depth by having the wheels on side rails. I opted for 40mm wheels and threaded fitting into 'T' nuts (**Pic.17**), as I thought this gave more scope for height adjustment. I did make an error in the SketchUp design – the side rails are 50mm wide, but the wheel swivel is not centred, so the actual centre of the 'T' nut is 40mm from the edge, rather than 25mm.

With the drawers assembled it was then just a case of sanding, varnishing and delivering the bed to one very happy four-year-old who still (two months later) has to show it to visitors and says that she doesn't like it, she loves it! **GW**

PIC 15. Glue-up of box frame

PIC 16. View of wheels from base box underside

PIC 17. Close-up of wheel fitted to the support

PIC 18A. Several views...

PIC 18B. ... of the fitted storage

PIC 19. In situ with slats in place

PIC 20. With the mattress fitted

PIC 21. Headboard detail

FURTHER INFO

To see the SketchUp model for the bed, visit **https://3dwarehouse.sketchup.com** and search for *'Jessica's bed by David L'*

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FESTOOL
Tools for the toughest demands

As **John Bullar** shows here, for a small workshop where most of the work is carried out using hand tools, a bandsaw may be the only machine that needs buying

The beauty of bandsaws

In the first part of this new series I am going to tell you about my favourite workshop machine – the bandsaw. While bandsaws vary in height from small bench-top machines to massive floor-standing versions, and some have an extra wheel to widen the mouth, they are all based on the same principle. This 200-year-old invention more than justifies the modest floor space it occupies in even the smallest workshop.

PIC 1. The bandsaw is ideal for repeatedly cutting straight parallel-sided pieces, such as these large tenons

Multipurpose machine

The bandsaw is such a versatile machine, capable of rip-sawing large sections of wood of any length as well as cross-cutting shorter pieces. It can cut curves, accurate angles and even make quick work of some precision joints (**Pic.1**). Nearly every kind of furniture maker and most general woodworkers find the bandsaw useful on a daily basis, although which model you

PIC 2. This treadle-operated bandsaw was built by a German village craftsman about 150 years ago while the first ever bandsaw was patented in England over 200 years ago

PIC 3. The toothed steel strip, which forms the saw blade, is welded together as a continuous band

PIC 4. Changing the blade on a modern bandsaw with the power isolated, the covers opened and the upper wheel lowered to remove tension

PIC 5. The blade is secured above and below the slotted table by a wheel each side and one behind the blade

PIC 6. Cool blocks are low friction guides that provide an alternative to roller bearings

PIC 7. One of the main uses of the bandsaw is for cutting out curved and angled components

PIC 8. The bandsaw table can be tilted for making slanted cuts

go for will depend on your budget, space, and the type of work you are planning.

How it works

The bandsaw consists of a frame supporting a pair of vertically aligned wheels, which can clearly be seen on the antique machine shown in **Pic.2**. The blade is a band of steel wrapped around the wheels.

On a modern machine all moving parts, except a short section of blade, are enclosed for safety (**Pic.3**). An induction-motor drives the lower wheel through a V belt. The wheels have hard, flat rubber tyres and a steel blade runs between them as an endless loop. As the wheels turn, the vertical section of blade is drawn down through a slot in the table, and the table is horizontal, usually made from cast-iron. Fixed below the table are three guides: one behind the blade and one to each side of it, keeping the blade running true. Above the table is a similar set of guides mounted on an adjustable guidepost; this allows the upper guides to be raised and lowered to accommodate different thicknesses of wood.

Blade guides

Guides are either of the roller bearing or friction type. Roller bearings run more smoothly when first set up, but tend to accumulate sawdust on the blade rather than scraping it off. Older machines used metal 'cool block' or composite materials for friction guides (**Pic.6**). Some modern machines have friction guides made from ceramic materials that are extremely hard-wearing, and I find these best overall.

Getting good results

Feed timber into the blade slowly, listening to the sound – it should be smooth and steady, possibly with a tick as the weld passes the guides. If this sound increases it may indicate a kink in the blade or a crack.

If the blade drifts consistently to one side rather than following a straight line, it may be that the guides are loose, thus allowing the blade to twist to one side or there may be uneven set in the teeth. This can easily occur after running the blade through incorrectly adjusted guides.

Cutting curves

The most obvious advantage of the bandsaw over a circular saw is that it can cut curves (**Pic.7**), which is ideal for much furniture work such as chair-making. Any bandsaw can be fitted with blades of different widths, provided their length is correct. Narrow blades are needed for cutting tight curves, so the blade will not jam, while wider blades are more robust and easier to keep on a straight line.

Cutting angles

The wood must be firmly supported by the table at all times to prevent the blade snatching it. To enable wood to be presented to the blade at an angle, the table is normally fitted with a tilt mechanism, which allows it to be adjusted up to 45° or so (**Pic.8**).

Deep cuts

Even quite small bandsaws can be used to make surprisingly deep cuts, which is useful for shaping curved components (**Pic.9**) or slicing wood for laminating or veneering (**Pic.10**). A tall-sided fence alongside the blade must be securely mounted to ensure the wood cuts to an even thickness. >

PIC 9. With a length of blade exposed the bandsaw can cut deep into the wood, such as when making wide curved components

Deep cutting is a time when extra patience is needed as the fine blade has a lot of waste to remove. Skip-tooth blades, where every second tooth is missing, are specially designed to allow larger amounts of sawdust to be removed from a deep kerf.

Bandsawn slot joints

The slot joint, like a simplified mortise & tenon, is sometimes described as a type of bridle joint. It has a peg, one third the thickness of the wood engaged in a slot of the same thickness (**Pic.11**). The joint is made entirely on a bandsaw with the aid of a high fence, two thin shims of overall blade thickness and two thick shims of peg thickness.

The fence is clamped one wood thickness plus one thin shim away from the blade. The first side of the peg is cut with a single thick shim while the second side is cut with all four shims (**Pic.12**). The first side of the socket is cut with one thick and one thin shim while the second is cut with two thick and one thin shim. With the shoulders sawn off, the peg and the socket waste nibbled away, again on the bandsaw, the joint should slide snugly together.

Bandsawn dovetails

Bandsawn dovetails are properly shaped through-dovetails indistinguishable from hand-cut, unlike the rounded back versions produced by most router jigs.

Tails are marked out in the conventional way. The principle of cutting these is to use a wedge that slides along the fence, which holds the tails at the correct angle (**Pic.13**). The wedge is then reversed to cut the other side of each tail. Socket waste is nibbled out of the bandsaw within a millimetre of the shoulder line, then chopped to the line with a chisel. The sides of the dovetail pins are then bandsawn on a wedge-shaped platform supported on the table, again reversing the wedge for the other sides of the pins (**Pic.14**). Once you have established a routine, the bandsaw technique is particularly good for repeating large numbers of similar joints.

Careful use

Bandsaws have a reputation for being well behaved machines, far less scary than many, but even bandsaws have dangers. You must avoid leaving a length of blade exposed or cutting unsupported material not laid flat on the table; this will easily jam on the blade, which can snatch violently. Bandsaws cut slower than large circular saws so they need patience. In the long run, it takes far less time to cut slowly and accurately, thus preserving blade life, rather than forcing the timber, producing a rough cut, and possibly requiring an extra blade change as a result.

Conclusions

I have no hesitation in saying the first machine any furniture maker should buy is a bandsaw. In fact, for a small workshop where most of the work is done with hand tools, a bandsaw may be the only machine that needs buying. **GW**

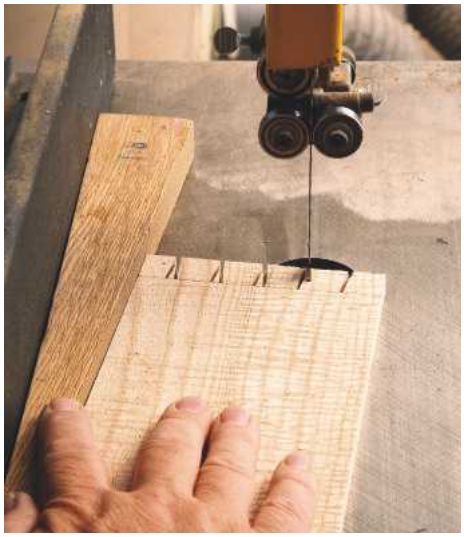
NEXT TIME

In *GW*325, our Timber Special, John will be taking a closer look at the topic of small-scale timber conversion

PIC 10. With a high fence mounted parallel to the blade and a millimetre or so away, the bandsaw can cut thin sheets of hardwood for veneering or laminating

PIC 11. After spending some time setting up, the slot or 'bridle' joint is quickly repeated with four shims on the bandsaw and fits together snugly every time

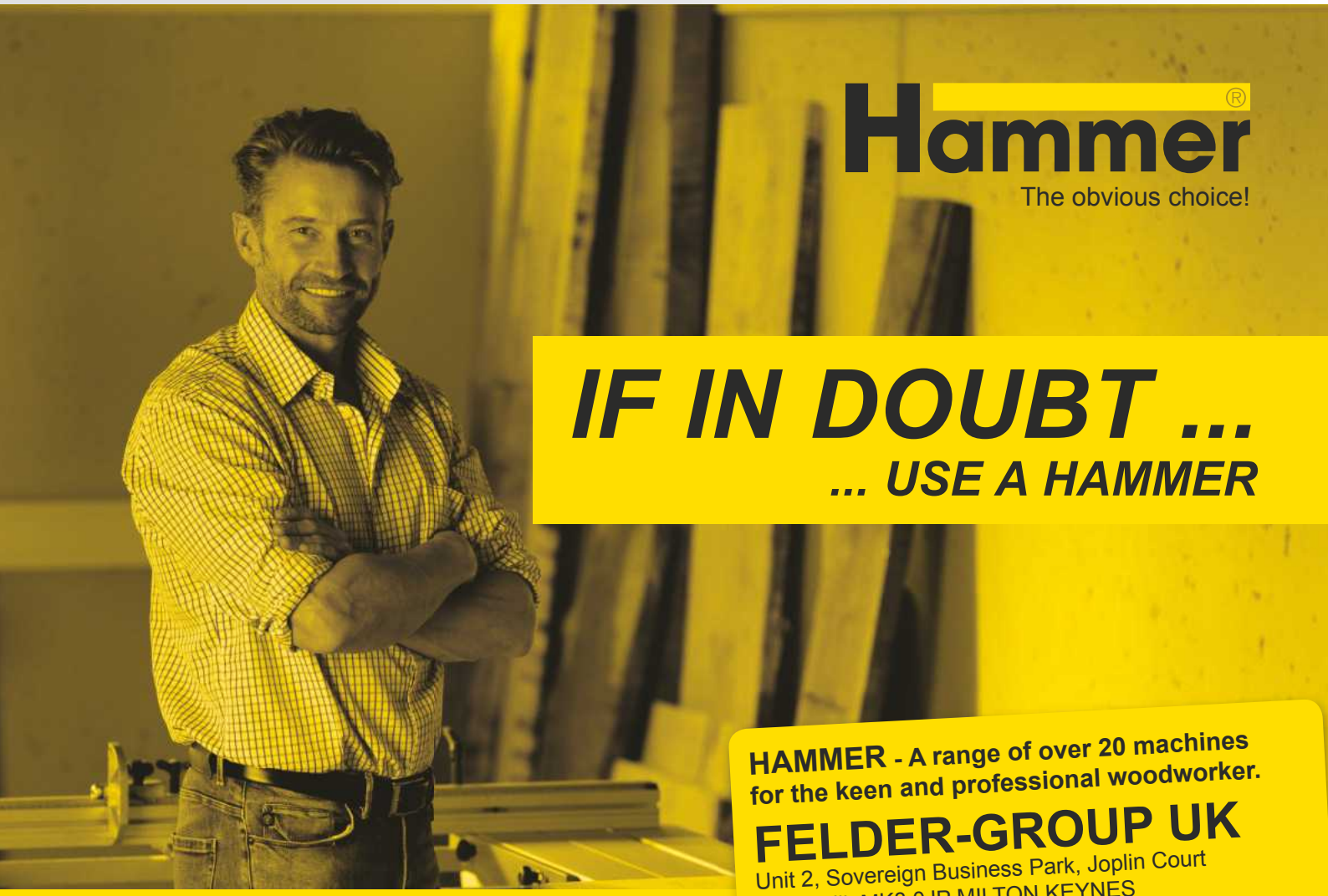
PIC 12. A set of two thin shims made from card and two thick made from MDF are used here to rip saw the second side of the slot



PIC 13. The tails of a dovetail joint are sawn with a wedge between the wood and the fence. The wedge is turned around to saw the other sides of the tails

PIC 14. A wedge-sectioned block is used to support the wood while cutting the pins of a dovetail joint

PIC 15. The tails and pins of a dovetail joint cut on the bandsaw are slotted together



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Knives at dawn

Bastian Bonhoeffer's warrior knife block will certainly make a statement in any kitchen

Knife blocks are great – just grab the knife you need without searching through your drawers, then start cutting. I got my basic inspiration for this project from an article entitled 'knife block' by Christian Knuell, which reminded me of the so-called 'Voodoo Knife Block' (just type this into Google images.) However, I wanted to improve this design so it would look more realistic and also to increase the number of knives it could hold. The resulting knife block resembles a Spartan-like warrior and can hold 15 knives of various sizes.

MATERIALS & TOOLS REQUIRED

MATERIALS

- 6 & 12mm plywood (any other type of wood is fine to use as well)
- Spray adhesive
- Wood glue
- Lead beads to fill the base (nails, nuts or any other heavy materials will also do the trick)
- Range of abrasives
- Double-sided adhesive tape
- 6mm diameter magnet

TOOLS

- Scrollsaw (or you could use a jigsaw, CNC mill, etc.)
- Power drill
- Power tool fitted with a drum sanding kit (although this can also be accomplished with other tools)

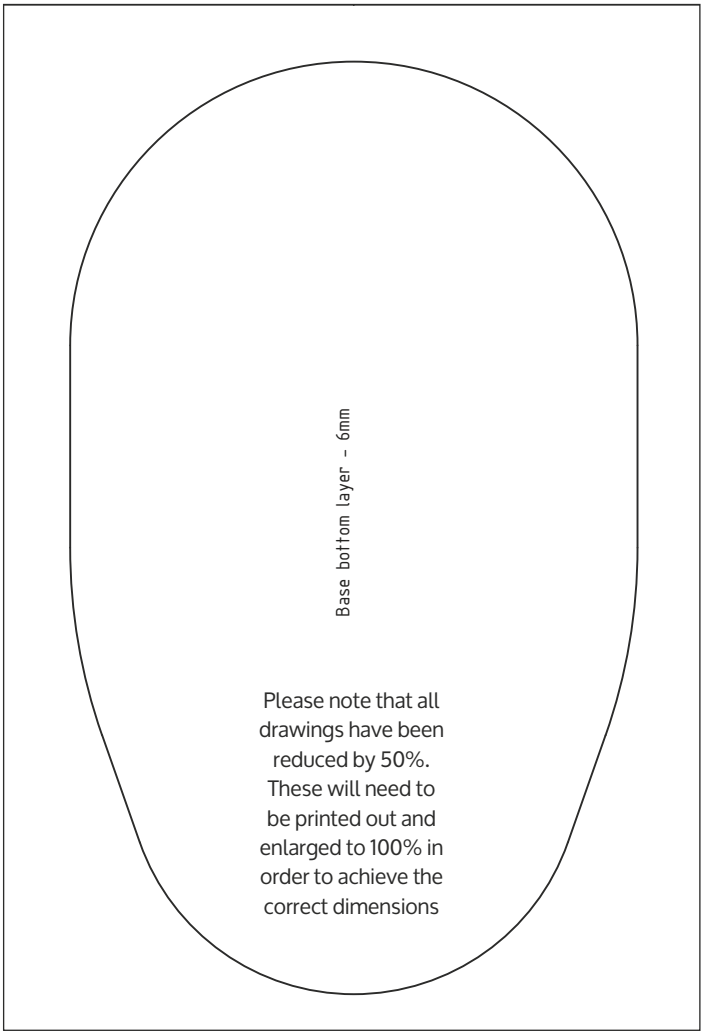
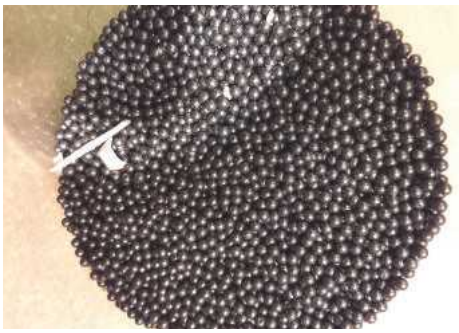


FIG 1. Bottom base layer

PIC 1. The construction of the base, with an area to house the lead beads



PIC 2. The lead beads in the base will aid stability

PIC 3. The base, once glued up

Making the base

Since the knife block is designed to hold a high number of knives, I wanted the base to be heavy in order to achieve good stability. Therefore, the base will be filled with lead beads (**Pic.2**) (or any other heavy objects you have available, such as nails or nuts). Follow or photocopy the drawings shown below (**Figs.1, 2 & 3**) for the base and use spray adhesive to attach them to 6mm (bottom and top layer) and 12mm (middle layer) plywood. Next, use a scrollsaw or similar to cut out the three parts. Glue the bottom layer and the middle layer together, and once dry, pour the lead beads into the hollow space and glue on the top layer. Once everything is dry, sand all sides of the base until you achieve a satisfactory finish.

Making the warrior

To make the warrior, photocopy the drawings shown overleaf and use spray adhesive to attach them to the 6mm (two side layers) and 12mm (middle layer) plywood.

Since the warrior fills a whole A4 page, it is possible that your printer won't be able to print the drawing accurately, in which case the template is also shown in two parts (**Figs.5 & 6**). Print out both drawings and first attach one half onto your piece of wood, then cut some holes in the second half of the drawing. Line these holes up so they correspond with the overlapping section on both drawings; this will allow you to accurately align the second half. The instructions are shown in **Fig.4**, then use a scrollsaw to cut out the three parts. You can now glue all three layers together but be careful to ensure all layers are properly aligned (**Pic.4**). During the gluing process, also check that all parts of the warrior are adequately clamped together (legs, arms, head, etc). In the photos, you will notice that the hands of the warrior look different to those in **Figs.4, 5 & 6**. This is because I made the design on the fly, but the final result can be seen in the drawings provided here.

Next, use a 5mm bit to drill a hole into the middle layer just above the head of the warrior (see **Figs.4 & 5**), but ensure to drill only halfway through. You can then fit the 6mm magnet into the hole (**Pic.7**). It should be a tight fit. You can use a vice or similar tool to press the magnet into >

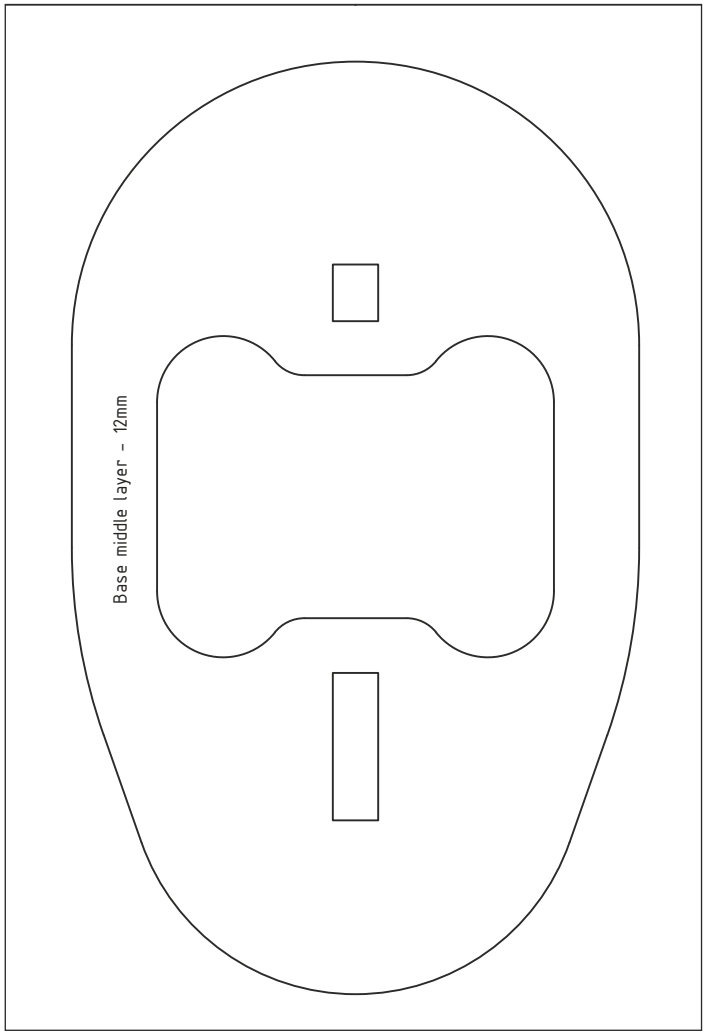


FIG 2. Middle base layer

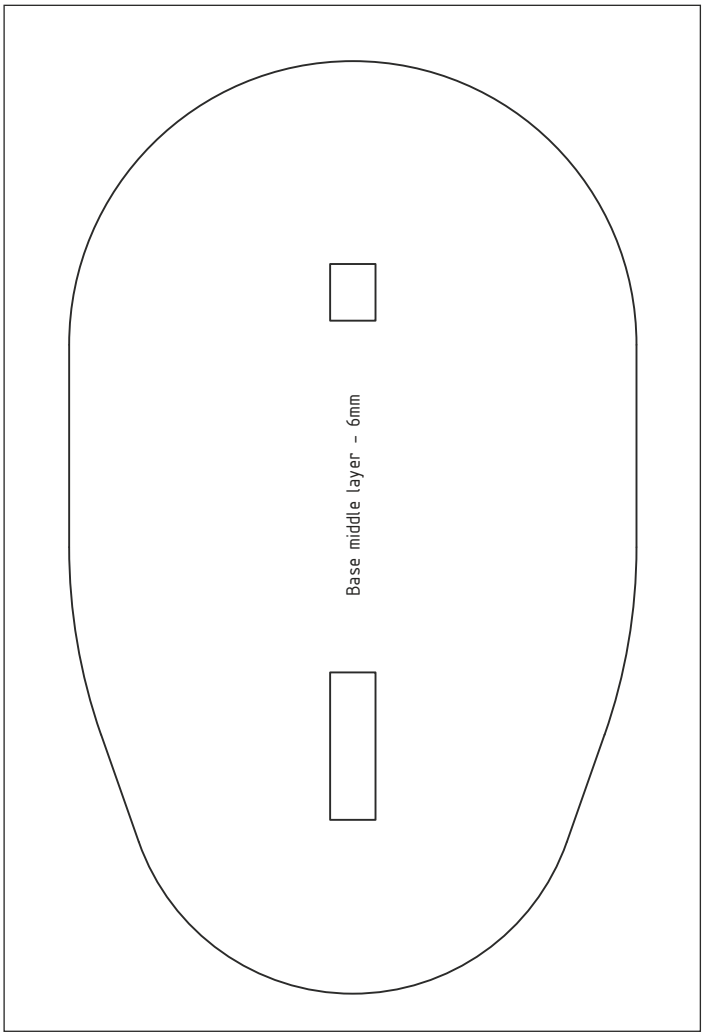


FIG 3. Top base layer

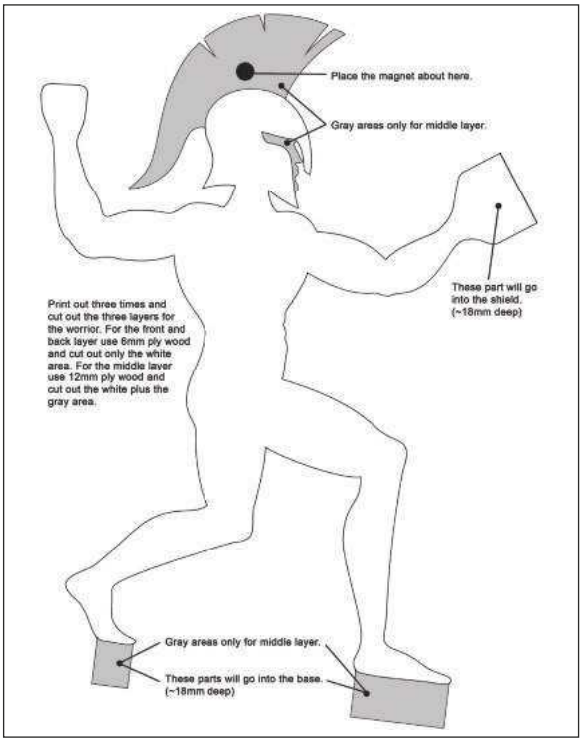


FIG 4. Warrior template explained

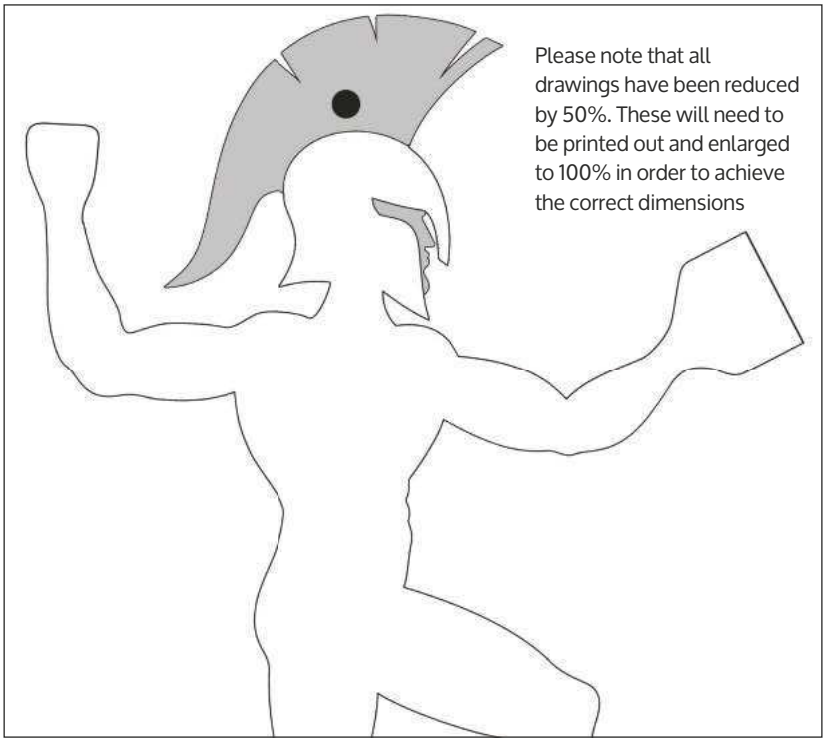


FIG 5. Warrior template – part 1

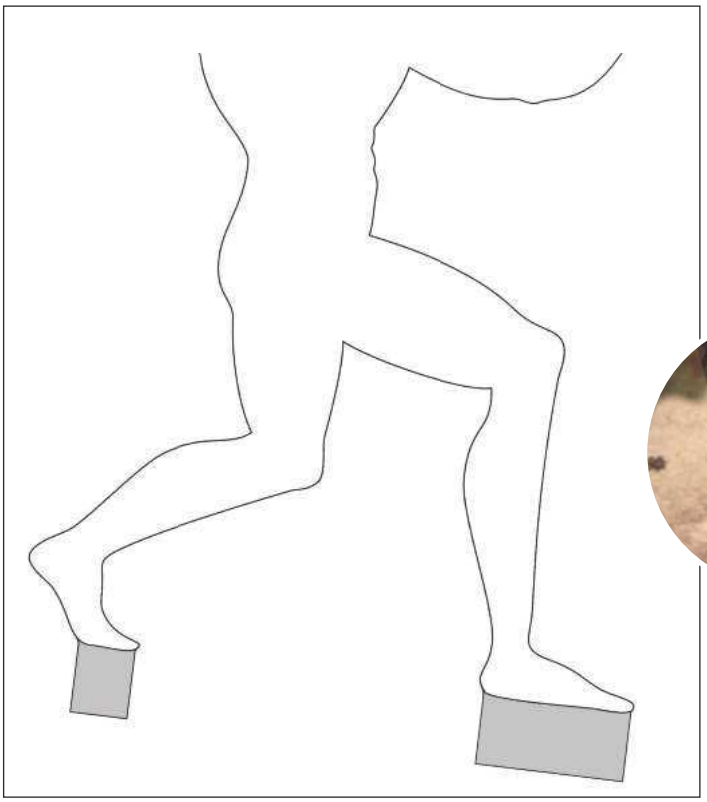


FIG 6. Warrior template – part 2

PIC 4. The warrior, once all layers are glued up

the hole. If you decide to use hardwood, you'll most likely have to use a 6mm drill for this step. If necessary, use glue to fix the magnet in place.

Finally, use a power tool with a drum sanding kit fitted to shape the warrior's hand. Start working from the side where you placed the magnet, sanding down towards the middle of the wood until there is roughly 12mm thickness remaining (**Pic.8**). Depending on the shape of the knife handle you plan to place into the warrior's hand, you can sand it accordingly to ensure a secure fit. When I finished this part on my knife block, I noticed that the other hand, which will hold the 'shield', was very thin. I therefore decided to drill a 4mm hole into the arm until I reached the elbow. I then placed a 4mm brass rod into the hole (**Pic.9**) and glued it in place, which acts to strengthen the wrist section. In the drawing shown here, I made the wrist thicker, so it shouldn't be a problem when you come to make yours, but if you don't trust the wood you're using, make the wrist even thicker.

Sanding the warrior

If a lot of glue leaks out of the sides during gluing, you might want to remove the dried glue with a knife before you start the sanding process (**Pic.10**). Sanding down the sides of the warrior can be a pain, as you want to progress carefully in order to preserve all details. However, there is a nice trick you can use. There are special sanding strips available for your scrollsaw – Google 'sanding strips for a scrollsaw'. These are quite expensive but as an alternative, you can make your own.

PIC 5. A 5mm hole needs to be drilled halfway into the head (refer to **Fig.5** to see exact location)

Apply double-sided adhesive tape onto the back of a piece of abrasive (**Pic.12**). Taking a wide scrollsaw blade, cut off a strip of the abrasive with the adhesive tape attached, with a width of roughly six times that of the scrollsaw blade (**Pic.13**). Fold the strip along the middle and then remove the back of the adhesive tape. Place the scrollsaw blade with the flat side into the middle of the abrasive and fold again (**Pic.14**).

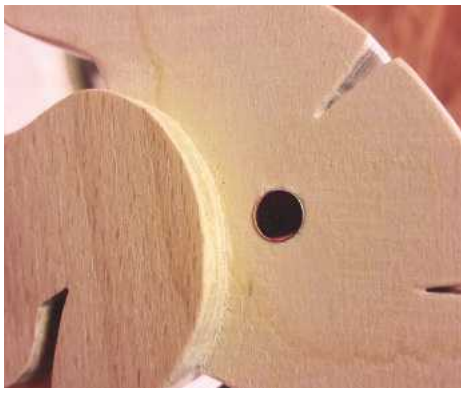
You can now mount the self-made sanding strip in your scrollsaw (**Pic.15**) and sand down the sides of the warrior until you achieve a satisfactory finish (**Pic.16**). You will probably have to replace the abrasive on the scrollsaw blade a few times during this process.

PIC 6. A 6mm magnet needs to be fitted into the recess drilled in the head

Adjustments for your knives

The good thing about this knife block is that it looks really effective. The one negative is that, unfortunately, it is not suited to all knives. When the knife blade is heavier than the handle, or if both parts are balanced (as they should be), the knife will sit nicely in the knife block. However, when the knife handle is heavier than the knife blade, the knife tends to fall out of the block. it is therefore highly recommended that you adjust this final part for your knives.

Focus on the knives where the handle is heavier than the blade. In such circumstances, I found it best if the slits in the shield are around 1-2mm longer than the height of the blade. For example, I have some knives with a blade height of around 23mm, and for these I made the slits 25mm long. Photocopy and print out **Fig.7**, then take a pen and adjust the length of the knife slits according to what you think is best for your knives.



PIC 7. The 6mm magnet in place

Making the shield

Photocopy and print out **Figs.8 & 9** and use spray adhesive to attach them to 6mm (front and back layer) and 12mm (middle layer) plywood. If you adjusted this part for your knives in the previous step, use the adjusted drawing for the front layer. Next, use a scrollsaw to cut out the three parts, but ensure not to remove the drawing from the front layer after cutting.

Glue all three pieces together and be careful to correctly align the three layers. After drying, sand all sides of the shield until satisfactory. Use a 3mm drill bit to drill holes at each end of each of the slits on the front layer (**Pic.20**). Ensure to stay just within the black rectangle for each and ensure to drill at a 90° angle. For the two biggest slits in the middle, use a 4mm drill bit.

Next, use a scrollsaw to cut out the slits, by cutting along the lines and connecting the two holes at the end of each slit (**Pic.21**). You can then sand the insides of each of the slits using >

PIC 8. The warrior's hand needs to be shaped to ensure it properly accepts the knife handle you intend to place in it

PIC 9. To make the second hand stronger, I drilled a 4mm hole and inserted a 4mm brass rod to strengthen it

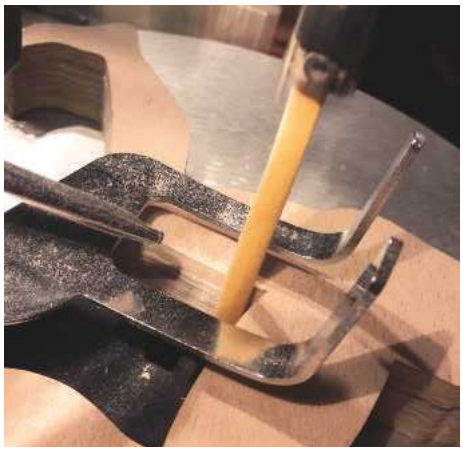
PIC 10. If a lot of glue leaks out of the sides during gluing, you may want to remove the dried glue with a knife before you start the sanding process

PIC 11. The adhesive tape, scrollsaw blade and abrasive sheet

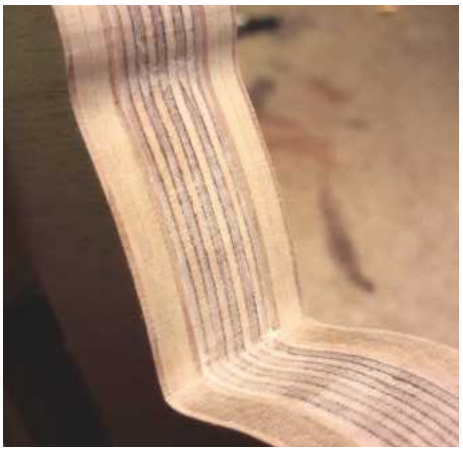
PIC 12. Apply double-sided adhesive tape onto the back of a piece of abrasive

PIC 13. Taking a wide scrollsaw blade, cut off a strip of the abrasive with the adhesive tape attached, with a width of roughly six times that of the scrollsaw blade

PIC 14. Fold the strip along the middle and then remove the back of the adhesive tape. Place the scrollsaw blade with the flat side into the middle of the abrasive and fold again



PIC 15. You can now mount the self-made sanding strip in your scrollsaw and sand down the sides of the warrior...



PIC 16. ... until you achieve a satisfactory finish

PIC 17. Here you can see that this knife is well balanced

PIC 18. Here you can see that the knife handle is heavier than the knife blade

PIC 19. The slit length has been adjusted for this knife

Please note that all drawings have been reduced by 50%. These will need to be printed out and enlarged to 100% in order to achieve the correct dimensions

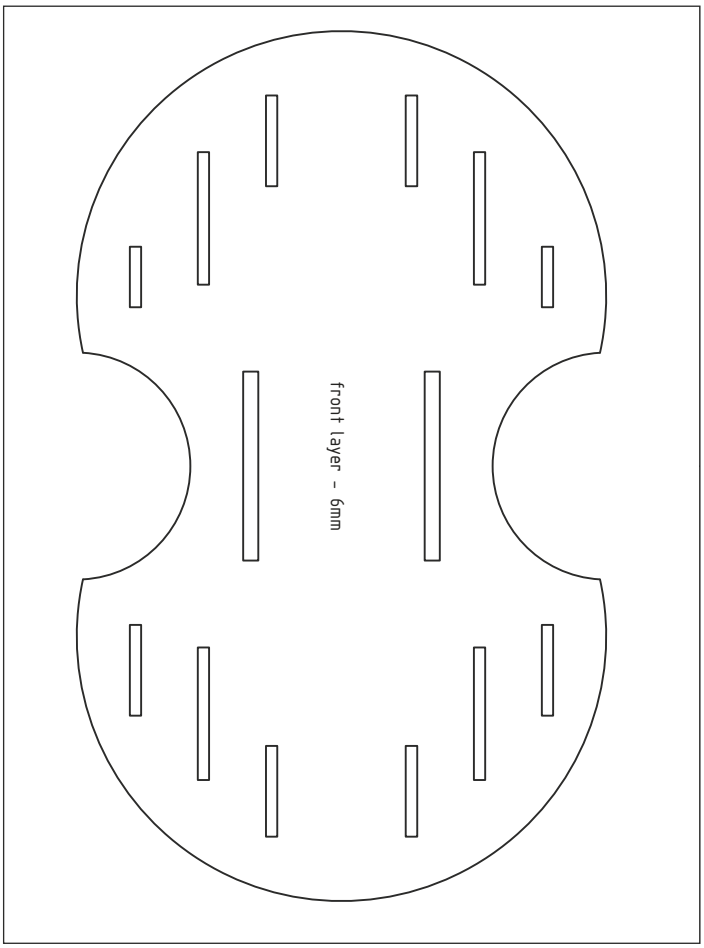


FIG 7. Shield – front layer

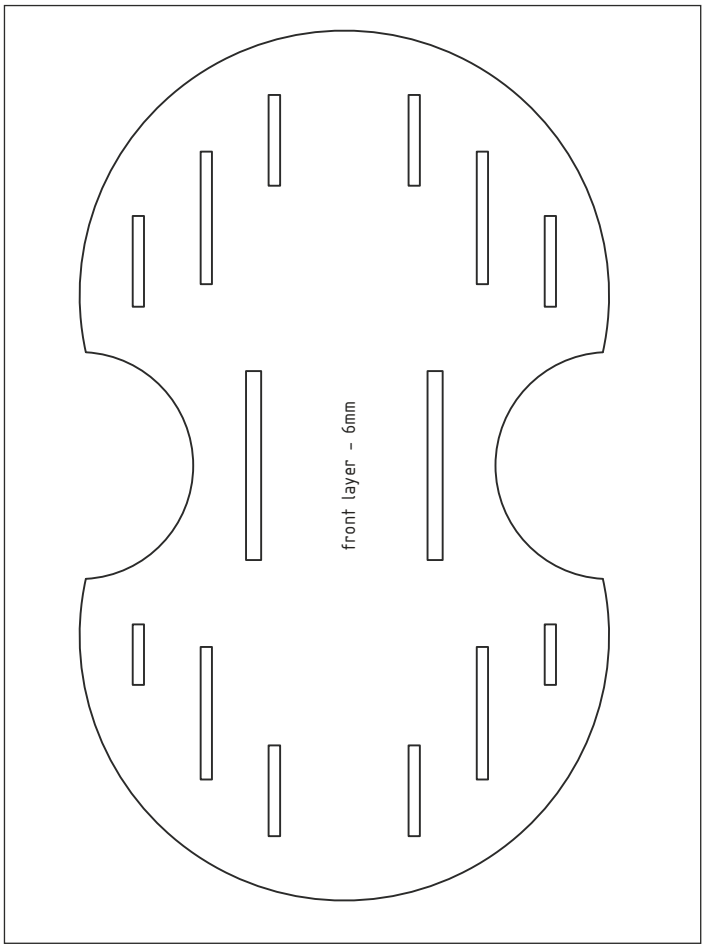


FIG 8. Shield – front layer

the self-made sanding strips for your scrollsaw or by folding some abrasive and pulling it back and forth through the slits. You also need to lightly sand their edges.

Assembling the knife block

Once you've completed the base, warrior and the shield, double-check again to make sure everything is sanded properly. I also recommend slightly sanding all the edges to prevent splintering later on. You now need to check to make sure all parts fit together; if not, continue sanding/cutting until all parts fit together nicely. You can then glue the warrior onto the base (**Pic.22**), ensuring to align the parts at a 90° angle. Once dry, you can then glue the shield to the warrior (**Pic.23**).

Applying a finish

I initially left my knife block untreated as I liked the look of the pure wood; however, I've since received quite a bit of feedback suggesting that applying a finish would allow for increased durability. Quite a few people suggested I should use vegetable oil (linseed oil) and others said mineral oil. I couldn't decide which one to choose, but in the end I went for a food-safe worktop oil from Poliboy, but there's also a similar one available from Osmo. Interestingly, this is a mixture of high quality linseed and mineral oil. Additionally, it contains some additives that are supposed to further enhance its performance, and so far, I am completely satisfied with this oil finish. To apply the finish, pour the oil over the knife block and use a soft cloth to distribute it so that it covers all surfaces. Let it sit for a few minutes so the wood can absorb the oil, then use a cloth to remove the excess and leave it to fully dry for about a day. You can repeat this process to apply multiple layers of oil, which will help to further increase the durability of your knife block. I've applied two layers so far. Since I used two different kinds of wood (birch for the middle layer and beech for the side layers), the resulting colour after applying the finish is different. This gives a nice effect and helps to make the face of the warrior and the crest on the helmet a bit brighter (**Pic.24**). Now you're finished you can equip the warrior with your knives. Enjoy! **GW**

PIC 20. Use a 3mm drill bit to drill holes at each end of each of the slits on the front layer

PIC 21. Use a scrollsaw to cut out the slits, by cutting along the lines and connecting the two holes at the end of each slit

PIC 22. The warrior once glued onto the base

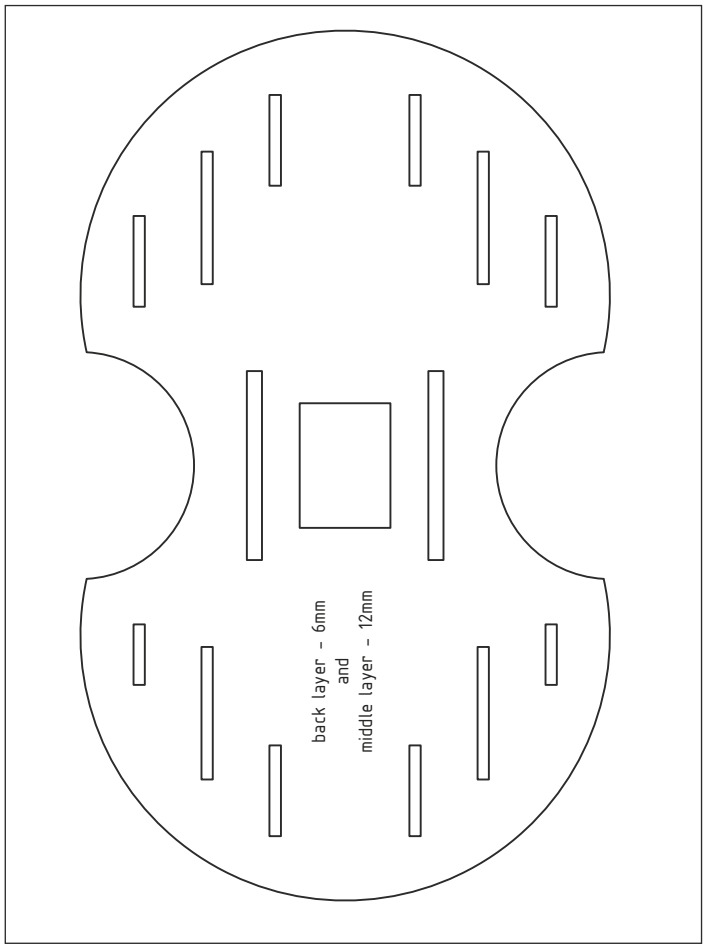


FIG 9. Shield – mid & back layer

PIC 23. Once dry, you can glue the shield to the warrior

PIC 24. The contrast in colour between the different woods used

PIC 25. The completed warrior knife block in use

Demi lune table

Rhys Gillard's stunning sycamore demi lune table features an oak veneer fan top. Designed to hug a wall with no corners to bump into, this piece is ideal for narrow hallways or around the edge of a room

This table started with a desire for a lighter modern take on a Georgian style and aesthetics. Beginning with a full-size drawing on MDF the proportions can be finessed without expensive mistakes and once the design is finalised, it's an easy step to measure up the timber required.

The table top is a pippy oak veneer with an oak balance veneer pressed onto a birch ply substrate; the fan layout of the top was aided with the use of mirrors to visualise the finished look. "Using the balance veneer as practice, the veneer was cut into wedges, labelled and the edges shot," says Rhys. "By turning over alternate wedges the grain is bookmatched all round."

Both veneers were pressed in the same day and a groove routed into the curved edge to accept 4mm ply tongues. The outside edge was cut from a single sycamore board, cut into thirds and joined using Dominos. This was then shaped using a router on a trammel bar before a groove was cut into the inside edge to match the veneered ply top. An inlay straddles the joint to hide any discrepancies.

The curved sub-frame was formed in a vacuum bag using flexi-ply and aero ply; this was then edged before being covered in ripple sycamore veneer. Table legs were tapered in a thicknesser and cleaned up with a hand plane, and the curved sub-frame was then attached to the legs using Dominos before the top was attached using buttons. **GW**

A pair of mirrors were used to visualise the fan design before any veneer was cut

Shooting the balance veneers using a finely-set hand plane

"Using the balance veneer as practice, the veneer was cut into wedges, labelled and the edges shot"

Rhys Gillard – fine furniture maker

RG FINE FURNITURE

Rhys' passion for creating and building started at an early age with the receipt of a small set of woodworking tools at the age of five. This first led to a career building theatrical scenery for numerous theatre productions before training at Robinson House Studio, which has a reputation for producing some of the most distinctive and highly sought after bespoke furniture in the world, as well as training some of the most exciting new international furniture makers.

From his workshop in Bristol, Rhys designs and handcrafts unique, personal pieces of bespoke furniture for his clients, with each piece produced being individually tailored to their personal requirements.

Rhys starts the construction of each piece of furniture with careful selection of ethically sourced exotic timber and veneers, or sustainably grown local hardwood. The results of this process are pieces of furniture that reflect the individual who commissioned the piece and helped in its design and development, which brings delight to the client both visually and in its use. To find out more about Rhys and the stunning pieces he makes, see **www.rgfinefurniture.co.uk**

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Question: **What percentage faster does this handsaw cut when compared to the previous double ground version?**

Winners will be randomly drawn from all correct entries. The closing date is **10 November 2017**

Only one entry per person; multiple entries will be discarded. Employees of MyTimeMedia Ltd, IRWIN Tools and Rave Communications are not eligible to enter this competition

Dealing with & understanding wood shrinkage & movement

From fencing to fine furniture, wood shrinkage and movement can have a big impact on the outcome of our projects. The question is where does that shrinkage and movement occur and how can we design our projects to limit its effect? **Peter Bishop** investigates

We've talked about how timber is hydroscopic in a previous article, its ability to give off and take on moisture, and here we're going to see how that might impact on our designs of furniture and other solid wood-related projects. The first part of that understanding is to see how the effect of drying can change shape through shrinkage.

Because wood is structured from a series of, simplistically, cylindrical cells, which, in the main run from the top to the bottom of the tree, there is little shrinkage in the length. Occasionally there will be more but this is only when the grain of the wood is at angles to the length. So, imagine a tube with points at each end as a typical cell. These will not shrink in the length but will in diameter. The amount of this latter shrinkage will be determined by the other cells around them. Those which have the biggest impact are the ones that run from the centre to the outside of the trunk. In oak, for example, you can spot these cells by the 'flower' figure that is displayed when the wood is quarter-cut. These radial cells hold back the vertical ones so that there is less shrinkage in that direction. This imbalance of shrinkage causes the movement that changes the shape of the cut wood.

What we have determined here is that wood does not generally shrink in its length and will shrink less in thickness or width if quarter-cut.

Laying out timber for furniture making

From this we can get a better understanding that, as a result of the drying process, wood will change size and shape. A fair proportion of this will be attributed to shrinkage and

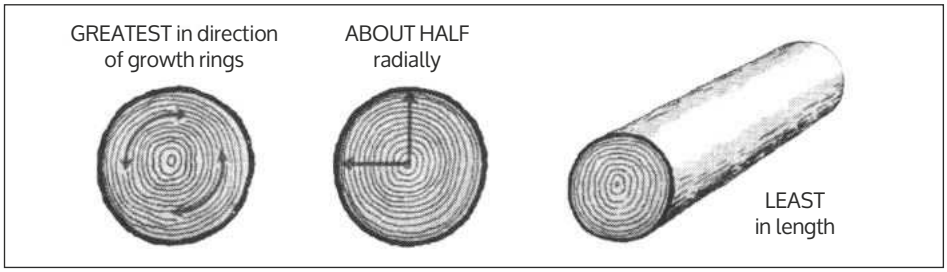

FIG 1. The way in which wood shrinks

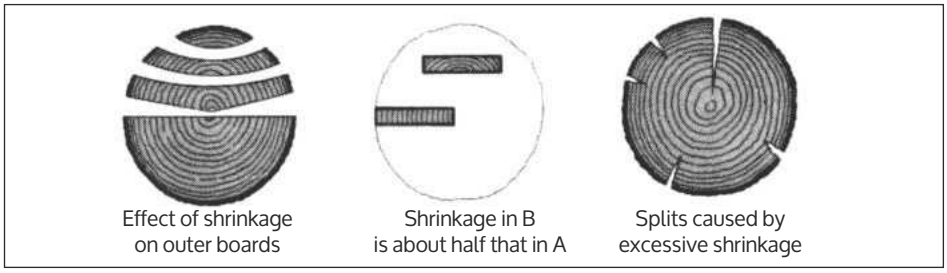

FIG 2. Basic shrinkage in the log

some to movement due to stresses set up in the wood during drying.

When designing, jointing and making wood products these influences should, if at all possible, be taken into account. Before work starts we need to be as confident as we can that further movement in the finished structure will be minimised. A review of how wood moves in relation to where it was cut from the log is helpful.

To go along with this we also find that planks will twist, warp and bow out of true as they dry. Where this is too pronounced, then it's probably best to use these badly affected pieces for shorter lengths. If the distortion is not too bad, then the preparation process should flatten and straighten the components into usable pieces. I would still be mindful that a piece I've had to correct, so to speak, should be avoided when making, say, the top of a table. It's best to always go for the 'good' stuff here if you can.

Design has evolved over many years to make allowances for movement in wood. Table tops are a prime example of how we can minimise the potential effect of the above factors.

The first thing to do is to select some prime, quartersawn pieces for the top if you can. This may not always be possible and plain-sawn stuff has to be used. In this case the grain orientation of each piece should be alternated; this will avoid too much movement in one or other surface direction. Look at the end of each piece and lay out with the curve of the end-grain alternated.

If you've been unable to fully straighten your pieces, then you'll also need to consider how they sit side by side. Try to avoid gaps at the ends of joints; these will always be trying to move apart. Of course, as we've already discussed, the most stable pieces are quartersawn material so grab some of that if you can.

Full length planks simply joined together is an ideal way to make your top. However, sometimes it's thought that if you put a strap across each end this will stop the top shrinking – it won't! All that will happen is that the main boards will shrink in width and the straps, because, as we know, wood shrinks very little in length, will stay the same length. They'll then stick out each side or, if they hold the outer pieces in place, splits will appear towards the middle ends of the table top.

That same top should not be simply screwed onto the under frame – you'll be heading for trouble if you do. Because the screws hold the wood securely in place, they do not allow it to move. So if it dries and shrinks, or gets damp and expands, then those screws will cause the wood to split. The answer here is to use 'buttons' that hold the top down firmly but allow it to move if it wants to.

Here's another example: drawers should be made so that there are grooves in the front and both sides to take the bottom piece. The back of the drawer should allow the bottom to slide over it and into the grooves on the other three sides. It should also protrude slightly, ready for fixing.

The drawer bottom should not then be permanently fixed with glue or nails to these grooved sides but only across the back one. Providing the grooves are deep enough, any further shrinkage of the bottom will be hidden within them. The grooves into which the bottoms slot should allow for further movement in both directions if required. If fixed in place, solid wood drawer bottoms will possibly shrink and crack leaving unsightly gaps. If you happen to have a very wide drawer to make, then it's best to fit the bottom in two pieces. A double rebated strip will cover the joint and can be fixed into the back side of the front. >

T&G spacing

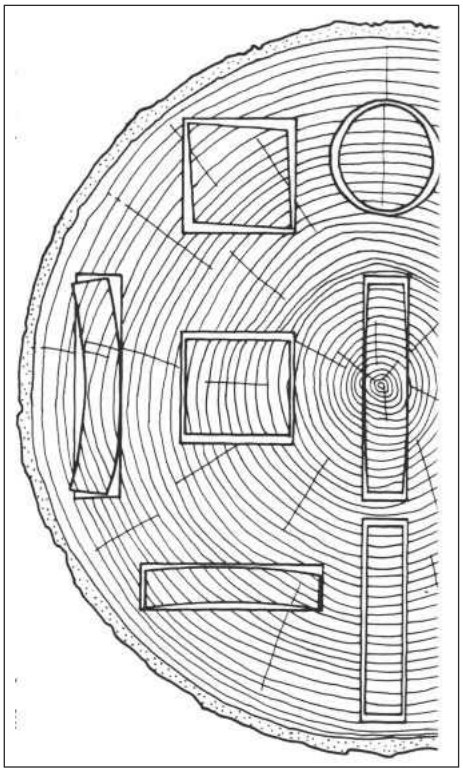

FIG 3. How different cuts will move

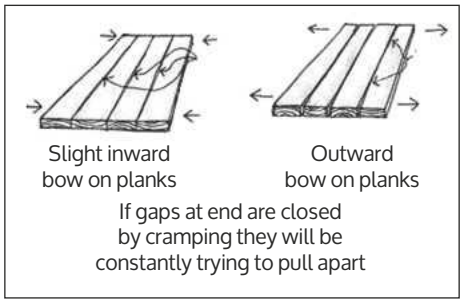

FIG 4. Basics of laying out a table top

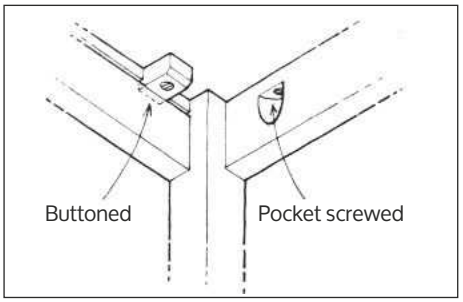

FIG 5. Button versus pocket

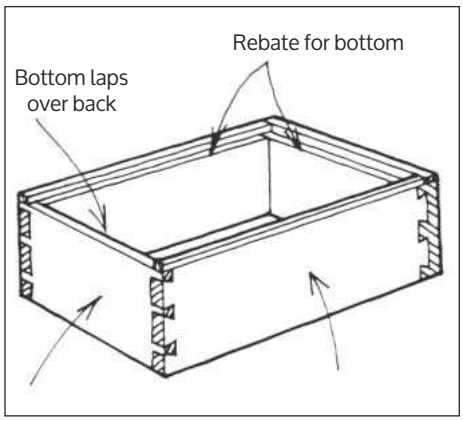

FIG 6. Drawer design

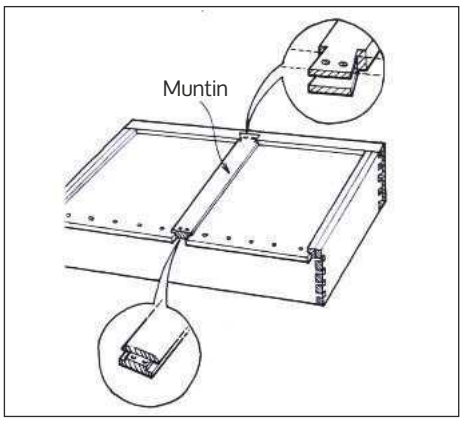

FIG 7. Wide drawer bottoms

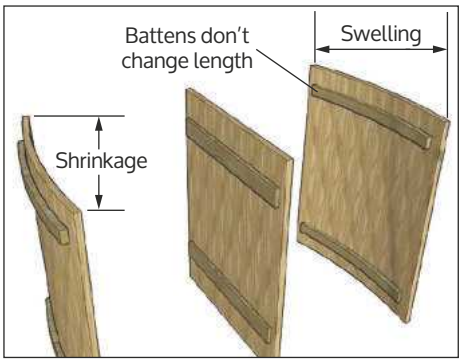

FIG 8. T&G doors and similar

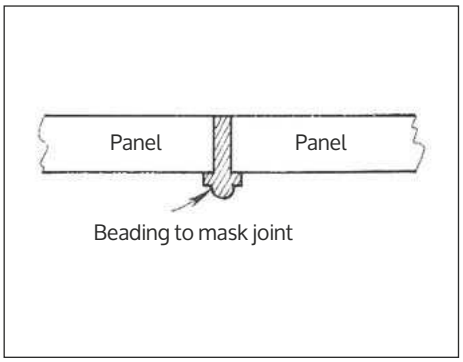

FIG 9. Cover bead

Fixing feather-edged boards

Making up doors from T&G material can cause problems. A simple ledged & braced door made up in the summer, when the wood is dry, may take on moisture, expand and bow during damper times. To recap on why this might occur there are two main reasons: the first is that the braces will not shrink in their length and, the second, that wood taken on gives off moisture.

The solution to this problem is relatively simple. The door should be designed so that gaps are left between the T&G boards. If the wood is wet, leave less; if dry, leave more. T&G boards used for doors should have a 'V' machined off each side where they joint – that is there for a purpose. Any movement in the pieces will be masked, to a certain extent, by the 'V' joint. If you look at some older doors you'll see a variation on the 'V'. Often there will be a small bead run down one edge. This, again, takes the eye away from any gaps caused through shrinkage. However, don't forget to make sure that the actual T&G joint is deep enough not to open right out so that you can see through the door itself! Another simple way in which to mask movement in panels is to create a cover beaded joint. Once more, this should allow for any shrinkage so that the bead still covers the joint if this occurs.

Fixing feather-edged boards

The final example is more basic. Care should be taken when fixing simple feather-edged boards. There are two points to consider but both are linked to shrinkage and movement. The first is how you fix the boards onto the underlying structure. Only one nail or screw should be used at each fixing point. This bit of shrapnel should go through above the thick edge so it misses the piece below. The next one placed above or alongside it will then hold the thin edge in place, and so on. This method, obviously, allows the individual pieces to move with the seasons and avoids splits that might occur if too many fixings were used. Do also make sure that your overlap is sufficient to allow for any shrinkage.

Before each of the feather-edged boards are actually fixed, the second factor should be considered. Take a look at **Fig.2**, which shows how wood moves. Now take a look at the ends of your feather-edged boards. The objective is to fix them so that the naturally occurring curve, created as they dry, is towards the base fixing structure. In other words, concave inwards. If you follow these techniques you'll find your boards will not split or, after time, show gaps at their edges.

So there we have it – a brief description of shrinkage and movement along with a few ways in which you can mitigate against them. All you need to do now is consider these factors in your designs and try to incorporate ways in which they can be accommodated. **GW**

NEXT MONTH

Continuing with his series, Peter offers advice on selecting the correct grade of timber for the job in hand

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Back to the GRINDSTONE

Tony 'Bodger' Scott takes a sideways look at sharpening

Let me be blunt. Sharpening is dull. I admire perfection in woodworking, as in much else, but I draw the line at obsessive compulsive behaviour, and I find that sharpening seems to bring out the worst of it.

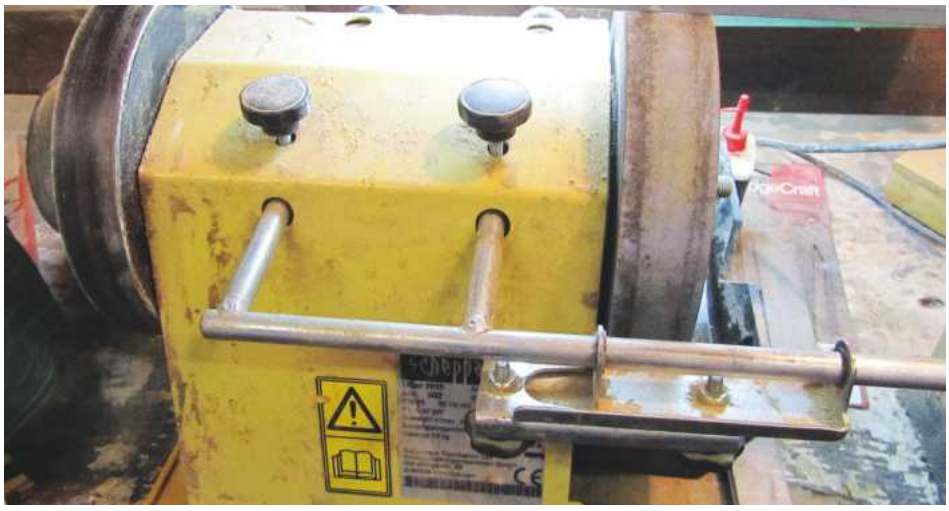
Three things in particular bother me about the debate:

- Within very broad limits, I've found that changing the angle of the bevel on a chisel or a plane blade makes no perceptible difference to its performance. So the endless advice about the relative merits of an angle of 25, 30 or 35° – with or without a secondary bevel of 5° more – leaves me cold.
- Besides, those plastic angle-setters you get with grinding wheels are almost useless. Their edges aren't long enough to give you a reliable fence to measure against, and once they have a little workshop grime on them, the words and numbers on their surfaces become almost impossible to read.
- The law of diminishing returns applies just as much to sharpening as it does to investment and economics. Each extra minute you spend honing delivers less improvement than the minute before.

Five steps to sharpening

With a little care and some practice, I can get a perfectly acceptable edge on most tools within a handful of minutes. I could no doubt get a finer edge if I spent a further half hour on each tool, but I'd rather spend that time on moving my project forward. Tools are called tools because they're used for some purpose outside of themselves. They're for working with, not worshipping.

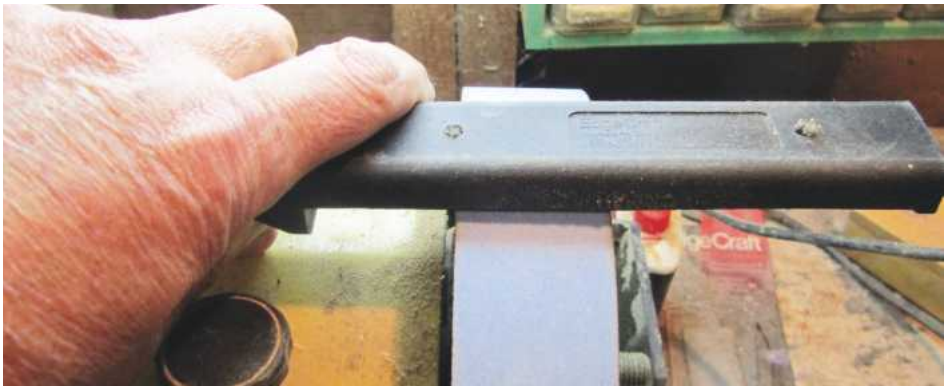
All that said, some degree of sharpness clearly matters, as does some degree of speed. I find a combination of techniques and machines serves my woodworking needs very well. As I show overleaf, five steps seem worthwhile. And none of them takes very long. >



PIC 1. Most grindstones – like this ageing Scheppach – have a water-cooled stone at one end, and one or more leather wheels at the other

PIC 2. A straightedge reveals a hollow in the middle of the grindstone and a slope falling away on the left-hand side

PIC 3. A set-square helps to make sure that you don't inadvertently create a slope on the wheel

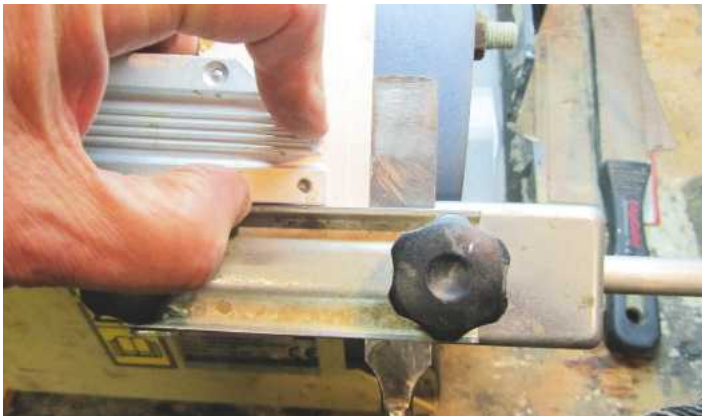


PIC 4. Any strong file or diamond-embedded abrasive plate can be used to flatten the wheel by hand

PIC 5. Cleaned, flattened, dressed and checked for square, the grindstone is ready to go back to work

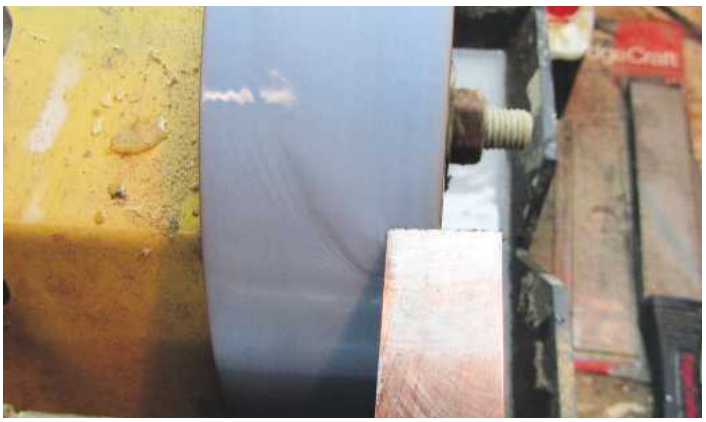
1. **Check the wheel.** Holding a straight-edge against the wheel – ideally with a strong light behind (**Pics.1 & 2**) – makes an uneven surface very obvious. A set-square (**Pic.3**) lets you check that you're not going to create a slope.
2. **Dress the wheel.** You can buy special, and expensive, dressing tools, but I've found that any stout file – or one of those surfaces with microscopic diamonds embedded (I have one that was given away with a woodworking magazine) – makes a perfectly satisfactory substitute (**Pics.4 & 5**).
3. **Find an angle.** Not the angle, just an angle. One way to check that you're grinding an angle more or less the same as the one already on the tool is a trick I learned from professional turner Mick Hanbury: rub ink on to the bevel before you start (**Pic.6**), then, as you grind, lift the tool off frequently and inspect it. The pattern of ink still visible will tell you whether you're grinding unevenly.
4. **Flatten the back.** You can always use the side of the wheel to flatten the back (**Pic.12**) or quickly remove the wire edge you raise by grinding the bevel. It's not as accurate as rubbing the back across

PIC 6. Professional woodturner Mick Hanbury recommends rubbing ink over a bevel before grinding. When you later inspect the blade, the ink marks give you an instant guide as to whether you're grinding evenly



PIC 7. When clamping any tool for grinding, it's worth checking that it's held square to the wheel. This chisel has a marked camber along its edge

PIC 8. Two minutes of firm grinding remove the camber and raise a lumpy wire edge. The water in the stone stops the metal overheating



PIC 9. As you grind, it's worth moving the blade back and forth across the wheel and out beyond both sides. That way, you minimise the risk of wearing the wheel unevenly and creating dips that will affect subsequent sharpening

a piece of sandpaper tacked to a sheet of glass, but it is a great deal faster.

5. **Finish to a polish.** The sharpest blade consists of two polished edges meeting at an angle. The angle is less important than the polish. I usually start by polishing the bevel by hand on a leather wheel liberally smeared with jeweller's paste (**Pic.14**), then clean it up on a felt wheel before finally giving it a few strokes on a leather strop (**Pic.16**). Some woodworkers aim for a mirror finish front and back, whereas I tend to settle for a reasonable gleam.

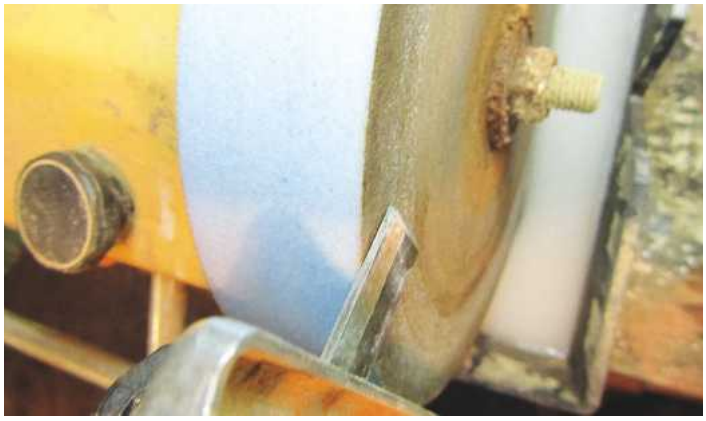
Listen to the wheel

You'll see from the photos that I make use of two grindstones: a broad, slow-moving water-cooled stone, which has a matching leather wheel on its other end, and a high-speed grinder, which has a felt wheel on its other end.

Somewhere down the years, I've learned to use the slow stone so that it rotates away from the tool, even when I'm not using a jig to hold the tool in place. I've tried using it with the stone rotating towards the tool and it works just as well. So I've no idea which is, or is thought to be, the 'correct' way, but doing it my way means that I can easily >

PIC 10. Regular and frequent inspections, preferably under a bright light, help to show up any remaining areas of irregularity

PIC 11. This angle gauge – like most of its kind – is too small to be reliably accurate, and I had to spend 20 minutes cleaning it to make it readable enough for a photo!



PIC 12. Purists say you shouldn't flatten the back of a blade on the side of a wheel; you should use a lapping stone or wet-and-dry paper stuck down on glass. I say it works well enough and it's much faster

PIC 13. Jeweller's paste, used on leather wheels to polish an edge, often dries out in a workshop. It can be revived by mixing in a little oil

PIC 14. You can of course use a tool-holding jig when you hone a blade on a leather wheel, but I find it simpler to hold the bevel on the wheel by hand. The pattern of slurry build-up around the edge will tell you whether the wheel is getting right to the tip of the blade. So will the feel of the tool in your hand and the sound of the wheel against the metal

PIC 15. A felt wheel is a quick way to polish up the face or back of a blade, but remember to hold it tip-down against a wheel which is spinning towards you, and remove it frequently so that the blade doesn't overheat and lose its 'temper' – hardness

move on to the leather wheel without risking the tool digging in.

On the other hand, I always have the high-speed wheel rotating towards the tool. That way, I can keep the blade steady on the toolrest. I need only remember to point the blade downwards when I move to the felt wheel (**Pic.15**).

For turning tools, I don't bother with the water-cooled stone at all. Because of the speed at which turning tools are moving against the wood on a lathe, they tend to lose their edge quite often. So, to save time, I go straight to the high-speed wheel. Laying the tool on the rest, I rest the bevel on the wheel and use my fingers as a fence against the outside of the rest to maintain the tool's position. Again, smearing ink on the bevel and checking frequently helps to make sure I'm grinding evenly. I aim to tilt the blade so that, as its bevel moves against the wheel, sparks just begin to come over the nearside face.

I rarely bother to remove the wire edge from the inside curve of roughing and bowl gouges. Once they're back in use, the wire edge gets scraped off anyway in the first few revolutions of the lathe.

For those like me, who are willing to trade a little precision for a lot of time, let me offer one final idea: listen to the wheel. I've found it particularly helpful when sharpening freehand, without all those clever – and fiddly – tool-holding jigs.

On any grindstone, including a leather or felt wheel, you can't see exactly where the edge is in relation to the wheel, but you can hear it. The sound changes appreciably as the wheel approaches the very edge of the tool. On a felt wheel, for instance, you hear a smooth hiss as the wheel polishes the face of the bevel or back, but that changes to a lower drumming as the wheel reaches the edge. Give it a try on your own grindstones. **GW**

PIC 16. A few strokes against a stiffish piece of leather put a final polish on the edge and remove any loose metal particles left over from the grinding

PIC 17. A smooth cut through paper is not a bad test of a blade. For my money, this edge is now ready to go back to work, not more than five minutes after starting

PIC 18. Turning tools aren't hard to sharpen freehand. Roll the bevel against the wheel until sparks just begin to fly over the nearside face. Lift the tool off frequently to let it cool and to check that the bevel is smooth. Finish the tool off on a felt wheel, but don't bother removing any wire-edges; the lathe will do that for you in seconds

PIC 19. Plane blades demand a little more precision. Hence, here, a more determined attempt to repeat its 25° angle and to set it firmly in a blade-holding jig

PIC 20. Once the plane was ready for polishing on the leather wheel, I was ready to finish it off by hand (you'll see that the jig is no longer riding on its bars)

PIC 21. Clean, evenly translucent shavings are good evidence that the plane's blade is now square to the sole and scarily – if not terrifyingly – sharp

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Pushing the boundaries

Having worked under various designers and artists, including Fred Baier and Paul Cocksedge, **Alexander White**'s award-winning bespoke pieces embrace technological innovations while still staying true to their roots

BELOW: Alexander's iconic 'MONROE' chair – an exploration of form and function through repetition. Made using 9mm MDF, primer and lacquer – 800mm high × 750mm wide × 1,000mm long. Made from a homemade plywood, finished with wenge on one side and maple on the other, oiled

An initial glance at Alexander's 'MONROE' chair fills you with notions of the romance of Hollywood, and the piece's many folds and pleats, which mimic that of the actress' famous dress as she stepped over the subway grate in New York City, are incredibly eye-catching. Made using advanced CNC techniques, this chair has become somewhat iconic and it could even be regarded as this furniture maker's statement piece. I actually remember seeing this very chair, brought in by Alex himself, on the Channel 4 programme *Four Rooms*. I recall it being sold to one of the dealers and Alex deservingly walking away with a nice wedge of cash in his pocket. At the time, I remember thinking 'wow' and wondering what other extraordinary designs this maker had up his sleeve, so fast forward a few years and I was finally given the chance to find out, as I spoke to Alex (who studied 3D Design at Falmouth University) about his background, the development of his designs, and where he sees his exciting career heading.

Background

Being brought up in rural France and having a father who was a landscape gardener undoubtedly influenced this maker and certainly made him develop a special affinity with nature, where he was taught to view trees and wood as a material. "I was brought up on a building site as my father renovated our family country home," he says, "and as a result I was surrounded by tools and a general energy of creation; needless to say I was hooked from a very young age and couldn't wait to try things out for myself."

Alex's French schooling was underlined, through choice, by science, but towards the end he decided to specialise in engineering, and this was when he first encountered precision and began to familiarise himself with the intricacies of the built world in all scales.

A little later, having moved back to the UK upon leaving his childhood years and schooling behind, Alex's thirst for innovation and making things was fulfilled during his time at Falmouth University, where he studied 3D Design, as mentioned previously. It was there that he began to develop ideas on detail, structure and function, and although the course satisfied his curiosity and gave him the freedom to pursue and develop his own approach to design, he came out of it having not been taught how to make things correctly: "This was when I contacted Fred Baier," he says, "to see if I could shadow him in order to learn a trick or two."

Learning the ropes

Shadow Fred he did and Alex was unsurprisingly able to learn a great deal from this pioneering designer, who over the 1970s, '80s, '90s and beyond has experimented with many radical structures and forms. It was also during this time that Alex realised he wanted to become a furniture maker, the whole experience of which was, in his words, "a great vehicle for creating."

ABOVE: Alex in his workshop completing his latest commission for Waltham Forest Council, London

For Alex, furniture design became a manageable and affordable medium with enough complexity and purpose through which he could explore the things that interested him, while enabling him to express himself.

Acknowledging the fact he was very lucky to have worked with Fred Baier, Alex adds that he will forever be indebted to this maker and that his creativity and eye for precision will always be something he carries with him for the rest of his life. "I took from him more than a skill but an attitude towards my work, a respect for the art of making, and the underlying notion that processes and craft are vital, but shouldn't overshadow the original concept as they are merely just a means to an end."

After his time with Fred Baier, Alex also had the opportunity to work alongside Paul Cocksedge in his studio, which has won national and international acclaim for its original and innovative design, underpinned by research into the limits of technology, materials and manufacturing processes. The studio's innovative and ground-breaking work has graced the cover of many an issue of *Wallpaper*, and although Alex wasn't with Paul for very long, he soon went on to realise that even the most poetic and immaterial ideas could be materialised, which opened up an entirely new outlook on design and thought processes for him, which would prove to be an invaluable step forwards in his career.

Setting up a business

Upon leaving Paul's studio, Alex went on to set up his own business in 2013, where he would start a career designing and producing handmade and exclusive bespoke furniture for high-end private clients before moving on to create commercial designs for high street retail outlets, such as Heal's.

Citing some of his primary sources of inspiration as those processes derived from geometry and physics, this maker also strongly admires the work of furniture maker Gareth Neal; inventors John Edmark and Theo Jansen; designers Thomas Heatherwick, Joris Laarman and Sebastian Errazuriz; as well as architect Santiago Calatrava, all of whom have, to some extent, influenced the work he has produced and will no doubt go on to influence that which he produces in the future. >

ABOVE: 'MY AMI' bistro table with matching stools – winner of the 2016 Design Guild Mark and the Heal's Discovers 2015 competition. Each piece comprises a circular top and interlocking V-shaped legs, joined by simple copper tubing collection

ABOVE: 'TOPNOTCH' desk – inspired by Japanese intricate woodwork and born from a playful approach to structure. The idea behind it was to repeatedly use a brain-teaser puzzle as a dry joint in order to create a structure system that could be applied to many household items requiring a straightforward structure

Going back to the 'MONROE' chair, which Alex refers to as his most celebrated piece of work, "even now, five years later," he says, "it keeps on giving and I owe it a lot." He tells me that he gets excited with every new project he undertakes and he has pride in most work he has completed, "and to some extend it is needed to justify the amount of work that goes into each and every project," he rightly says. The pieces Alex is most proud of are those that have been endorsed or recognised by others, which, for him, is a sign that he's on the right track. "My latest finalised project for instance, Lighthaus Café in East London, was great fun to create and people seem to love it."

Design process

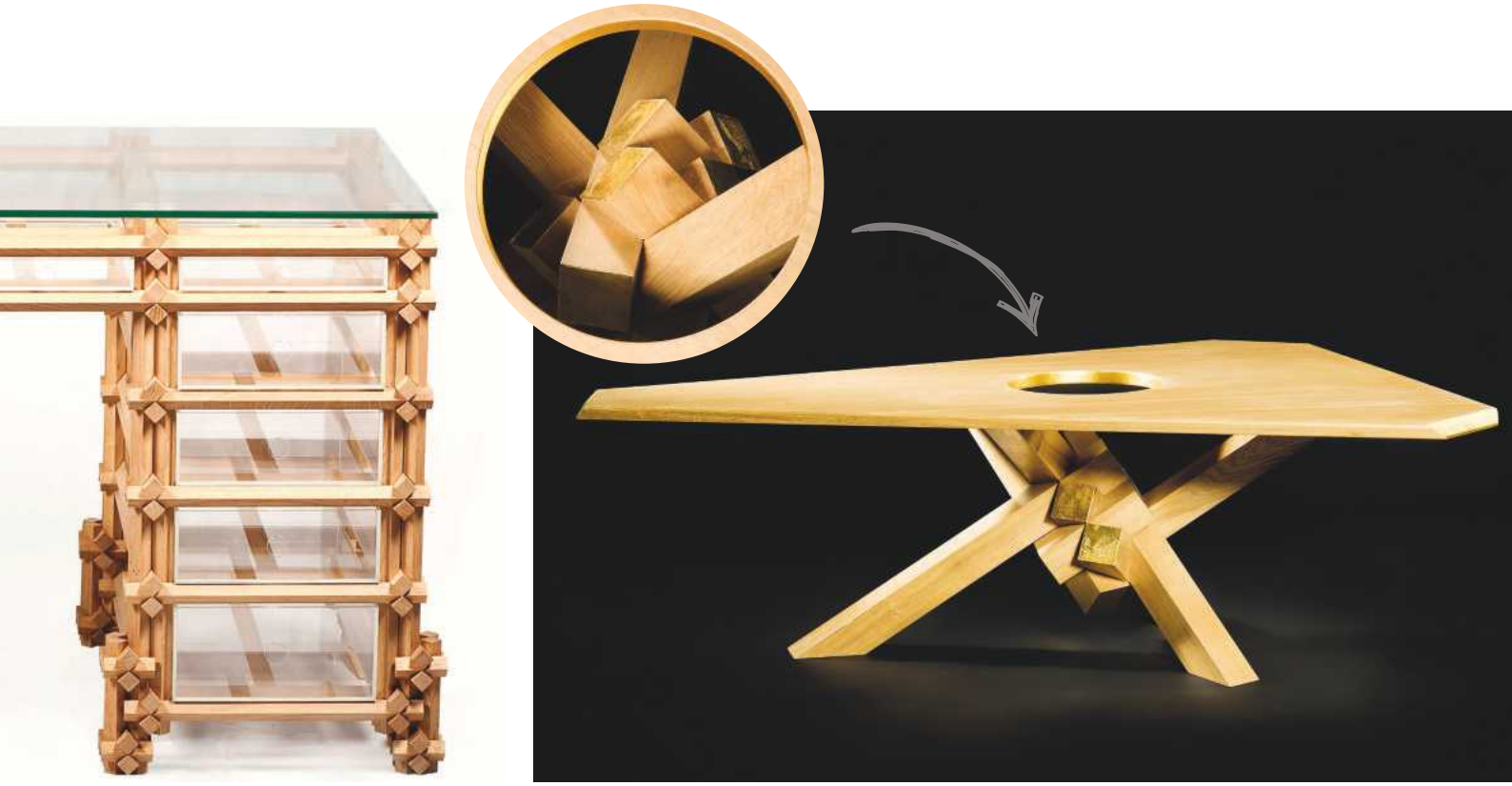
But what does the design process look like for one of his typical pieces? Alex comments that, more often than not, it starts with an idea or a question: "I immediately throw them onto paper to see what form they might take, sketching out various avenues of explorations or solutions," and once he's satisfied with one or more potential outcomes, he starts sketching it up in CAD to see how it might all come together in 3D. "My personal work materialises itself initially as a model, then back to CAD for technical refinement and final adjustments," he says. Only when he has a clear understanding of the whole picture does he start making, and it may take several stages of prototyping before he has ironed out all aspects of what he's creating.

Upon exploring this area of his career more closely, Alex admits to finding himself enjoying working on private commissions less and less, as these sometimes involve working with interior designers or project managers: "Too much of that process is based on me compromising on what I end up doing," he tells me, "I see things my way and the client another, and more often than not this results in an outcome that I'm not entirely happy with." Unsurprisingly, the most fun he has is when he's free to explore and play with his own ideas or things he wants to study. In fact, he sometimes sets himself his own brief, so as to narrow down the possibilities and start building a train of thought. "These, however," he says, "aren't always as fruitful as one might expect."

Choosing to split his time as equally as possible between bespoke commissions and speculative personal projects, these may end up in exhibitions, retail or public spaces depending on their nature, as many of his pieces have to date, including the 'MONROE' chair, which was crowned the Golden A' Design Award Winner for Furniture, Decorative Items and Homeware Design in 2012, and his 'MY AMI' range, which won the Heal's Discovers 2015 competition as well as going on to be awarded the 2016 Design Guild Mark.

Alex says that he tends to juggle several projects at one time, and each one can take anywhere between 1-3 months to complete, depending on the complexity of the

'SLIDING TOP' breakfast table – designed to go in front of an L-shaped banquette seating area in a client's kitchen. The sliding top, lockable in its middle position, enables easier access to the seating by pulling it out diagonally into the room



ABOVE: 'DELTA-KNOT' coffee table – developed as a result of an exploration into the relationship between 'sustainable' construction processes and aesthetics. Using neither glue nor screws, all the cuts enabling each component of the puzzle to slot into each other are identical

design. At present, for example, he is creating bespoke home furnishings for various private clients (kitchens, libraries and chests of drawers), some of which he will make himself, but he's also developing and constructing a coffee vending booth for charitable purposes. "My most exciting project, however, is designing some cycle stands and public benches for Walthamstow High Street. These will be made using bent and laminated reclaimed iroko timber slats that are wrapped around a steel skeleton, forming a comfortable organic form that is developed using a parametric design process in CAD."

Modern vs traditional techniques

Being drawn to modern contemporary designs, Alex says that he still values traditional methods of furniture making and understands the importance of these as underpinning the way in which many makers work today, even though the industry is moving on to embrace production methods even more, such as the use of CNC batch-produced components, which he has utilised in a number of his designs. But is modern better? "Every process has its benefits," Alex replies, "but some are more suited than others to the job in hand and all have a purpose. For me they are, whether human or machine produced, a means to an end. Limit yourself to certain processes and you are limiting yourself to certain types of outcome," he comments.

ABOVE: 'Ribbon console table' – a private commission made from brass and marble

If we look at the 'MONROE' chair once more, CNC machinery is used here to replicate endless identical items, which is impossible by hand. This piece is made using 83 matching components, which swivel around a central axis in order to create a complexly curved and comfortable armchair, but to produce a piece such as this without relying on available technology would be nigh-on impossible, so perhaps the question should be, 'why not use these methods if they are available to you and allow you to push the boundaries of creativity?' The world would undoubtedly be much worse off if this wonderful piece hadn't have been created, so all the more power to technology, surely? Alex is certainly a furniture maker who has his finger on the pulse, utilising manufacturing systems and sustainable production methods for batch production, while challenging traditional methods and aesthetics. His 'TOPNOTCH' desk, for example, is inspired by Japanese intricate woodwork and borne from a playful approach to structure, whereas some of his other pieces are more traditional in their function and appearance, such as his award-winning 'MY AMI' bistro table and stool, and his 'SLIDING TOP' breakfast table.

When coming up with the idea for his 'TOPNOTCH' desk, however, Alex tells me that it began when he started researching Japanese joinery as a >

BELOW: 'MONROE' chair – as seen from above

basis for creating structures: "I quickly became fascinated with self-supporting reciprocal frames, which I explored in various forms, one of which was triggered when I discovered a wooden brain-teaser puzzle composed of square sectioned components, all notched using the same angled cut, which allowed them to slot together." 'TOPNOTCH' is certainly an intriguing and clever object, complicated as a whole yet simple when broken down into its components, but he then had to see if it could be used as the basis for a dry jointing system to create an entirely self-supporting structure, making what seems to be a complicated piece of furniture using a single and repeated process of notching.

Industrial workspace

Working from a renovated residential industrial building in Hackney, East London, which also benefits from having large glass windows, Alex's studio features tall ceilings and a glass wall, which lets in a tremendous amount of sunlight, although this has proved to be both a blessing and a curse! There is also an office mezzanine, which is predominantly kitted out with woodworking equipment although Alex and the other makers whom he shares this space with are currently in the process of installing a small metalworking area. In terms of his favourite piece of equipment, he comments that he loves a good table saw, and he also feels an affinity with his radial plane, which although used infrequently, he loves to get out of its dusty box.

Interestingly, here is a maker who doesn't favour either hand or power methods, choosing to go down the path of efficiency as long as it doesn't compromise the quality or durability of the piece he's working on. Sharing a space with like-minded, talented people who provide endless amounts of discussion, creativity and problem solving, Alex says that although he lives and works in London, he enjoys visiting green areas on the outskirts of the capital, and these trips provide him with a much needed peaceful place to escape to when the hustle and bustle of daily live becomes a little too much – something I'm sure many of us can relate to.

Photographing a completed commission – contrasting the precision-made finished item with its origins as a rough timber

A craft revolution

When asked about how he sees the furniture making industry developing, Alex comments that, in his experience, it seems to be improving for the better. "We are in the middle of a craft revolution," he says, "which is strongly linked to observations on how we produce furniture, in terms of the materials used and where it comes from." Retailers and manufacturers alike are aiming to be seen as conscious and ethical and he thinks that real efforts are being made to improve this aspect of the industry on a European level. "Makers are building it into their business profiles and buyers are opening up to spending a little more on something that is really worth it, so let's hope it's here to stay," he finishes.

Asking about his plans for the future and where he sees his career progressing, Alex tells me that he's keen to further explore the making of small spaces, in terms of tree houses and their fabrication, but his ultimate aim over the next few years is to progress towards making his work less site specific and cultivate more of his own personal work, so that he's not quite so dependent on being based in London. It's also great to see that he's keen to pass on advice to other young furniture makers, advising them to take risks, keep their overheads low, as well as not being afraid of stepping outside their comfort zone and surrounding themselves with the right people, all of which are invaluable tips for getting yourself recognised in the industry.

I'm sure it's only a matter of time before this furniture maker wins another award and creates another series of pieces that are widely revered, all the while learning new techniques, embracing technological advances and developing ways to work faster and better, and while outdoing the 'MONROE' chair may be a seemingly impossible task, I'm confident that we've yet to see this maker's best work, so watch this space with baited breath. **GW**

FURTHER INFO

To find out more about Alex and the projects he has completed, see his website: **www.awhiteworkshop.com**

ABOVE: Alex demonstrating how his 'MY AMI' bistro table folds up

Letters & Makers

Letter of the month Calling all woodworking employers...

Good day Tegan,
I attach a couple of photos of my Grandson, Murray's, workshop. He will be turning 18 soon and has sadly yet to find a job. Unfortunately he is dyslexic, also suffers with ME, and subsequently has had little formal education. His parents have tried every avenue they know of to help him, but little assistance is available. On the other hand, fortune gave him a high level of intelligence and a very good memory, which in many ways subverts his disabilities.

My Grandfather, who was a pattern maker, taught me the rudiments of woodworking, which led me to obtain my Scottish Higher Certificate in Technical Subjects, although on leaving school I studied electrical engineering. When I retired some 20 years ago, with a very good pension, I returned to my roots and built and equipped my own workshop with all the necessary machinery. My Grandfather left me many beautiful old tools, some of which are 150-years-old.

At 10-years-old Murray was slowly introduced to hand tools and some of my safer machines, and he soon started to collect his own. He studies all the catalogues and web pages he can find, even with his dyslexic difficulties.

A view of Murray's workshop, where he spends a great deal of time honing his woodworking skills

He has slowly built up a magnificent small workshop of his own, with a wide variety of tools from bandsaws, routers (with table), drilling machines, lathe, scrollsaw and many fine hand tools, which he has bought with savings and sales of small items he has made.

At the moment he is making his stock of Christmas items to sell at craft fairs. He gets up at 7am and works unsupervised until 5pm, with less than one hour for lunch. He says he wishes to be prepared for the day he gets a job. However, that's the problem: he cannot get work because of his background of dyslexia and ME. It seems the craze for academia has made companies wish to only employ graduates.

Murray is very keen to become a furniture maker or restorer; he is passionate about woodworking and has very good hand skills, and he can read simple drawings. His father is prepared to subsidise him for a year, so he would work for nothing providing he had a guarantee of continuation perhaps with three monthly assessments. What more do employers want? He would certainly be an asset to anyone.
Very best regards, **Bill Irvine**

Hello Bill, and many thanks for getting in touch. Murray's story is really very heartwarming and one cannot help but feel frustrated for you and on his behalf. I really do hope that an employer out there recognises his obvious skill, determination and passion for woodworking and gives him the chance he so obviously deserves. I'm publishing your letter here in the hope that we may be able to help him in some way. If there are any employers in the woodworking industry reading this who would like to be put in touch with Murray, please let me know and I will do all I can to facilitate this. At GW we are incredibly passionate about championing young talent and believe that everyone should be given a fair chance. I very much hope to have an update on this story for you next month.
Best wishes, **Tegan**

Axminster Hobby Series bandsaw winner

Congratulations to our recent Axminster Hobby Series HBS200N bandsaw winner, Hugh Ridsdill-Smith. Wasting no time in assembling this bench-top machine, Hugh has already used it for a job working on Southwark Cathedral's Education Resource Centre, where he's been busy making some replacement parts for storytelling models of Noah's Ark and the Parable of the Good Samaritan. "Looking ahead," says Hugh, "I plan to use it for more decorative design work, especially parts for furniture repairs."

We're thrilled to hear that the bandsaw has gone to such a good home, and thank you to all those of you who entered. We've got many more exciting competitions planned over the coming issues, so stay tuned!

Hugh Ridsdill-Smith with his new workshop addition

From the International Wood Collectors Society's website, a giant lion sculpture carved from a single tree trunk, which took 20 people three years to complete

Sawdust in the veins

Dear *Good Woodworking* magazine,
I found a copy of your magazine in a book store. It was most interesting to a soon-to-be 82 years young cabinetmaker and wood collector. I recently donated a botanical wood collection of some 6,000 samples ½ × 3 × 6in in size. I am a member of the International Wood Collectors Society (IWCS) – **www.woodcollectors.org** – and it is their 70th anniversary next year. All of us have sawdust in our veins and are always looking for new reading material and tools. Oh yes, membership is worldwide. May I suggest that you contact our Editor, Mihaly Czako, here: **wow.editor@woodcollectors.org**. Let me know if I can be of assistance in obtaining information for you or any of your readers.
Dennis Brett (Franklin Lakes, New Jersey)

Hi Dennis, and what a lovely surprise! It's always a pleasure to receive letters and emails from readers across the pond! It's wonderful to know that your love of woodworking is still as strong today as it's always been and reading about the International Wood Collectors Society is truly enlightening. I will certainly contact the Editor as you suggest and hopefully we'll be able to run a feature on this great organisation. I do hope we speak again!
Best wishes, **Tegan**

One to watch:
Rycotewood Furniture Centre students

Students from the Rycotewood Furniture Centre are celebrating a successful summer of award wins and placements, especially Avian Evans-White, who has recently completed the Foundation Degree in Furniture Design and Making at Rycotewood, part of City of Oxford College, who was a winner in both the design and craft categories at the New Forest Show. Other Rycotewood students secured runner-up positions.

The New Forest Show has featured an exhibition of furniture made by designers and craftspeople since 2006, and the aim is to show how beautiful wood can be made into beautiful things, with entries invited from professionals, non-professionals and those learning the trade.

Avian, and BA (Hons) student Rosie Salt, were also selected to join the prestigious Linley Summer School. The school chooses eight students from the best furniture colleges around the country to learn a range of cabinetmaking and marquetry skills from master craftsmen.

"Woodwork has been in my family for generations; my father, uncle and their father are all woodworkers of various types," says Avian. "Having watched and learned from them from a young age, I have come to greatly appreciate and value the craft. I enjoy designing new pieces, but my true sense of satisfaction is fulfilled when I'm able to realise these with my hands in the workshop, creating things that have true purpose."

Meanwhile, two of the four shortlisted students in this year's Wood Awards Student Furniture Competition also came from Rycotewood. Jan Waterston, who graduated with a BA (Hons) in Furniture Design and Making this summer, and Terry Davies, who is progressing from foundation degree to the BA (Hons) programme this year, were among the finalists.

To find out more about courses at the Rycotewood Furniture Centre, see **www.cityofoxford.ac.uk/our-courses/furniture**

Avian Evans-White's 'Polar' chair

Avian Evans-White's 'Revolve' bedside tables

Rosie Salt with one of her projects

'One-sheet' dining chair by Terry Davies

'Velo RS' chair by Jan Waterston

WRITE & WIN!

We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about *GW*'s features, so do drop us a line – you never know, you might win our great 'Letter of the Month' prize, currently the new Trend 1/4in 30-piece Router Cutter Set, worth over £100. Simply email **tegan.foley@mytimemedia.com** for a chance to get your hands on this fantastic prize – good luck!

A view inside David Charlesworth's well-equipped, light and airy workshop

Different strokes

Dear Tegan,

I feel l must take issue with the *GW* verdict given in issue 320 regarding David Charlesworth's two DVDs on planing and sharpening. I guess I should start by declaring a slight bias on this matter having had the privilege, yes privilege is the best word to describe it, of attending one of David's weekly courses on plane and chisel sharpening and methods of use. It was the most inspirational week I've ever had and just to be coached by the absolute master was, yes, a privilege.

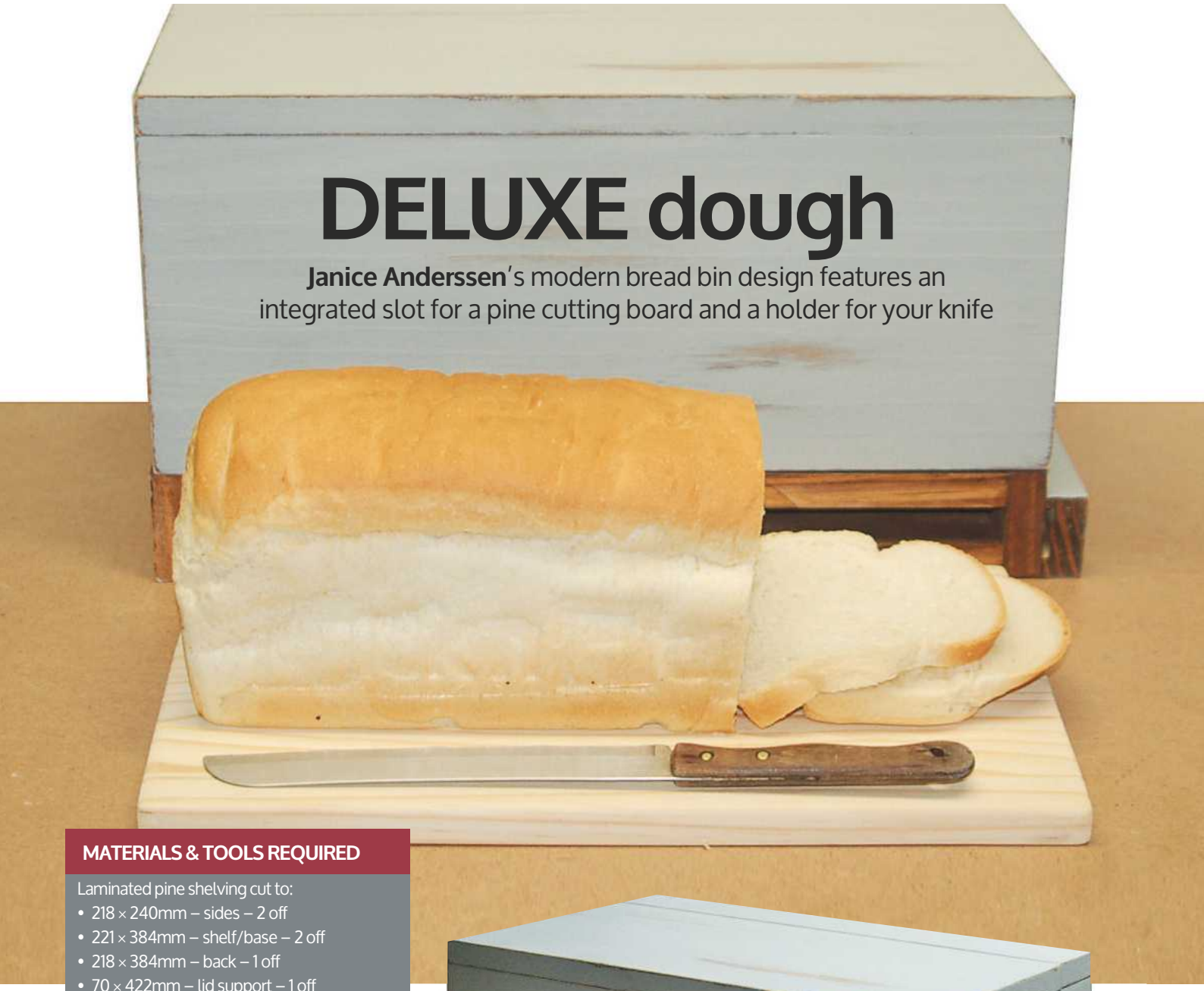
Anyway, I digress! My issue is, how do you rate the item in question, because to me David's DVDs were very unfairly scored. Yes, I agree that for most people who just want a quick solution his methods are possibly too in depth, but that doesn't mean they aren't correct (in fact if you want better than 'scary sharp' then see this DVD). By giving a 3.5 out of 5 you have suggested to the reader that the DVDs are not very good, when in fact his method of sharpening is second to none. Don't forget his ruler trick is known and used the world over. If, say, you were reviewing a new Lie-Nielsen plane that was so good you gave it a 5 out of 5, then great – we know it's a superb plane but probably 90% of us couldn't afford it, as would be pointed out. The same I would suggest should be applied here: 5 out of 5 for content, but noted as just not for everyone. Level playing field and all that! Maybe you would consider running a future article on David Charlesworth?
Thanks and with best regards, **Mike Watkins**

Hi Mike, thank you very much for taking the time to get in touch and for sharing your opinions with me. I will pass these on to the reviewer, and I do take what you say on board. As I said to David, who also emailed to give his thoughts on the scoring, we try to be as objective as we can be, impartial and fair. I think that the DVD was reviewed from a professional woodworker's perspective who perhaps does not have the same amount of time to dedicate to sharpening as, say, someone who is a serious hobbyist. That is not an excuse, however; I'm merely trying to offer an explanation as best I can.

As you rightly say, David is admired by many the world over, and rightly so, as he is extremely skilled at what he does. I will bear this in mind for future reviews, etc. and we will do our best to ensure that similar products/DVDs/books are looked at from a variety of perspectives, to ensure the reader is given a comprehensive representation of what is being looked at, in as fair and impartial a light as possible.
Best wishes, **Tegan**

DELUXE dough

Janice Anderssen's modern bread bin design features an integrated slot for a pine cutting board and a holder for your knife

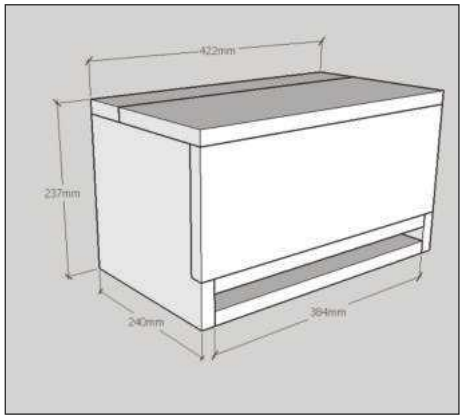


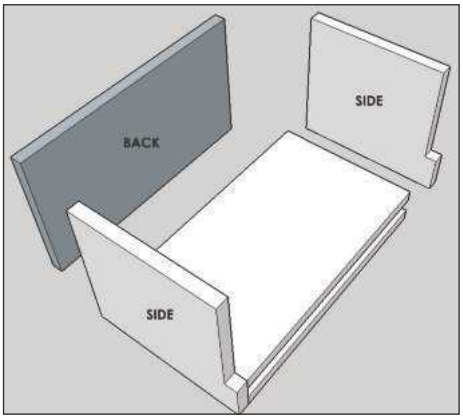
MATERIALS & TOOLS REQUIRED

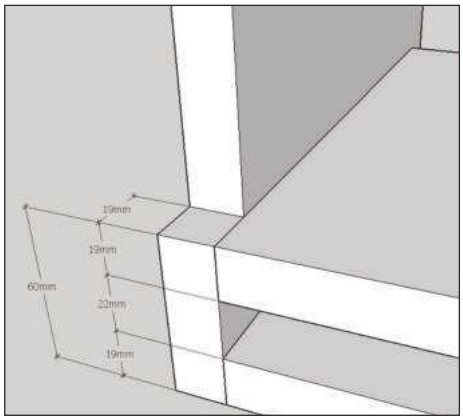
Laminated pine shelving cut to:
- 218 × 240mm – sides – 2 off
- 221 × 384mm – shelf/base – 2 off
- 218 × 384mm – back – 1 off
- 70 × 422mm – lid support – 1 off
- 169 × 422mm – lid back – 1 off
- 158 × 422mm – lid front – 1 off

Optional: 20 × 44 × 240mm – knife holder with slot (see below) – 1 off
- 232 × 380mm – cutting board – 1 off
- 90° blind concealed hinges – 2 off
- Wood glue
- Wood filler
- Eureka 4 × 40mm cut screws
- Choice of stain/sealer or paint to finish

TOOLS
- Drill/driver plus assorted bits
- Corded drill
- Countersink bit
- 35mm Forstner bit
- Orbital sander plus 120 and 240 grit sanding pads
- Jigsaw and clean-cut blade
- Tape measure and pencil







FIGS 1, 2 & 3. Bread bin assembly

Looking for something different for your kitchen? This pine bread bin is easy to make with laminated pine shelving, and you can stain or paint the finished project. The step-by-step instructions provide information on how you can make a pine bread bin with a stain/seal finish, as well as the finished article shown here, with a chalk paint finish using Rust-Oleum Chalked Ultra Matte paint. The pine bread bin also features an integrated slot for the pine cutting board and a holder for your knife.

Assembling the box

Before you start, sand all the cut pieces, then stain. It's easier to stain all the sections. By staining before assembly you don't have to worry about wood glue spoiling the finish. On the sides, measure up 60mm and cut out a 19mm rebate (or the thickness of your timber).

Begin by gluing the shelf and base onto one side (**Pic.1**). Use the measurements given in the drawings for spacing, then leave to dry for a couple of hours. If you don't want to wait for the glue to dry, use the measurements given to mark and attach the shelf/base with wood glue and screws. However, gluing beforehand makes it easier to drill pilot holes through the sides and shelf/base. You can then repeat for the other side.

Next, attach the back in the same way as above (**Pic.2**), and once the glue has set, you can drill countersunk pilot holes and drive 40mm screws into the shelf, base and back (**Pic.3**).

Adding the hinges

Start by drilling holes for mounting the concealed hinges (**Pic.4**) – see instructions for measuring, marking and drilling in the sidebar at the end of the article. You can then secure the hinges onto the lid support >

PIC 1. Begin by gluing the shelf and base onto one side

PIC 2. Attach the back using the same method as before

PIC 3. Drill countersunk pilot holes and drive 40mm screws into the shelf, base and back

PIC 4. Drill the holes for the concealed hinges

PIC 5. Secure the hinges onto the lid support and lid back with 16mm screws

PIC 6. Glue the lid front to the underside of the lid back and leave for about an hour

and lid back with 16mm screws (**Pic.5**). Next, glue the lid front to the underside of the lid back and leave for about an hour (**Pic.6**). Finally, drill two countersunk pilot holes through the lid back and into the lid front (**Pic.7**). Fill these with wood filler, leave to dry and then sand smooth.

Knife holder & bread board

For the optional knife holder, use a router to cut a 4mm deep slot in the pine section (**Pic.8**). The width will be determined by the size of knife you have. This can then be glued onto the side of the bread bin. Check that the knife fits snugly in the cut slot. For the bread board, you'll need a piece of pine measuring 232 × 380mm; this will fit neatly in the base slot you created when assembling the box. You may want to sand the edges to make them round and more visually appealing.

Finishing

For this bread bin, I stained it using Gel Stain in Antique Oak (**Pic.9**) (check the finish you use is food-safe as bread will be placed directly onto the surface) and then rubbed the edges with a wax candle (**Pic.10**) before applying Rust-Oleum Chalked paint (**Pic.11**). Two coats of chalk paint and a coat of matte sealer were then applied to the outside of the bread bin (**Pic.12**). Once the paint was dry, I then lightly sanded the edges to remove the paint and reveal the wood stain below. **GW**

FURTHER INFO

www.Home-Dzine.co.za – a source of ideas and inspiration, crafts, projects and tips for beginner DIY enthusiasts

To find out how to fit concealed hinges, see **www.home-dzine.co.za/diy-1/diy-concealed-hinges.html**

Rust-Oleum Chalked paint – **www.rustoleum.com**

Woodoc gel stain – **www.woodoc.co.uk**

PIC 7. Drill two countersunk pilot holes through the lid back and into the lid front

PIC 8. Use a router to cut a 4mm deep slot in the pine section

PIC 9. For the bread bin interior, use a stain in an antique oak colour, but check to make sure the one you use is food-safe

PIC 10. Rub the edges with a wax candle...

PIC 11. ... before applying the Rust-Oleum Chalked paint

PIC 12. Apply two coats of chalk paint and a coat of matte sealer to the outside of the bread bin

After the edges are sanded to reveal the wood stain below...

.... the finished project should look something like this

mafell

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AROUND THE HOUSE with Phil Davy

Now I know why I loathe those cheap magnetic catches. I'd bought a pack from my local DIY store as a quick way to finish off some cupboard doors in the house. When it came to fitting them I soon remembered that what should be a simple task can be anything but. Not only do these plastic fittings look dreadful, but their screws are frequently of poor quality and a nightmare to insert. In fact, what should have been Pozi head screws could only be driven in with a very small slotted screwdriver blade! Admittedly, magnetic catches do the job and are generally hidden from sight until the cupboard door is opened, but in future I'll be using other methods of door closure where possible.

BOOK REVIEW: Spon: A Guide to Spoon Carving and the New Wood Culture

Spoon carving is certainly a highly specialised area of woodwork, but you don't need to be a carver to enjoy this fascinating hardback. Admittedly, I'd never heard of Barn the Spoon (Barnaby Carder) but it's worth wading through the lengthy introduction to discover something of his background. Early days spent working and living in the woods and literally peddling his wares are a revelation, an initiation into wood culture. Moving to East London (Hackney) to set up a high street shop and the Green Wood Guild, his philosophy and techniques remain deeply imbedded. Although relying almost exclusively on axe and knife, he's no Luddite and has a great website with online tutorials; see **www.barnthespoon.com**.

Wood culture

But back to the book. The opening chapter discusses wood culture – woodland, trees and raw materials. Barn favours sycamore and cherry for his spoons, though recommends birch, alder or lime for the beginner as these are less fibrous. As in woodturning, spalted timber is prized, though he prefers to use plain wood as this does not detract from the form of the spoon.

As you may guess, there are some noteworthy quotes here: 'When we carve a good spoon from ordinary wood we celebrate the beauty of ordinariness,' for example. Unlike the raw material used for most other woodwork it tends to be bent, rather than straight timber, that is of particular value to the spoon carver.

Spoon carving in detail

Part two concentrates on basic tools such as the shave horse, adze, saw and drawknife. There's an array of knife grips essential for successful spoon carving, and Barn explains these techniques well, accompanied by some lovely photography. In fact, there are lots of atmospheric photos scattered throughout the pages.

If you've reached this stage you should be ready to create your first spoon, which Barn describes in great detail, starting with creating a billet and the various carving techniques involved.

Barn the Spoon in his East London workshop

Four categories of spoon

The remaining section concentrates on the making of four categories of spoon: measuring, cooking, serving and eating. Explained within these styles are ladles, caddy and cawl spoons, those with intriguing names such as dolphin and bent branch shovel; in fact pretty well every type of spoon you could imagine. Every one is a thing of beauty and I can see that this carving lark could become quite addictive.

This is a delightful, quirky and thought-provoking read. And if you're wondering about the title, it's derived from an old Norse word for chip of wood. One for the upcoming Christmas list, perhaps...

THE GW VERDICT

- **RATING:** 5 out of 5
- Published by **Virgin Books**
- **PRICE:** £20
- **WEB:** www.eburypublishing.co.uk

AUTUMN PROJECT – HIGH SHELF

TAKES: One day

TOOLS NEEDED: Marking gauge, square, hammer, knife, random orbit or palm sander, sanding drum, disc sander, bandsaw or jigsaw, drill & drill stand, bench plane, router & bits

Higher plane

Phil Davy's high shelf solution offers a great way of housing books, DVDs or bits and bobs that don't need to be readily accessed

There are dozens of ways to build shelves and even more reasons for making them in the first place.

With so many books and CDs lacking a proper home in my cottage, it was clearly time for more shelving. You often see narrow shelving running around the walls in old pubs displaying odds and ends, so this seemed an obvious solution. This shelf is actually in a bedroom, its height dictated by the door opening, so to have a continuous run it had to sit across the top of the architrave. With an overall length of 3.5m it made sense to use two pieces of timber, as the shelf's rear edge had to be scribed to fit the rather undulating wall. A loose tongue enables the two sections to slide together neatly.

You can't really use concealed shelf supports if using PAR softwood, because the board must be at least 24mm-thick. You could use 25mm MDF, though it's obviously heavier than the 20mm softwood that I used. There's no real advantage in using softwood over MDF – unless you want a natural finish – I simply prefer solid timber, even though it's less consistent and often involves more preparation. Perhaps it's because painted MDF somehow has less character...

To follow the traditional theme, I chose to use shaped brackets as supports. With keyhole slots on the rear edges, no screws are visible as brackets slide down over screws protruding from the wall. Timber depth is not important.

Making the brackets

I decided to make the brackets decorative, so I just played around with proportions on paper until the design looked OK. This was then transferred to a piece of 6mm MDF to produce a template. If you've only got a couple of brackets to make, it's probably not worth routing them, but when there are several it pays to use a bearing-guided straight cutter together with a template.

There are two techniques for template routing: either using a router table, or controlling the router from above, as I did. Both methods have their pros and cons, but if you're using a 1/2in router, it's probably less daunting to use the tool mounted in a table. That way, both hands are free to guide the workpiece.

As long as the template is accurate, each bracket will be identical. Because of the keyhole slots, I made them slighter thicker than the shelf at 25mm. Uncertain whether softwood would split when tapping the brackets over the protruding screws, I used a piece of ash for strength. If routing softwood using a template, the curves will probably need no further cleaning up. With ash or any open-grained hardwood the cutter will raise the fibres in places, which can be tidied up on a sanding drum.

The height of the shelf is dictated by the door opening and it had to sit atop of the architrave

With an overall length of 3.5m it made sense to use two pieces of timber, as the shelf's rear edge had to be scribed to fit the rather undulating wall

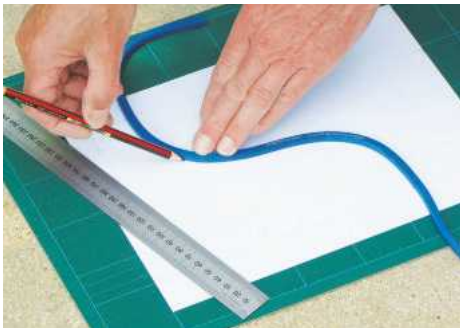
Brackets are housed into the underside of the shelf and can be glued, though I simply screwed down into them from above. A single screw for each bracket allows the timber to move. To emphasise the grain I painted the shelf with General Finishes Milk Paint (Antique White), but left the brackets unfinished – not only would it be a shame to obscure the grain, but open pores would need filling first to obtain a decent finish. If using hardwood brackets you could stain them slightly darker to give a greater contrast to the paintwork. **GW**

STEP 1. As the shelf was to sit across the architrave there were no decisions to make regarding final height

STEP 2. Use a laser level to continue the shelf height along the length of the wall

STEP 3. If the corners of the room are out of square, use a sliding bevel to mark the timber before cutting

STEP 4. Cut the timber down to width if necessary with a circular saw. Clean up the edges with a bench plane



STEP 5. Design the bracket first on paper, using a flexible or French curve to obtain smooth, flowing radii

STEP 6. Transfer the outline to 6mm MDF; cut out and clean up the template on a sanding drum

STEP 7. Draw around the template onto the timber selected for the brackets. You need to make sure the grain runs diagonally

STEP 8. Cut out each bracket with a jigsaw fitted with a narrow blade. Allow 2mm waste outside the pencil line

STEP 9. Screw a cramping block to the template, then pin to one of the oversize brackets

STEP 10. Grip the block in a vice and rout around the template. Use a long, straight bearing-guided router bit

STEP 11. If brackets are softwood the routed curves should not need sanding, but will if using hardwood

STEP 12. Prise the template carefully off after routing, then repeat for the remaining brackets

STEP 13. You'll probably need to trim the straight edges of each bracket with a bench plane

STEP 14. It's easiest to clean up the short end on each bracket with a disc sander. Alternatively, use a block plane

STEP 15. Using a square, measure and mark out the dovetail slot hole centres on the rear edge of each bracket

STEP 16. Drill a 13mm hole at the lower end of each slot. This creates the clearance needed for the screw head

STEP 17. Starting from the hole, proceed to rout a 6mm wide slot. Follow with a dovetail bit set to the correct depth

STEP 18. Carefully mark bracket positions on the wall and insert 5mm screws, checking each slot length

STEP 19. Slide each bracket down over its screws. Lift the shelf into place, check for square and proceed to mark the housings

STEP 20. Rout a stopped housing on the underside of the shelf for each bracket. Use a guide fence to ensure accuracy

STEP 21. Square off the rounded end of each housing with a wide chisel. Each bracket should be a snug fit

STEP 22. The two shelves meet in the middle, so rout a 6mm slot in each end for the loose tongue

STEP 23. Insert the loose tongue and slide the shelves into place. Drill a single screw hole into each bracket

STEP 24. Remove the shelves and brush on a couple of coats of suitable paint. This milk paint does not need a primer

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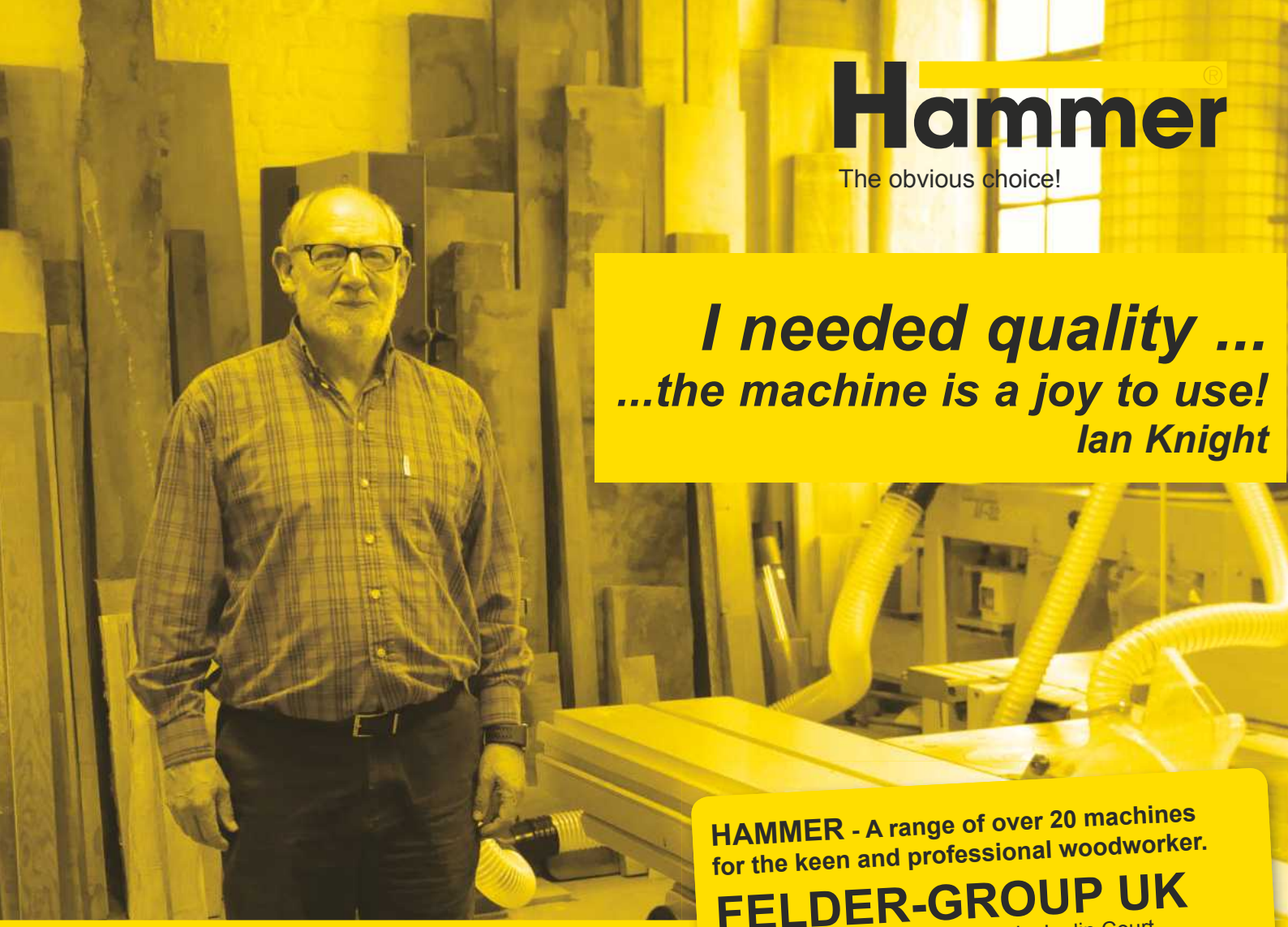

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Having come across the FELDER GROUP at a woodworking exhibition, Ian knew he had found the perfect machine to suit his needs: a FELDER CF 741. "I saw the combination machine at the show and I remember walking out of the building thinking, 'one day I'm going to have one of those!' Having just converted my workshop gave me the ideal opportunity to buy one, so I made a visit to the showroom and came away with one." Ian goes on to say: "I'm used to working with big panels, and I needed something that could handle those in my smaller workshop. I was looking for a combination machine that was quality and I knew from what I'd seen at the exhibition, and confirmed when I went to FELDER's showroom, that it would be able to handle anything I could throw at it, and that has proved to be the case."

Since then Ian has gone on to buy a FB 510 bandsaw and FAT 300 work table, all from the FELDER range. Ian says: "I bought the bandsaw because I needed something that had a thin curve and also a nice depth of cut. The FAT 300 solves so many problems for me: it has a rise and fall table and it allows me to use large panels on all of the machines in my workshop."

Summing up his experience with FELDER, Ian said: "I don't believe in compromising; I want to be able to realise anything I might dream up to do and because of the machines from FELDER, I have never had a situation where I have not been able to produce what I actually want to produce. Not compromising was the main thing and now I have something that is a joy to use!"

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CHILD'S PLAY

Based on a classic Victorian design, **Les Thorne** turns this traditional children's toy using a lovely piece of oak

I'm always on the lookout for ideas for my articles, so when I visited Beamish Open Air Museum in the summer I was pleased to come across wooden cup and ball toys for sale in their shop. I researched the game online and have come up with some interesting facts. The cup and ball originated in France where it's called 'bilbocquet' and the earliest commercial versions were advertised in a 1767 *New York Journal*. There are some more elaborate Victorian variants that are double-ended and have a cup on one end and a spike on the other; you are expected to get a ball with a hole drilled into the bottom to sit on the spike.

Making toys is always great fun and often don't require you to have advanced turning techniques, possibly due to the fact that a lot of them would have originally been made on pole and treadle lathes, so you can hide away all those specialist tools. On some toys, especially the ones for young children, the choice of a non-toxic timber is important as is the use of a finish that is marked safe for toys. This would also be a great project to paint in some bright colours; if you're planning on doing so then I would advise picking a nice pale timber to use, such as beech or maple. **GW**

STEP 1. As usual, I have drawn a rough sketch of what I want to achieve. I found this design online: it's a Victorian toy that's in the National Museum Wales

STEP 2. I chose oak as I like the grain effect that you get when you turn a ball from it. This was left over from a production job and was really dark in colour. Take the corners off on the bandsaw to make the roughing out easier

STEP 3. There are many ways of marking the centres, but these plastic gauges are among the easiest to use. Go all the way around in case the timber isn't square and then mark the centre with a bradawl

STEP 4. I have seen people rough the timber down with a skew chisel or bowl gouge, but by far the best tool for the job is the spindle roughing gouge. Keep the handle down so the tool cuts rather than scrapes

STEP 5. To hollow the end to make the cup you need to hold one end in the chuck. Make a spigot to suit the jaws that you use, ensuring it is accurate, as you will be hollowing a long way from the headstock

STEP 6. When mounting the cup part back on the lathe, use the tailstock to line it up. The shoulder that locates on top of the jaws is very important for accuracy and strength while you are hollowing out the bowl

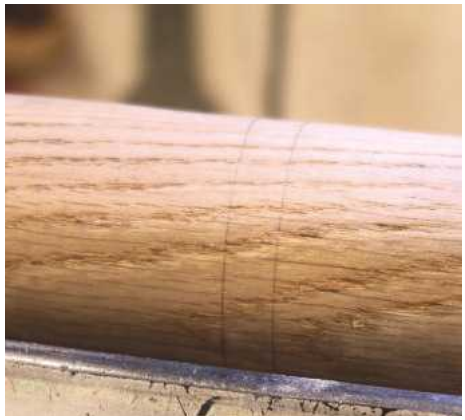
STEP 7. Use a spindle gouge to true up the top surface. It's important to line up the bevel of the tool with the direction of cut, so as to avoid the point of the tool skating across the surface and ruining the timber

STEP 8. The hollowing is completed using the 13mm signature spindle gouge. To cut with the grain you work from the centre outwards using a pull cutting technique with the flute pointing towards 10 o'clock

STEP 9. The tool I use for the final finishing cuts inside the bowl part is a French curve negative-rake scraper. There is an angle ground down on the top of the tool, which makes the cutting safer and the tool less aggressive

STEP 10. Unlike normal scrapers the tool doesn't have to be used with the handle slightly above the blade; in a small shape like this it's much easier to control, but do only take very light cuts

STEP 11. I wasn't going to texture this piece but I needed some way of hiding the unsightly split. The Arbortech with the mini industrial cutter was used to cut random grooves in the direction of the grain

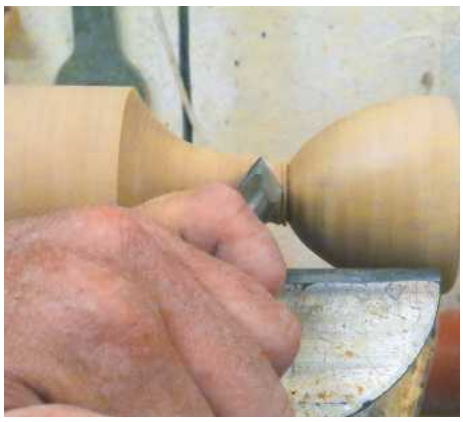


STEP 12. Transfer the depth of the inside to the outside; this will hopefully avoid the possibility of parting off the top part prematurely. The bottom half of the bowl is left thicker than it would be in a more decorative goblet or egg cup, for example

STEP 13. This is really good practice in basic tooling with the left side being a concave shape, which is made by starting with the tool on its side and then opening the flute and swinging the handle to the left

STEP 14. The right-hand side is a convex half a bead shape; this is made in the opposite way to the previous cove. It's important to keep the bevel in contact with the timber, which will allow for control and a better quality of finish off the tool

STEP 15. The good old-fashioned finger gauge. I could use figure-of-eight callipers for measuring wall thickness, but your fingers are as good as anything on a piece this size



STEP 16. There is no better tool for cutting in the fine detail than the skew chisel. The small punctuation points between the changes in direction of the shape are what really set the whole piece off

STEP 17. I almost got this wrong, as I nearly ran out of timber as I neared the chuck to turn the shape that I wanted. I could have used tailstock support but I decided it would be quicker for me not to use it

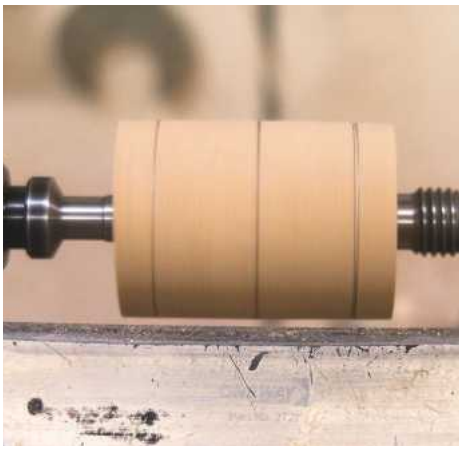
STEP 18. Sanding is a technique that I often see done ineffectively and dangerously. The safest place to sand is here with the toolrest removed. If you leave the toolrest in place, then you must present the abrasive over the back so you don't trap your fingers

STEP 19. I would normally part this off with the skew, which would leave the top pretty much finished, but I hadn't left myself enough room near the chuck, so I cut it off with the thin parting tool

STEP 20. The top bead does need some extra finishing, so I made a jam chuck that would allow me to grip onto the top bowl section and lightly re-cut the handle

STEP 21. When a piece is mounted like this you will obviously not be able to make large cuts, but it will allow you to make light alterations to the work and be able to sand the top

STEP 22. The top bead is turned and finished perfectly. When working an open-grained timber like oak you need to be careful not to pull a small plug of timber out of the top

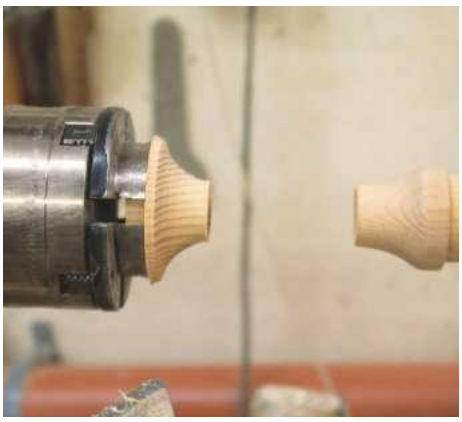


STEP 23. It's ball time. Mount the small block between centres and make it round. Mark out the diameter of the wood onto its length allowing around 10mm of waste on either end

STEP 24. Cut as much of the waste away as you can without weakening the mounting. The pencil mark in the centre will allow you to ensure you don't change the diameter at this stage

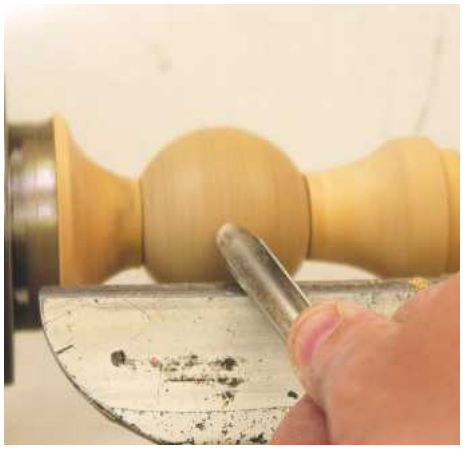
STEP 25. Rough turn the shape of the ball. At this stage it's important not to remove too much timber, so trying to get the piece perfect here can cause more trouble than leaving it a bit more oval-shaped

STEP 26. You will need to make a jig for remounting your balls. My Oneway live centre allows accessories to be threaded onto it, but you can make an attachment that will fit over any other live centre



STEP 27. Here's my setup for turning the balls round. I made two small cup chucks that I hollowed to fit the curve of the ball. Using pine means it shouldn't mark the oak

STEP 28. Mount the ball with the centreline running parallel to the bed of the lathe. Make sure this is done as accurately as you can at this stage. To make the turning easier, I sawed off most of the waste



STEP 29. When you turn the lathe on you will see a ghost of a perfect ball and it's a matter of turning this away until the ball is round. Light cuts are the order of the day here

STEP 30. As you can see here, I've cut away the waste from the end leaving the shape pretty close to being round. If you go too far you may need to remount on another axis and make some cuts again, but the ball will keep getting smaller

STEP 31. A bit of aggressive sanding with some coarse abrasive will help to tweak the shape. If you put a pencil line around the centre before remounting, you can keep track of where you've been

STEP 32. Drill a 3mm hole for the string in the handle; a 'V' block will allow you to do this accurately. I had to do some research to find out which part of the handle would be best for attaching the string, and I arrived at this position

STEP 33. I decided to glue the string into the ball and it seemed to be fine. If I was going to make these commercially, I think I would need to come up with a fixing that stands up to a bit more abuse

STEP 34. Oil and oak go really well together, so finish the piece with a couple of coats of finishing oil, which is marked as safe for toys. Make sure you give the piece a light sanding between each coat

STEP 35. I needed to try it out and Liam who works for my brother in the workshop next door turned out to be quite adept at it. I did find that the longer the string, the more difficult it seemed to be, so I will make it more challenging for him next time!

STEP 36. The completed cup and ball should look something like this

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FROM TREE TO TABLE

John Bullar shares the story of how he converted a tree in a client's garden into an occasional table for their living room

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John Lloyd compares the features and benefits of two differently priced planer/thicknessers – what are you getting for your money? He also looks at the quality of results that can be achieved and the relative merits for a small home workshop Vs a commercial setup

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THE FORGOTTEN AGE

A call to rewrite history

"He looks around, around; he sees angels in the architecture spinning in infinity: he says... Hallelujah!"
Paul Simon

Photograph by Edward Hopkins

You know the story: Ice Age, Stone Age, Bronze Age, Iron Age and then the Romans left. Dark Ages, Middle Ages during which, perhaps, the Age of Wool. Then we had the Age of Steam and Steel, the Age of Plastic and now we glory (or not) in the Age of the Electron. Notice anything missing? Notice anything wrong? This is our received history and yet it fails to name an Age fundamental to the development of the modern human being. Instead, it demeaningly refers to it as the Dark Ages. Dark to whom? Only the observer. Middle Ages? Is this the best that can be said of it: that it lies between two more significant aeons? What happened between 500AD and, I don't know, 1750? Was not our carpentry in the roofs of churches, halls and houses, the finest of all time? Does not a toffee-planked banqueting table say more about the way we see ourselves and the way we want to be, than a flat-pack laminated particle board kit thing that in a few years will be in a skip (discuss)? What about the cogs of a windmill? Lock gates. Bridges. Beautiful ordinary houses. Carvings. Galleons. I won't go on. Yes I will. A lace cravat by Grinling Gibbons. A grand piano. Any piano. A belfry. A punt. A beer barrel, good grief, a beer barrel: where would we be without all the things that we have coerced wood to provide; those things becoming our necessities? Tables. Chairs. Cupboards. Stairs! Without the Age of Wood, most of our roofs would fall in; boats sink; books tumble to the floor, mysteriously dematerialise and take all our wisdom with them.

A reminder

It's not just an historical fact, this Age of Wood. It's emotional too. Wood reminds us of things too easily forgotten. The most common reaction of a visitor to an exhibition of woodwork is to want to touch it. Stroke it. Feel it. Our innate affection for wood is not dissimilar to our love of cats and dogs. They remind us of a quieter nature less capricious than that of our fellow man (and ourselves). Wood (though here is one job it wouldn't do at all well) is our anchor.

People prefer hardwoods to softwoods. It's not because softwood will disintegrate in their lifetime or their grandchildren's lifetime, for in these days of damp-proof membranes and central heating it won't. It's because we like the older, harder, more enduring, characterful features of hardwood. They remind us of ourselves. Not, perhaps on a Monday morning after a particularly enjoyable Sunday, but as we would wish ourselves to be all week.

Another reason: one piece of wood is not like another. We prize individualism and uniqueness. Again, it reminds us of ourselves – or at least of how we perceive ourselves to be. Anonymous cast metal and moulded plastic might be alright for the kitchen and bathroom but the living room, dining room and bedroom call for a more personal touch; a more personal relationship. This urge is common to most customers but they only receive the finished product. If the end-user can derive so much nourishment from a piece of woodwork, how much more does it feed the maker?

History in two acts

Woodwork was our second giant leap. Our first loping leap was to bash out the brains of fellow humans and eat them, thus causing the expansion of our own brains. The second was to chop down a tree, scratch our newly enlarged heads, and muse, 'I think I know what I can do with this' then with little more ado to do it. What we do now (with a few modifications) is what our ancestors have done for centuries. In the Stone Age you were dead by 30: in the Age of Electrons, brain dead by 20, but in the Age of Wood time long ago stood still. **GW**

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