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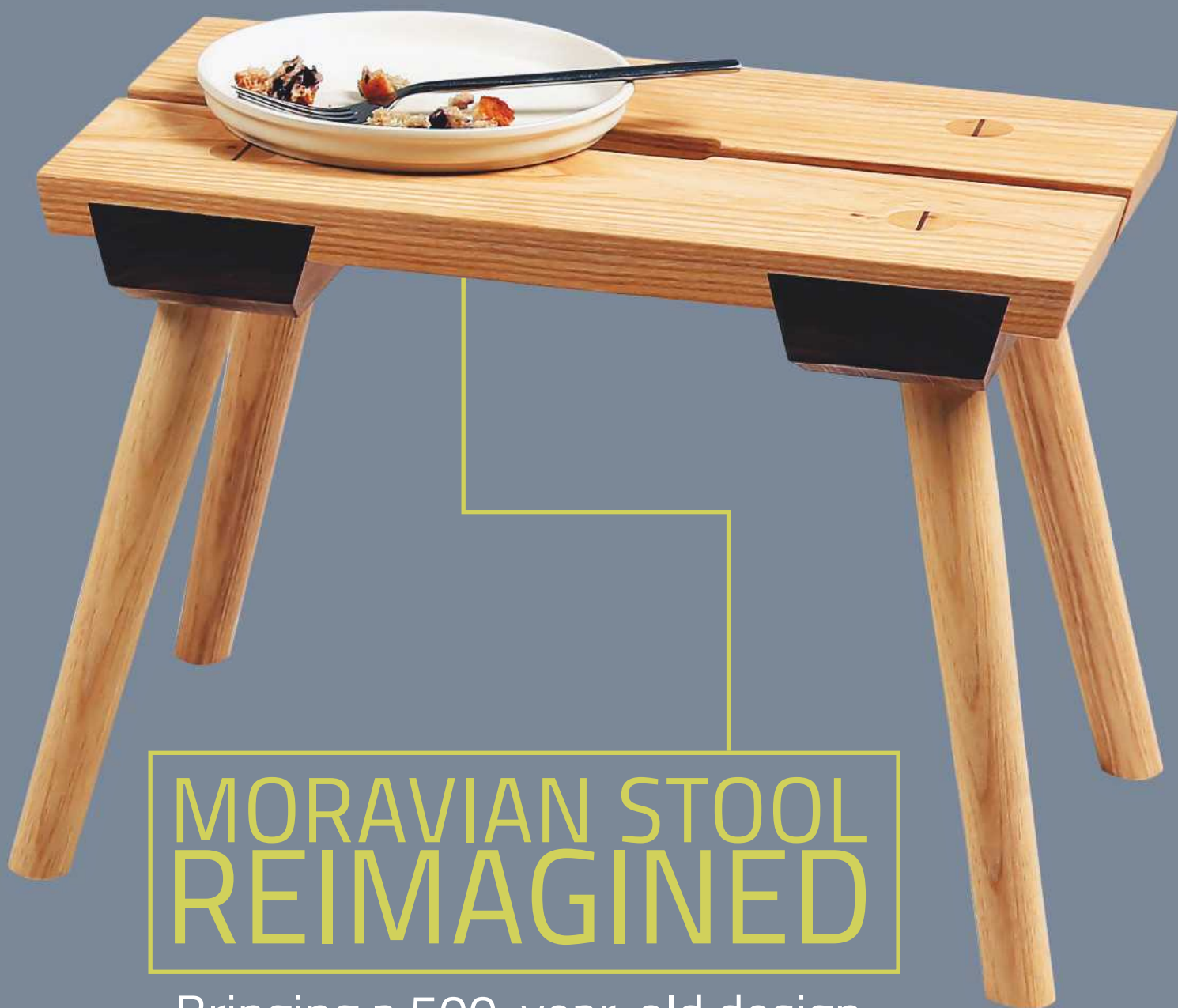
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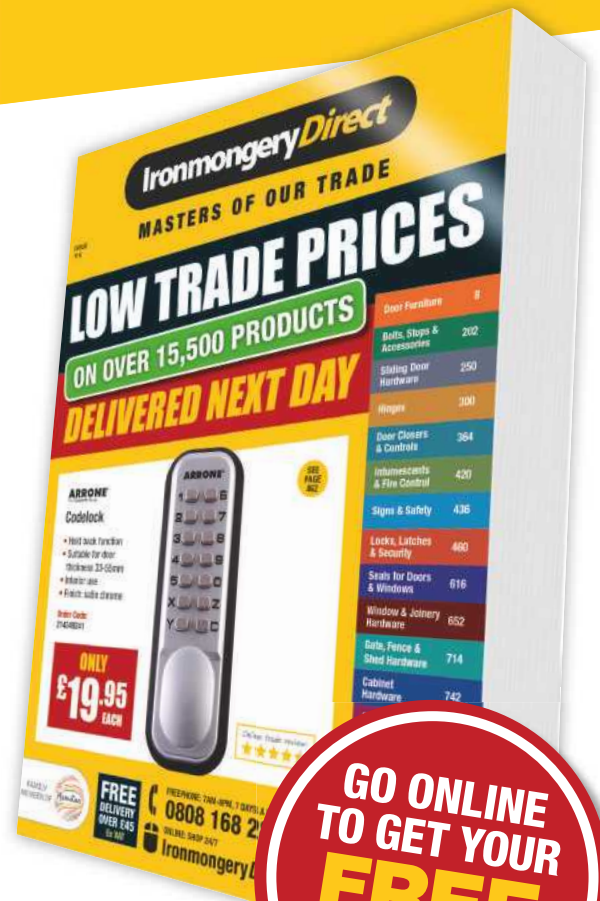
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We endeavour to ensure all techniques shown in *The Woodworker* are safe, but take no responsibility for readers' actions. Take care when woodworking and always use guards, goggles, masks, hold-down devices and ear protection, and above all, plenty of common sense. Do remember to enjoy yourself, though



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# Welcome

While it's not everyone who finds themselves in a position of delivering formal teaching to students eager for learning, most of us will have had the odd occasion where the opportunity to impart a bit of knowledge has come along. While it's generally easier with a youthful member of the family (but not always!), it's often when we're at large in the outside world that a chance encounter can occur, and almost always to the benefit of all. Much learning can take place in a casual exchange like this, and it's a great opportunity for us practiced and experienced woodworkers to pass on the benefit of our years of learning to those in need. I recall learning some very useful lessons myself while much younger and overseas, and you don't always need the right words either.

I find that passing on knowledge to those who desire it is extremely rewarding in its own right, and often there's a bonus for the instructor as well. By breaking a job or task right down to the basics – often for those who may have never held a saw or a hammer before – there's a very real chance that you will take a closer look at your own knowledge and techniques as you try to make things clear. This is a very good thing, and the more you do of it the better your understanding of seemingly obvious activities will become.

Of course, the opportunity doesn't always present itself, and you can't go around accosting arbitrary people at bus-stops like some over-zealous carpenter on a mission to spread the woodworking word; who knows what might happen then? Different from the unpaid consultant role that many assume for themselves (often



Leaving West Dean after a hectic weekend's teaching, the Editor finds an opportunity to keep his own counsel

to the growing irritation of others), the genuine passing on of information for its own sake is something more akin to a gift for all concerned, and should be treated as such.

Like so much in life, finding an opportunity to pass on some good advice is largely a matter of luck, and whether you believe that you get the luck you deserve or if it is entirely random without rhyme or reason, the fact remains that every now and then the timing can be just perfect. As our paths cross and we bumble around it's nice to think that we may just have helped a fellow soul to improve their skills or keep themselves safe from harm. And who knows, if you get good at it you could always consider it as a full-time career...

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

THIS MONTH THE EDITOR HAS BEEN:  
Preparing to teach • teaching • working in the rain • whittling in the sun

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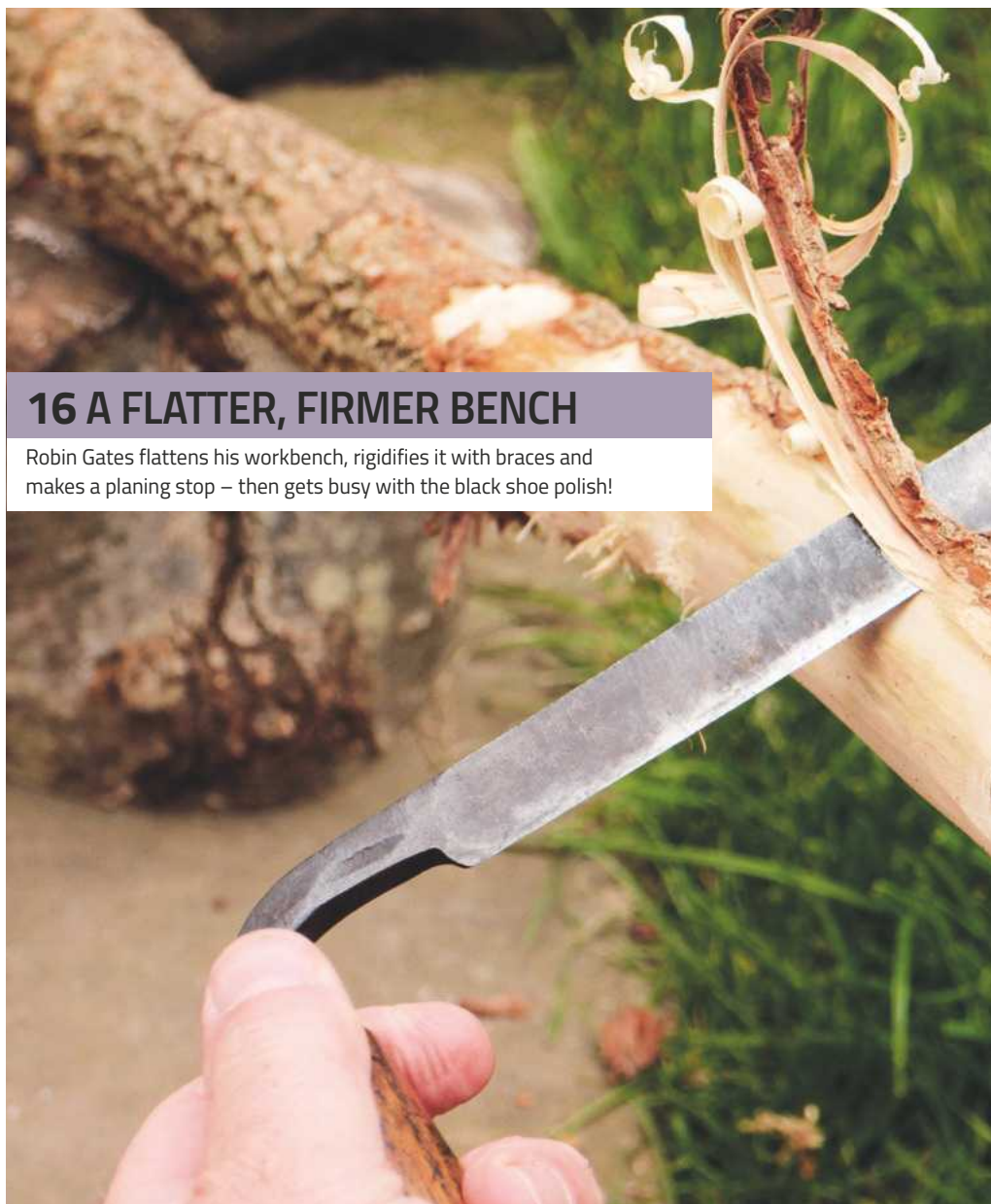
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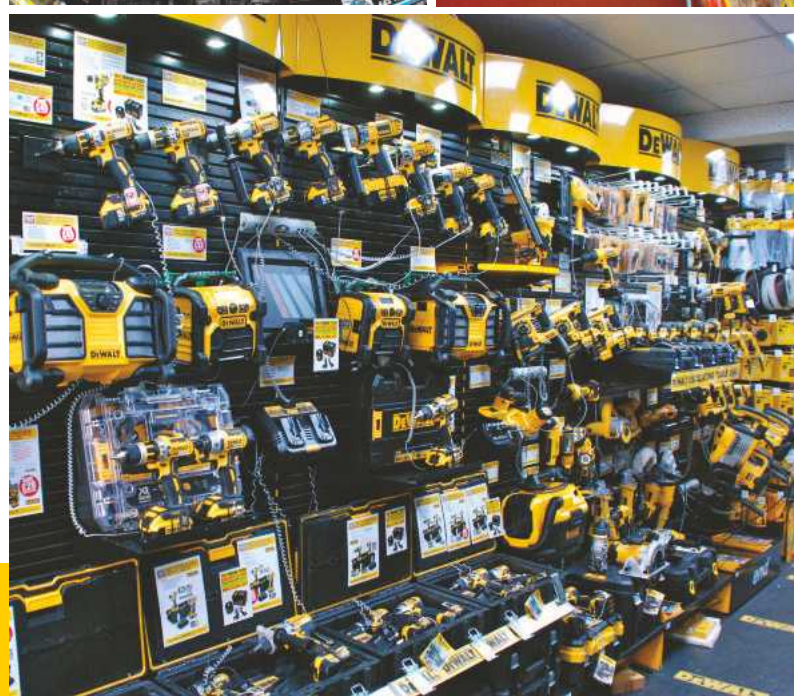
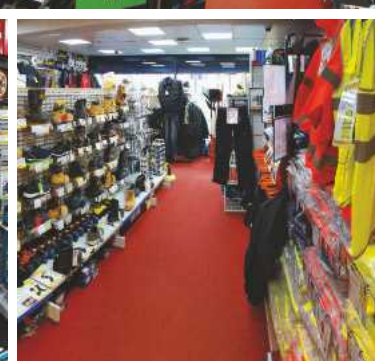
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## ANY OTHER BUSINESS

When it comes to finishing a job – and this, let's face it, is the key to success – applying a finish is generally the last thing to do. Aply named, and essential for both its visual appearance and protective qualities, a finish used to be a straightforward choice for the busy woodworker; paint or varnish. Occasionally French polish and wax would come into the question for a particularly fine piece, but generally it came down to clear or colour. There's much to be said for a painted finish and one old joiner I worked with years ago would, on completing a job that he considered less than perfect, recommend a 'nice thick coat of paint' to hide any blemishes.

These days we're faced with an enormous array of paints, varnishes, oils and coatings, and nearly all of them are now available in an acrylic or water-based version, too. I expect many readers will remember the early acrylic finishes, and be glad that things have improved, especially over the last few years. Many painters still swear by an oil-based paint, but customer demands for

particular brands (and anything that doesn't cause the home to smell like an industrial zone), not to mention legislation to keep us all safe, have led to a massive increase in popularity for the water-based version of every interior paint and varnish.

Fortunately the chemical industry has kept pace with demand and increasingly better quality and more reliable paints are now stocking the shelves. Oils too have multiplied in variety and number and, while I have encountered a water-based 'oil' (useful for the tradesman in a hurry, but inferior to proper oil-based oils), the majority are dependable and fit for purpose, especially those which have pioneered new techniques to successfully blend oil and wax. There's seemingly no end to it, and for the interested woodworker a huge range to choose from. And the down side? Paints and finishes always seem to be vastly expensive. If anyone has found any budget alternatives, I'd love to hear about them.

*Mark*

## BOSCH INTRODUCES NEW PROFESSIONAL COMPACT ROUTER

The world's first cordless compact router in the professional market and brand-new from Bosch, this exciting model features excellent ergonomics and safety, including drop detection. It also benefits from long runtime and lifetime, thanks to brushless motor technology.

In addition, optimised ergonomics allow for one-handed use, and with an extremely low size and weight it features a uniquely small grip circumference and ideal hand positioning. You can also expect safe and comfortable tool guidance, thanks to a new bit-to-tool formation and enlarged footplate contact surface, as well as perfect depth control, with smooth and fast macro depth adjustment, easy fine adjustment,

and lockable depth settings. Health and safety considerations have also been factored in, thanks to a drop detection sensor system that shuts off the tool if it falls, and finger barriers prevent unintentional contact with running bits.

As well as all this, there is a high-powered, highly energy-efficient brushless EC motor; spindle lock for easy tool-less bit change; compatibility with the Bosch accessories range, including 8mm, 6mm and 1/8in collets, and this tool is also fully compatible with the comprehensive Bosch 12V Li-ion power tool range.

The new GKF 12 V-8 Professional compact router is now available from specialist retailers with an RRP from £166.80; to find out more, see [www.bosch-pt.com](http://www.bosch-pt.com).



## '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 information or to purchase advance tickets, visit the website: [www.skpromotions.co.uk](http://www.skpromotions.co.uk) or call 01474 536 535.

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- 1 Sharpening hand tools with Tormek\*
  - 1–2 Wood machining
  - 1–2 & 9–10\* Woodturning for beginners
  - 2–3 Beehive making
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  - 7–10 Engineering mill and lathe – intro
  - 9 Hand plane tuning
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  - 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**  
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- 6–10 Cabinetmaking techniques
  - 25–26 Basic jointing weekend
  - 27–1 Router skills
- Chris Tribe**, The Cornmill, Railway Road  
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- 11–12 Wood machining
  - 30–3 French polishing & modern hand finishes
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Web: [www.johnlloydfinefurniture.co.uk](http://www.johnlloydfinefurniture.co.uk)

- 12 Intro to woodcarving
  - 15 Intro to sharpening
  - 26 Intro to spoon carving
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- 7–28 Introduction to green woodwork
  - 25–2 Make a Windsor-style stool
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## DON'T BLUNT YOUR COMPETITIVE EDGE

With increasingly stringent energy regulations and tight budgets a norm across all industries, today's manufacturing industry takes energy efficiency seriously, and this can begin on a much smaller scale.

So what factors do manufacturers need to consider when it comes to choosing the right bandsaw?

### Bandsaw blades

Choosing the correct bandsaw blade naturally depends entirely on the application and cost requirements of the project at hand; the better the lifespan of a bandsaw blade, the better its efficiency and cost.

For example, if you are completing a re-sawing or cut-off sawing project, you will almost certainly require the maximum blade width the machine allows to keep cuts straight without breaking blades. On the other hand, contour sawing requires a blade that is narrow enough to cut accurately to the desired radius to reduce material waste. Getting the lowest cost per cut, while maintaining a high standard of finish, is the optimal way to keep both productivity and profits high.

Bi-metal and carbide are probably the two most obvious blade materials engineers consider when choosing a bandsaw blade. Unfortunately, there is no ideal bandsaw blade that will cut through all types of material. In fact, using the wrong type of blade is a quick way to ruin the blade and the material you are trying to cut, as well as potentially damaging the machine.

### The right bandsaw

Deciding on the most effective blade type is not the only important choice to make – choosing the right kind of machine to use is equally important. Generally, there are two types of bandsaw. The bigger, industrial-sized models have larger motors with variable speeds. Smaller machines and bench-top models are generally fixed speed and have their place in many a home workshop. Ultimately, the choice of bandsaw is down to the application it is required for.

The ergonomics of a bandsaw are also an important consideration. Ideally, the design of a machine should provide users with quick and easy access to an emergency stop button as well as complying with all the compulsory regulatory standards, including, of course, CE marking. Choosing the right blade and machine for the desired application might seem self-explanatory; however, making the wrong decision can severely cost manufacturers in the long term. Whether it is through accidental blade damage, wasting of materials through incorrect or inaccurate cutting or machine damage caused by incorrect usage – choosing the right machine can save more than you might think.

To find out more about the Starrett bandsaw range, see the website: [www.starrett.co.uk](http://www.starrett.co.uk).

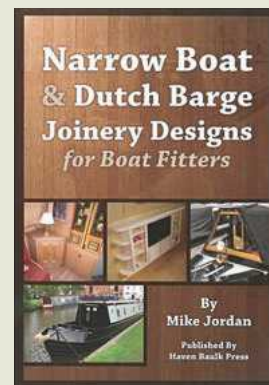


## INVALUABLE READING FOR BOAT FITTERS

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.

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](mailto:mike.jordan31@btinternet.com).



## BESPOKE DISPLAY CABINET FIT FOR A RELAUNCHED MUSEUM

NEJ Stevenson has completed its latest commission to design bespoke display cases for The Ark Gallery at the newly reopened Garden Museum in London. The display cabinets have been carefully designed as part of the Garden Museum's Development Project, in order to house a number of precious artefacts loaned by many of the country's great museums. The bespoke cabinetry was completed in a style appropriate to the museum's 17th century collector, John Tradescant, whose original museum of curiosities inspired the gallery's concept design by Alec Cobbe.

The cabinetry comprises of a single run of five display cases, each 6m long, and two individual cabinets. One cabinet houses a statue and the other is formed of two glass displays, one on top of the other. The cabinetry uses museum grade sheet materials and hardwood, with a hand-applied paint finish. Designed and made specifically for The Ark Gallery, NEJ Stevenson's custom-made cabinets house 20 treasurable artefacts and artworks in the Museum's collection. To find out more, see [www.nejstevenson.co.uk](http://www.nejstevenson.co.uk) and [www.gardenmuseum.org.uk](http://www.gardenmuseum.org.uk).



Photograph courtesy of John Chase

One of the bespoke display cases designed and made by NEJ Stevenson

# ESSENTIAL FIXINGS TO GET YOU OUT OF A FIX!

Axminster has recently introduced some new sets to its range of workshop fixings. Under the name of Workshop Essentials, there are new sets of hose clamps, retaining clips (e-clips), copper sealing and sump washers, flat washers, nylon lock nuts, assorted nails, washer sealing rings, rubber O-rings and assorted pop rivets. They're perfectly suited to the hobby workshop, the professional and especially the home; in fact anywhere a quick fix is needed quickly.

Below is a bit more information about some of the sets.

## Copper sealing & sump washers

These have many uses in plumbing, automotive applications, low pressure hydraulics, pneumatics and pumps. They are well suited for use in outdoor architectural and building applications where there is exposure to the weather. Being a good conductor of electricity, copper washers are useful in electrical applications (average contents 150).

## Hose clamps

These feature CR3 zinc plating against corrosion and the clips are ideal for fastening hoses around pipes or taps, repairs to domestic appliances and automotive applications.

To secure the clip, the worm screw has a hexagonal head and screwdriver slot (average contents 26).

## Flat washers

These are made of steel with CR3 zinc plating to prevent corrosion; made to DIN 125 standard. With this useful assortment you will have the washer you need whenever you need it (average contents 900).

## Nylon lock nuts

These have a nylon insert on their upper face and the grip of the nylon insert resists turning forces, thus preventing the nut from coming loose when subject to vibration. They come in six sizes, ranging from M3 to M10. The nuts are steel with CR3 zinc plating to prevent corrosion, made to DIN 985 standard (average contents 195).

## Assorted nails

These consist of both masonry and common nails in a variety of lengths. The common nails are nickel-plated to protect against corrosion (average contents 580).

All these Workshop Essentials come in a useful plastic organiser box measuring 210 x 110 x 30mm. These new essential fixings sets will stop those annoying moments when a nail, washer or clip is required and there isn't one to hand. All fixings come with a handy selection of sizes, and prices range from £4.99 up to £11.99. You can also buy all 11 as a kit – Axminster's Mighty Maintenance Kit – at a special introductory price of £39.96. To find out more, see [www.axminster.co.uk](http://www.axminster.co.uk) – please note that prices include VAT and may be subject to change without notice.



## NEW SPIRAL SLOTTING CUTTERS FROM TREND

Trend has launched a new range of five professional spiral slotting cutters for use in the Festool Domino DF500. The five sizes of 4mm, 5mm, 6mm, 8mm and 10mm correspond to the standard Domino dowels for high quality, like-for-like performance, creating perfect mortises every time. Micro-granular Tungsten Carbide Tips on each cutter ensures a fast cutting action, offering durability and performance in both solid timber and abrasive man-made materials. A double spiral up-cut profile clears debris from the mortises quickly, thus minimising heat build-up and helping to prolong the life of the tooling.

The DOM/04, DOM/05, DOM/06, DOM/08 and DOM/10 are priced from £25.80-£30.60 inc VAT and are available from all Trend Routing Centres and Stockists across the UK; see [www.trend-uk.com](http://www.trend-uk.com).



## A CUT ABOVE THE REST – THE NEW MINI SAW FROM SILVERLINE

The newly released 400W Mini Saw from Silverline Tools cuts wood, metals, composites and ceramics up to a depth of 12mm. The saw's impressive 400W motor puts out a load speed of 3,700rpm and weighs just 1.34kg, making its power-to-weight ratio one of the best in its class.

The dust extraction system keeps the work areas clean, for more precise cuts, and included with the saw are three cutting blades, tungsten carbide, high speed steel cutting and a ceramic cutting blade.

As with all Silverline power tools the Mini Saw comes with a three-year guarantee, and has an RRP of just £52.99; to find out more, see [www.silverlinetools.com](http://www.silverlinetools.com).



## MAKITA EXPANDS IMPRESSIVE 18V LXT TOOL RANGE



Makita's popular, high performance range of LXT power tools now includes the new DTD155 18V brushless impact driver, which is both compact, equalling the size of the 10.8V machines, not to mention being enormously powerful.

This model runs up to 3,000rpm in high mode, delivers an impressive 3,900 impacts per minute, and generates a substantial 140Nm maximum tightening torque. Weighing 1.4kg, this smart impact driver with slim motor housing will drive home a high strength M12 bolt, a M14 standard bolt, M8 machine screw and 90mm coarse thread screw.

The new DTD155 impact driver features Makita's Brushless motor technology, which substantially enhances the performance and longevity of the tool while reducing friction within the motor and so releasing greater power from the 'engine'. This in turn extends the runtime of the battery and generates less heat, thus reducing maintenance.

Featuring a variable-speed trigger, electric brake, and forward/reverse rotation selection, this model has low vibration and sound qualities, a two-speed impact power selection, LED job light and comfortable soft grip handle.

The DTD155 also offers the new A-Mode (Assist-Mode) facility. When selected, rotation starts slowly allowing maximum control of the screw as it starts to bite into the material. Once the impact driver detects the screw tightening it switches to full speed and impact power to complete the tightening sequence. This feature is designed to eliminate 'screw cam-out' and 'cross threading' caused by high speed rotation before the screw bites in the material. The new Makita DTD155 is available in a body only format.

### 18V LXT two-piece Brushless kit

A new 18V LXT two-piece Brushless kit has also been introduced, and this duo affords the benefit of a new form of hydraulic transmission in the DTS141 oil pulse driver that delivers impact power while substantially reducing the machine's operating vibration and noise levels. This kit comes with two 18V 5.0Ah batteries and a fast charger, all delivered in a convenient and durable MAKPAC case. To find out more, see [www.makita.com](http://www.makita.com).

## "FURNITURE SCHOOL IS NO CINDERELLA," SAYS PRINCIPAL

Scotland's only dedicated furniture design school is calling on careers guidance professionals not to forget fine woodworking as a career option for young people. The Chippendale International School of Furniture in East Lothian takes in some 25 students from around the world each year, but the school remains concerned that careers guidance only seems to highlight trades such as joinery and plumbing for youngsters who want to work with their hands after leaving school.

The school's call comes a day after Scottish exam results were published, with some 150,000 passes at Higher level. "A year-long course at the Chippendale school can, and does, pave the way for a fulfilling career in fine furniture design and making," said Anselm Fraser, principal of the school, which opened over 30 years ago. "But we seem destined always to be the Cinderella of career options for young people, with almost no school leavers from Scotland or the rest of the UK applying for one of our courses," he said.

This year, students came from the USA, UK, Poland, Germany, Austria, Singapore, India, South Korea and Australia – but with no school leaver graduates coming from Scotland.

Student of the Year 2016/17 was a recently-retired tax inspector from Australia, and last year's top prize went to a Russian student who was looking to change careers, and who has now set up her own business in St Petersburg.

"The majority of applicants to the Chippendale school are from people who have embarked on a career, but who have found it to be unfulfilling, and enrolling at the school is all about following their passion," said Anselm Fraser. "However, it is disappointing that we rarely receive applications from young people leaving school, particularly from Scotland, who are being pointed in other directions. Many young people simply don't know that furniture design courses are available, because careers guidance teachers also don't know they exist," he said.

To find out more about the school and the courses on offer, see [www.chippendaleschool.com](http://www.chippendaleschool.com).



School principal, Anselm Fraser

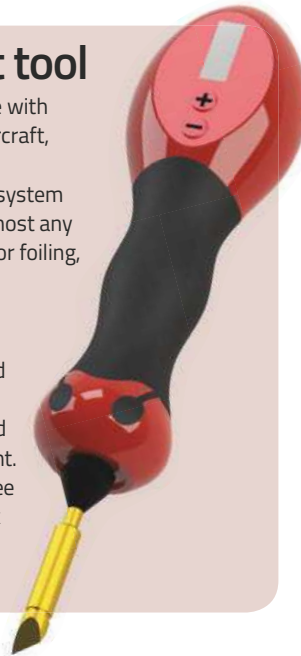
## THE ANT: a new multi-purpose hot craft tool

A breakthrough in crafting, The Ant comes with starter tips so you can get creative with a variety of medias, such as leatherwork, hot-fix gems, stencils, pyrography, papercraft, wax art, fabric and card foiling, using only one tool.

The first in a family of products, The Ant from AntCraft is an innovative modular system that comes equipped with five different tips and adaptors to get you started in almost any hot craft task. The toolkit includes a mini iron, pointed, script and calligraphy tips for foiling, stencil and pyrography work, as well as a flat gem tip, with over 50 additional tips available separately.

AntCraft's Suretip system allows tips to be switched fast, even when hot using the tip puller, leaving more time to focus on creativity and design – there's no need to wait for your tool to cool.

The ergonomic handle, designed for comfort and close work, features 10 controlled temperature settings for you to choose between, depending on the craft requirement. The Ant Family accessory packs include: Pyrography Pack – 19 tips; Wax Pack – three tips; Fabric Pack – seven tips; Foil Pack – 10 tips; Calligraphy Pack – 1 tip; Gem Pack – nine tips; Stenciling – 1 tip, and an Iron Tip pack, with prices starting from £4.99. The Ant is priced at £69.99; see [www.antcraft.co.uk](http://www.antcraft.co.uk) for more information.



## ANNUAL TOOL & EQUIPMENT AUCTION

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. You can expect free entry and parking, plus a good selection of both new and used lots on offer. The catalogue will be available from mid November; email Stan Oakey for more information: [stan.oakey@icloud.com](mailto:stan.oakey@icloud.com).

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# BASA 3 12" BANDSAW

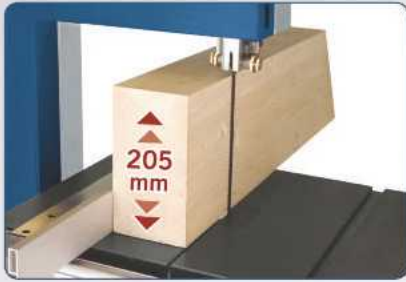
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1927 - 2017

306 mm

205 mm

800 W



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# What's new from

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## RECORD POWER SABRE 350 & 450 PREMIUM BANDSAWS

**MANUFACTURER:** Record Power

**D&M GUIDE PRICE:** SABRE 350 – £899; SABRE 450 – £1,399



The new SABRE range of bandsaws are the next evolutionary step from the highly regarded and market-leading Record Power premium bandsaws. Building on the success of their premium range by introducing some fantastic new features to the SABRE-350 (shown right) to make a bandsaw that is more effective, accurate and easier to use than any other machine in its class. Featuring an 1,100W output (1.5hp) motor coupled with the heavy-duty cast-iron band wheels, the SABRE-350 packs a real punch and can handle cuts to its full capacity with ease. The two speeds, which are slightly faster than comparable machines, make it ideal for cutting non-ferrous metals as well as wood. The cam-action fence adjustment, spring-loaded guides, cam-action blade tension release and double-sided fence mount make this a machine that is so easy to set up and use it leaves you free to concentrate fully on the project in hand.



### Fantastic new features

The SABRE-450 (shown left) boasts a range of fantastic new features in addition to being the largest ever bandsaw to bear the Record Power name. The 1,500W output (2hp) motor drives the heavy cast-iron wheels with ample power to cope with the heaviest of cuts. The cam-action fence adjustment, spring-loaded guides, cam-action blade tension release and double-sided fence mount make this a machine that is so easy to set up and use it leaves you free to concentrate fully on the project in hand. In addition, the SABRE-450 features an electromechanical braking system for faster stopping time and improved safety, making it ideal for use in educational environments.



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1 Smoothing an oak board against the 'pegged' planing stop on a flat bench

# A flatter, firmer bench

Robin Gates flattens his workbench, rigidifies it with braces and makes a planing stop – then gets busy with the black shoe polish!

**A**fter moving house, I was lamenting my lack of a woodworking bench when a sturdy kitchen island popped into view at the British Heart Foundation furniture shop in Hereford. The rattling screws and barrel nuts of its typical flat-pack fixings were not the stuff a would-be Roubo's dreams are made of, but it was generously made of solid beech, reassuringly weighty and – the clincher – cheap. A quick go round with the Allen key and the thing seemed ready for work, which is why it has taken me this long to get round to something I should have done the day it set foot in the garden shed – flattening its surface.

Straight away I knew that in terms of flatness the surface was more choppy sea than millpond, as every board placed on it would bob about like

a cork, but I soldiered on regardless. Then about a year ago I decided to investigate the problem with a try square (**photo 2**), and was shocked by just how much light was beaming under its blade. This was more than a choppy sea – I was trying to saw and plane timber on the peaks and troughs of a veritable ocean storm. Even so, patience isn't my strong suit, and having levelled a small working area at the front of the bench with some swift passes of the wooden jack plane (**photo 3**) and No.4 smoother (**photo 4**), I promptly returned to the job then in hand.

For the small projects I'd tackled thus far this half-hearted attempt at flattening was good enough, but recently I've been working with larger boards and requiring more precision. With this in mind I have laboriously flattened the soles of my planes, the benefits of which are utterly lost

if the work itself is flexing like a trampoline under the downward pressure of a plane passing over it. Clearly, it was time to flatten this bench properly.

## Straight edges

The first thing I needed was a straightedge. The blade of my ancient ebony and brass try square is straight, and square to the stock, but neither long enough nor free-standing. One option was to buy a straightedge, but this would be metal and I prefer wood. Luckily I had a length of old – and therefore stable – oak (**photo 5**), which I'd salvaged from a discarded sideboard. The piece was first ripped down the middle to make two, each about 8 × 50 × 500mm, then flattened and straightened using the long-soled Stanley No.7; for timber this size, I had just sufficient area of flat bench to work on.



**2** The try square exposes severe cupping in the block-built surface



**3** A first attempt at flattening with the wooden jack plane...



**4** ... followed by smoothing with the Stanley No.4



**5** Straightening the edge of an oak straightedge with the jointer



**6** Shining a torch behind the straightedge to expose the ups and downs

With a torch (**photo 6**) shining through the valleys below the straightedge I could now clearly see where the high spots lay, and marked them with a pencil. Although this had me lying with my face to the bench like I'd fallen asleep, it really wasn't that comfortable. I repeated the operation as flattening progressed, gaining an earful of wood shavings in the process.

It's worth mentioning that this bench is of the composite type, built from scores of finger-jointed beech blocks, so instead of having consistent grain, as you'd find in a surface built of full-length boards, the grain changes character from one block to the next with the abruptness of a radio switching from Beethoven to The Beatles.

As a consequence, I would have expected the random assortment of grain directions to have cancelled out the kind of movement you see in wide flat-sawn boards, which cup as they lose moisture due to tangential shrinkage. But in practice the surface had rippled across its width like a rucked-up tablecloth. And just to compound that injustice, the block-built structure threatened to undermine the flattening procedure in that, for every block planed with the grain I couldn't avoid

planing a block against the grain, so tear-out was a distinct possibility.

### 5½ out of 5

One good thing to have come out of my delay with this job was that I'd found a very tidy Record 5½ jack plane for £15 at the local Age UK charity shop – a good cause in which I'm fast approaching a vested interest. Having previously toyed with the idea of buying a standard No.5 jack, I was glad I'd waited for this one to show up, and having flattened the sole and sharpened the blade would award it a solid 5½ out of 5 in all departments.

At first, a plane numbered 5½ struck me as slightly fantastical, like King's Cross Platform 9¾ in *Harry Potter and The Philosopher's Stone*, but following Stanley's example, the Record numbering system was simply to add the ½

to a plane intermediate in size between two whole numbers – so it's bigger than a 5 and smaller than a 6. So much for stating the blindingly obvious, but that wider cut of a 60mm blade instead of 50mm and the increased momentum of 2.7kg on the move endow this jack with an extra oomph that really comes into its own when there's a big surface area in front of it. The 5½ is also an inch longer than the 5, so if flattening is your goal, that's a definite advantage.

Despite the block-built nature of the surface, there is some pattern to it, in that the long-grain is largely aligned with the length of the bench, so the best direction for planing was at 45° (**photo 7**), going across the grain more or less equally for all blocks. And so as to maintain evenness at the end of each series of passes, I switched direction through 90° to return along the bench (**photo 8**),



7 Working across the surface at 45° with the Record 5½...



8 ... and again at 90° to the first pass



10 Celebrating too soon – there's a way to go yet



9 An improved grip to spare the little finger



11 Scribing a sight line to make a winding stick

again at 45° – but this time planing south-easterly instead of north-easterly.

To reduce the effort required with a heavy plane, I had sharpened the blade and set it with an easy-going projection, which did the trick in minimising tear-out, but at the expense of prolonging the job. It seemed an age had passed before I'd brought the highs down to the level of the lowest low. A routine check with the straightedge showed me just how deep I had yet to dig. And while it was satisfying to see a heap of shavings as the mounting evidence of progress, it was important to keep the area where the plane was working well swept, otherwise it would ride on a layer of dust and be less effective.

### Improved grip

A more personal observation concerned my little finger. It was being squashed. I've experienced this with my other metal-bodied bench planes too, although not with my old wooden planes. So I measured the finger space between the top and bottom of the rear handle for both the 5½ and the wooden jack, and found there's 6mm less on the metal plane. A swollen joint on the ring finger of my right hand, arising from some childhood escapade, makes this cramping more than usually significant, piling pressure onto the little finger below it on the handle. This led me to try a new grip – extending the little finger along the base



12 Sighting between winding sticks to check for twist



13 Smoothing the surface with the Stanley No.7



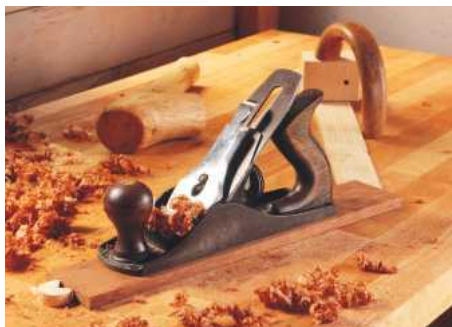
14 Barking a maple pole with the drawknife to brace the bench



15 Fitting rustic ash and maple diagonals to cure racking



16 Set fine, the Record 5 1/2 straightens an edge for the planing stop



17 A teak cross-piece clamped by a bird's beak batten, crook holdfast, and bench dog

of the handle, in dainty tea-cup style (photo 9). For me, this is a lot more comfortable, and if anyone else finds a plane's rear handle a bit of a squeeze, it may be worth a try.

Incidentally, it's that forward reaching base to the handle, necessary to attach it to the metal casting, which is responsible for the cramping; on my wooden jack, the handle slots tenon-like into a mortise in the stock.

Flattening a working area of the bench in isolation, a year earlier, had actually made the current effort more difficult. Having born the brunt of the damage from misdirected saws and drills, this area was gouged and kerfed like a Somme battlefield. Yet as the plane bit into it, bringing the pale pink hue of virgin beech to the light,

I felt a twinge of regret seeing that injured surface disappear. As projects pass over it, a workbench develops a kind of landscape, with a story behind every scar and stain. In a sense, a workbench is a historical document as telling as any other to the eye that knows it.

Taking a breather from planing, I next painted the inside of the shed with a light grey wash, a background I find less distracting than the syrupy wood preservative it covered up. Returning refreshed to the bench, the straightedge soon indicated an all-over flatness, and now I planed up a second straightedge so that I could use the pair as winding sticks to check for twist. A sight line scribed lengthways on the far stick assisted visibility when, by placing the sticks across the

bench, one at each end, and sighting over the top of the near edge, I could see by any deviation from parallel if the bench surface was twisted or, as they say, 'in wind' (photo 11). Happily, there was no perceptible twist and I could move on to smoothing the surface (photo 13). Thanks to a rush of blood to the wallet in a local antiques shop some months earlier, I had just the tool for this – the vintage Stanley No.7 mentioned earlier.

Much as I love working with wooden planes, when I caught sight of this low-slung jointer lying in the shadows, my pulse raced as I suspect it does for some when a Ferrari flashes past the family hatchback. Dating from about 1890 – the age of steam – this No.7 lacks the adjustable frog of later planes but the relationship between mouth and blade is just about perfect in any case. In doing its stuff of shaving the bench surface smooth, it slid back and forth like a well-oiled piston.

### Cure for racking

To complement my quest for a level surface, I decided to tackle a problem common to inexpensive workbenches, this one included, which is racking – an inherent weakness of the right-angled rectangular design. The best cure I've found is to fit diagonal braces, effectively triangulating the structure; while it only takes a good shove to convert a rectangle into a lop-sided parallelogram, you can't change the shape of a triangle without destroying it altogether.

As an antidote to all this fussing over flatness and perpendicularity, I found some ash and maple poles I'd brought home from the woods, barked them with the drawknife (photo 15) and screwed them across the diagonals of the sides and back in all their rustic glory (photo 14). They'd be no more effective for being squared up and smoothed down, and may even be less so for having lost some of their bulk. As a hybrid woodworker as happy with the axe and a bit of greenwood as with the plane and a seasoned board, I like to see something of the unconverted tree about the place.

That said, in working without a fixed vice, some of my rough-and-ready clamping techniques with dogs and wedges have proved an ongoing source of frustration. For narrow boards the all-wooden combination of a crook holdfast, bird's beak batten and bench dog is effective (photo 17), but for any board wider than the plane itself the set-up is precarious. True, a planing stop can be improvised with a batten fixed across the bench using G-clamps, but a dedicated planing stop would be so much more convenient (photo 16).

Rummaging around for suitably-sized stock, I found some parts salvaged from an old drawer and, when the varnish had been scraped off, I discovered I had two beautiful tropical hardwoods. One, a lovely piece of tea-coloured teak for the cross-piece, and two, a rosy piece of Honduran mahogany for the fence that would hook over the edge of the bench. I haven't worked genuine teak in a while, and was almost overwhelmed by its aroma released by the plane – as if the lid had been lifted on a spice chest. The cross-piece ended up at 10 × 60 × 340mm, and the fence at 10 × 30 × 200mm. I scribed quadrants on the ends of the fence with a dinky set of Moore & Wright dividers (photo 20), smoothed the curves with a spokeshave, then assembled the planing stop with screws using an engineer's protractor as a guide to 90°.

With the brace and 25mm centre bit I bored a hole in the cross-piece to correspond with a dog hole in the bench (photo 18), so that the stop could be anchored by a wooden peg (photo 23). I didn't know until I tried it how firm this arrangement would prove but I'm happy to report it's rock solid. And like the chestnut holdfasts

and ash bench dogs, a wooden planing stop has the advantage over a metal one in posing no danger to an errant blade.

### A workaday finish

Bearing in mind that my workbench isn't a dining table (though occasionally the reverse has been true, unofficially) I opted for a wood-protecting workaday finish of boiled linseed oil (photo 24) – a quicker drying alternative to raw linseed oil. Even wearing a washing up glove, in the warmth of the shed this pungent liquid crept everywhere and I came indoors smelling like a horse's nose bag.

On top of that, with the grain of so many beech blocks running in contrary directions, and absorbing oil to differing degrees, the result was unavoidably patchy. In fact, although I'd achieved the flat surface I'd wanted, the more I looked at it, the less I liked it. The problem was that it looked too bright and new – an aesthetic judgement, I know, of no practical consequence – but I just had to tone it down to a more subdued shade if I was to feel happy working here.

Latter-day exponents of the 'distressed' look might suggest attacking the surface with a bicycle

chain, but I opted for a more gentle treatment with a dab of black shoe polish (photo 26). I'd used neutral shoe polish successfully on wood before but it did feel risky rubbing in the black variety. Although initially the surface resembled an oil spill on a sandy beach, given a bit of elbow grease, cutting back with a scraper and steel wool, the darker areas mellowed, and a more even tone evocative of the well-used bench took shape. And there's a pleasing spin-off, too, in the shed's aroma, now redolent of the distant mornings when I would polish my kids' shoes before school. **www**



18 Boring a 25mm hole for the peg



19 Checking the edge of the fence is square



20 Scribing a radiused end on the fence



21 Cutting away waste with the coping saw



22 Smoothing a radiused end with the Stanley 53 spokeshave



23 The planing stop is anchored by an ash peg



27 Finally, a flat bench with a more venerable look



24 Applying boiled linseed oil, to myself also



25 The bench, all flattened and oiled



26 Rubbing in the black wax shoe polish



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### Clarke TABLE SAWS

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**£87.59** INC.VAT

**LEG STAND KITS FOR CTS100 AND CTS11 ONLY £27.59 INC.VAT**

INCLUDES LEFT & RIGHT TABLE EXTENSION

GTS10D

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

### Clarke 4" BELT/ 6" DISC SANDER

**NEW**

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

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### 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°

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SHOWN WITH OPTIONAL LEG KIT CLKS £19.98 EXC.VAT  
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### EVOLUTION FURY5-S TABLE SAW

- 1500W motor
- 0-60° mitre gauge
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### Clarke WOODWORKING VICES

**STANLEY Record**

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

Clarke CH152 Bolted	150/152/61	£14.99	£17.99
Stanley Clamped	72/60/40	£17.99	£21.99
Multi Angle			
Record TV75B Clamped	75/50/32	£20.99	£25.19
Clarke VW7 Bolted	180/205/78	£29.98	£35.98

### Clarke QUALITY CAST IRON STOVES

8kW

OVER 22 QUALITY STYLES ON DISPLAY

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FLUES, COILS & ACCESSORIES IN STOCK

BARREL II

### Clarke 6" BELT/ 9" DISC SANDER

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

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**MTABO 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

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	5-10.5kW	£179.00	£214.80
DEVIL 7025	400V	22kW	£299.00	£358.80
DEVIL 7030	400V	30kW	£349.00	£418.80

### Clarke STAPLE/ NAIL GUNS

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NEW

CONSN18LIC

SPARE NAILS & STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

MODEL	TYPE	STAPLE/ NAIL GAUGE	EXC. VAT	INC. VAT
CC148	Cordless	4.8V Ni-MH 22/18	£29.98	£35.98
CESN62	Electric	18/18	£39.98	£47.98
CONSN18LIC	Cordless	18V Lithium-Ion 18/18	£109.98	£131.98

### Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

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CMFT250

### Clarke 1" BELT/ 5" DISC SANDER

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

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

CBS1-5

### Clarke POWER PLANERS

CEP1

BLACK & DECKER

82mm cutting width

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

MODEL	MOTOR	DEPTH OF CUT	EXC.VAT	INC.VAT
Clarke CEP1	650W	2mm	£28.99	£34.79
Einhell TE-PL850	850W	3mm	£52.99	£63.59
B&D KV750K - GB	750W	2mm	£37.99	£46.59

### Clarke CROSS 450W RANDOM ORBITAL SANDER

- Adjustable front handle improves control
- 7000-14000rpm

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

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### Clarke BELT SANDERS

Makita

- Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK

BS1

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was £113.99 inc.VAT

### Clarke TURBO AIR COMPRESSORS

airmaster

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

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

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

CS4-8

### Clarke STATIC PHASE CONVERTERS

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

PC60

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

CONVERT 230V 1PH TO 400V 3PH

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

### Clarke ELECTRIC POWER FILE

CPF13

- Variable belt speed
- Tilting head

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

\*Black & Decker

### Clarke CIRCULAR SAWS

CON185

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

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

\*Includes laser guide

MODEL	MOTOR	MAX CUT (mm)	EXC.VAT	INC.VAT
Clarke BS1	900W	380	£38.99	£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 top trough
- LxWxH 1520x620x855mm

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CHB1500

### Clarke DISC SANDER (305MM)

- Powerful, bench mounted 900W
- Dust extraction port

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CDS300B

### Clarke BELLTLESS SHELVING/BENCHES

Simple fast assembly in minutes using only a hammer

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CHOICE OF 5 COLOURS & GALVANISED STEEL

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

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

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

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- Ideal for bevel cutting (0-45°)

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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 CIRCULAR SAWS

CON185

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

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

\*Includes laser guide

MODEL	MOTOR	MAX CUT (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 (L)	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC23SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR*1400W	24/21ltr	£99.98	£119.98	

### Clarke SHEET SANDERS

CON300

- Ergonomic design for optimum comfort

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

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
CON200	190x90mm	150W	£16.99	£20.39
CON300	230x115mm	330W	£34.99	£41.99

### Clarke PORTABLE THICKNESSER

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

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Simple fast assembly in minutes using only a hammer

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CHOICE OF 5 COLOURS & GALVANISED STEEL

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

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

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

### 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

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### Clarke PLANERS & THICKENERS

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

COBS1

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

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- Dust collection port
- Inc. sleeves, drum & belt

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

**BEST SELLER**

MODEL: CMS10S2

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

MODEL	210/30	60/120	£59.98	£71.98
CMS10S2	254/30	78/340	£139.98	£167.98

**Clarke CONTRACTOR BOSCH JIGSAWS**

• DIY #Professional

MODEL: CON750

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	£33.99
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

MODEL: CBS190B

MOTOR THROAT SIZE EXC.VAT INC.VAT

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

MODEL: CBS300 CBS350

THROAT DEPTH MAX CUT 90° CUT 45° EXC. VAT INC. VAT

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 MITRE SAWS**

• Laser Guide  
• Sliding Compound

MODEL: TC-SM2131

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

MODEL	210/30	60/120	£59.98	£71.98
TC-SM2131	210/30	62/310mm	£129.98	£155.98
TC-SM2131	250/30	75/340mm	£159.98	£191.98

**Clarke BISCUIT JOINTER**

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

MODEL: TC-BJ900

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
TC-BJ900	860W	14mm	£49.98	£59.98

**Clarke MORTISING MACHINE**

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

MODEL: CBM1B

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
CBM1B	174.99	95mm	£209.98	£259.98

**Clarke ROUTER TABLE**

Router not included

MODEL: CRT-1

THROAT DEPTH MAX CUT 90° CUT 45° EXC. VAT INC. VAT

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CRT-1	305mm/12"	165mm	115mm	£399.00	£478.80
CRT-1	340mm/14"	225mm	160mm	£498.00	£597.60

**Clarke GRINDERS & STANDS**

• Stands come complete with bolt mountings and feet anchor holes

MODEL: CBS300 CBS350

THROAT DEPTH MAX CUT 90° CUT 45° EXC. VAT INC. VAT

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 FOLDING MITRESAW STAND**

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

MODEL: CFMS1

EXC. VAT INC. VAT

MODEL	EXC. VAT	INC. VAT
CFMS1	£66.99	£80.39

**Clarke SCROLL SAWS**

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

MODEL: CSS400C

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
CSS400C	85W	1450	£82.99	£99.59
CSS16VB	90W	550-1600	£94.99	£113.99
CSS400C	90W	550-1600	£114.99	£137.99

**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 workshop, shelf and floor

MODEL: CWT51

EXC. VAT INC. VAT

MODEL	EXC. VAT	INC. VAT
CWT51	£28.99	£34.79

**Clarke ROUTERS**

• Powerful heavy duty machines ideal for trade and DIY use

MODEL: CR2

THROAT DEPTH MAX CUT 90° CUT 45° EXC. VAT INC. VAT

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CR2	305mm/12"	165mm	115mm	£469.99	£563.99
CR2	340mm/14"	225mm	160mm	£563.99	£667.99

**Clarke DRILL PRESSES**

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

MODEL: CDP152B

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
CDP152B	350/5	566.99	£80.39	£99.59
CDP102B	350/5	£79.98	£95.98	£119.98
CDP152B	450/12	£139.98	£167.98	£202.00
CDP202B	450/16	£185.99	£228.79	£282.00
CDP10B	370/12	£189.99	£238.79	£292.00
CDP352F	550/16	£229.00	£274.80	£338.00
CDP502F	1100/12	£499.00	£598.80	£738.00

**Clarke 13" MINI WOOD LATHE**

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

MODEL: CWL325V

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
CWL325V	149.98	179.98	£149.98	£179.98

**Clarke DETAIL SANDERS**

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

MODEL: CDS-1V

POWER (W) DEPTH OF CUT EXC. VAT INC. VAT

MODEL	POWER (W)	DEPTH OF CUT	EXC. VAT	INC. VAT
CDS-1V	105W	£19.98	£23.98	£29.98
CDS-1V	280W	£29.98	£35.98	£41.98

**Clarke 12" DOVETAIL JIG**

• Simple, easy to set up & use for producing a variety of joints  
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Photographs courtesy of Storm & Shelter & Jeremy Spencer



Tretower Court, Monmouthshire, where Welsh longbow men gathered before Agincourt

# The making of a Medieval longbow

Jeremy Spencer tells John Greeves how he would go about crafting a longbow for first time bowyers

The combination of longbows and arrows were referred to in former days as 'artillery' and had the same deadly outcome as a modern weapon today. The longbow resonates in its historical associations with medieval warfare and is best remembered for its effective use against the French during the Hundred Years' War at the battles of Sluys (1340), Crécy (1346), Poitiers (1356) and perhaps most

memorably at the Battle of Agincourt (1415). It's often assumed that the longbow disappeared with the use of gunpowder and canon but the finds from the *Mary Rose* show how the longbow continued to play a significant part in warfare for a very long time. Much of what we know about the medieval longbow is based upon 137 longbows recovered in the early 1980s from this Tudor warship. Not all longbows were made of yew, however. Gerald

## TOOLS & MATERIALS REQUIRED

### Tools

- Drawknife
- Callipers
- Rasp
- Bandsaw
- ½in spade drill
- Drill
- Tiller
- Scraper
- Pencil
- Axe
- Wood saw
- Wedges

### Materials

- 2.1m (approx.) hazel stave
- PVC glue
- Bow string
- Cow horn (optional)
- Linseed oil (optional)
- Beeswax (optional)

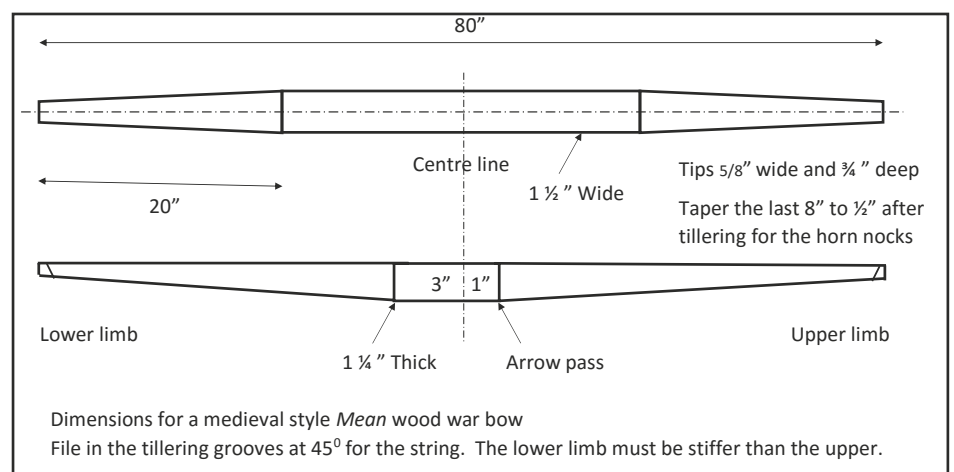


Fig.1 Bow dimensions



1 Wych elm – a typical size of stave to cut



2 A stave being split with an axe



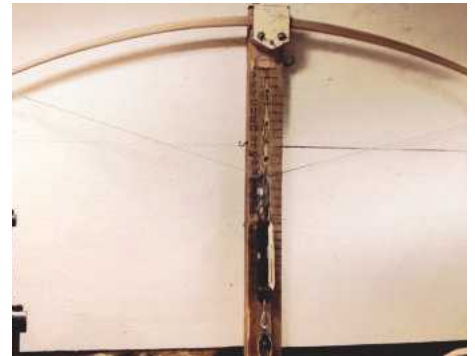
3 Roughing out a stave



4 Ash bow section and contour gauge



5 Cross-section of a bow



6 Initial tillering of a character stave with long string before bracing the bow

of Wales refers to the crude unfinished bows used by the Welsh men of Gwent as being made of elm, which were “astonishingly, stiff, large and strong,” and were produced for utilitarian purposes and not for their pleasing appearance.

The preferred material for making a longbow was yew, but this became rapidly depleted with serious shortages arising as early on as 1350. This further led to the use of a variety of other woods being employed to craft the longbow, especially for practice bows, hunting and even for war.

Roger Ascham's *Taxophilus* printed during the reign of Henry VIII was the first book on archery. His writing on longbows refers in part to what he calls 'mean woods', which are alternative or average woods that can also be used in the construction of a longbow: “As for Brazil, elm, wych and ash, experience doth prove them to be but mean for bows; and so to conclude, yew of all other things, is that where of perfect shooting would have a bow made.” Ascham refrains from giving measurements of bows or arrows on the grounds that individual variations make that impossible, but we know bows were made to the height of individuals or even taller.

### Welsh warbows

Wales has always been associated with the longbow. Many archers were prominent through the whole of the Hundred Years' war. Warbow Wales undertakes experimental archaeology in this field. It was set up by Jeremy Spencer (Master War Bowyer of The Craft Guild of Traditional Bowyers and Fletchers) to bring together like-minded people who wanted to make and test the capabilities of materials used in the construction of traditional warbows and arrows that were available during the Medieval and Tudor periods.

### The Longbow's constitutional parts

It has been said that archery is about two sticks and a string. A longbow is a Self Bow and is made from a single piece of wood called a bow stave. The bow has an outer flat side called a back, which is held away from you when shooting; whereas the belly of a bow is the rounded side, held towards you when shooting. The upper and lower parts of the bow are referred to as limbs and the nocks are the grooves cut in wood of the bow itself, or in horn in which the loop of the bowstring fits.

### MAKING YOUR FIRST WARROW

Fashioned by a master bowyer, from one of many indigenous woods, a functional weapon can be made in around two hours. Jeremy has spent 17 years making hundreds of warbows from different woods and still admits it's an ongoing journey of discovery.

### Selecting the timber

To buy an elm stave would probably cost you in the region of £200 and Jeremy recommends those starting out for the first time to use a material such as hazel or ash. “Look for something which is as straight as possible,” he advises. Hazel can be found in abundance and makes an excellent choice as it is often coppiced and grows straight up without sending out side shoots and can be obtained from the average woodland or even the garden hedge in the autumn and winter months when the sap is down. It's relatively easy to work but, like all things, the craft improves with practise and won't cost you the earth if you make a mistake. Cut a hazel stave 2.1m in length with a diameter of around 70mm. The finished bow would be less than this length; somewhere in the region of 1.8-1.9m.

### Splitting the hazel stave

You can't really tell the quality of the stave until you have split it. The stave is split and not cut down the middle. Splitting starts from the centre using wedges, and when you split the wood, it automatically follows the natural rhythm of the grain in the wood. Occasionally a poor stave grain twists like a corkscrew if it's become wind twisted and there's nothing you can do about this other than start again. It's very rare that hazel will actually do that. You want the thickest part to be in the centre and the thinnest bits to be at the end, so avoid splitting it the wrong way, because if it does run off you'll end up with a child's size bow. Jeremy always splits his stave on the grass. When you split it you want the majority of the knots in the belly of the bow where compression takes place and not on the back of the bow where tension occurs. You keep the two cleanest sides for the back of the bow. The cross-section should be a shallow 'D' shape with the sapwood of a flat back. You can split with an axe by hammering it in, but ensure to wear safety goggles to avoid any chips that can fly from some of these hard axes.

### Seasoning

Once you've split the hazel stave down, you need to seal the ends up. Do this 75mm from the ends with PVA or wax. This stops them from splitting. The wood on the outside dries quicker than that on the inside where the remaining bark forms a largely waterproof covering. The inside can be quite moist and it's important not to dry it out too fast. You need to leave it in a shed or an unheated room for six months before it's ready to be turned into a bow. “You're looking to get moisture down to 10%,” Jeremy tells me, “before you start to rough out.”

### Roughing out

At this stage you are reducing the wood down to near bow size dimensions. You can do this either using a bandsaw or with a side axe (just sharpened on one side rather than a sharpened 'V') – some people even use an angle grinder. Basically you calculate the dimensions of the bow: you do the widths followed by the tapers. Cut it about 40mm wide and about 30mm deep. Note halfway down each limb, the depth tapers and usually drops 1mm in depth every 75mm.

You also need to taper the width of it. That usually tapers about halfway down each limb if you start from the centreline of each limb. These usually taper from the 40mm full width down to 15mm at the tips, which is a little bit wider than the actual finished tip when you horn knot it.

If the stave has a 'snakey' profile (it's easier if it doesn't), make sure the centre of the bow and tips line up. You can check this with a taut string. Using a biro pen is best for marking out as it doesn't rub off accidentally, but it's just as easy to remove as a pencil during the final sanding.

If the back is finished, you can remove the bark if you choose. Hazel is unusual, as Jeremy informs me you can actually leave the bark on, the remaining bark being removed with a cabinet scraper. There will be traces of cambium and a few raised areas where the knotted parts are best left proud. Avoid cutting through one of the growth rings – again, the cambium can be left on to provide good camouflage.

### Tillering

Once the bow shape has been achieved it has to be tillered by being drawn back with a cord and a pulley to observe the bend of the bow. This is done to prescribed notches and finally to its full draw length where further work can take place.

Initially file in the grooves at either end and fit on a string for initial tillering. Use a slightly longer string than you would normally use on the bow, and gradually tiller it down to give roughly a circular bend that creates a slight ellipse rather than an arc. Having too much bend in the handle area leads to hand shock while shooting and excessive string follow or permanent deformation. It's essential that you don't torture the wood too much while a smooth ellipse is being established. "It needs to be more elliptical than circular; if you haven't got that nice elliptical curve then you have to work on certain parts to produce it," Jeremy tells me. It's important to remove wood with smooth transitions and not to create hinges. This can be done by marking the stiff areas with a pencil and then using a scraper to remove excess

### FURTHER INFORMATION

The Welsh Longbow – Warbow Wales  
[www.warbowwales.com](http://www.warbowwales.com)

The Mary Rose Trust  
[www.maryrose.org](http://www.maryrose.org)

\*Anne Curry, Agincourt 1415, *The Archers' Tale* (Tempus Publishing, 2008)

wood. You need to work carefully: remember, you can always take more wood off but you can't add it back on!

While tillering, you never pull it down past the draw weight you want. Military draw weights would start at 100lbs and some have been made to take up to 160lb draw weight, but remember in the Olympics, men today will be shooting a 50lb draw weight and for a first time bow this would be more than sufficient for your needs.

### Horn nocks

With lower draw bows you don't necessarily need to put horn nocks on and you can just use grooves filed in the wood to produce a self-nocked bow.

If you want horn nocks, then trim the horn on the sides. Drill the horn to the required depth using a ½in spade drill and grind it into a cone or a 'V' shape. At this point you can cut a groove in the tip, either a regular front slot or a more accurate side slot. Once made you can glue it to the conical tips.

### Attaching the string

"Most people starting out won't use a hemp string," Jeremy informs me. "You could use Irish linen thread to make a string, but avoid anything that looks bleached." You want natural colour or

the bow string is too weak. A modern bow string would be fine to begin with, as Jeremy reminds me, but it's perhaps just as well to undertake 'one experiment' at a time.

### The finish

An additional finish could be achieved by using linseed oil or beeswax, but it's worth getting into the mindset of those who first made them. This is a utilitarian weapon; something a drover might fashion from the hedgerow. It's not designed to be a piece of furniture hung up and just viewed. Even the *Mary Rose* bows had an honest finish with some of the tool marks left on them.

When referring to the *Mary Rose* longbows in her book\*, Anne Curry states: "Some bows were roughly formed while many others featured nocks carved from horn or antler for taking the string." Function and utility it seemed always outweighed aesthetic appeal and what mattered always in the past was the effectiveness of the bow as a weapon.

All that's left to do now is to brace your bow. It won't be long before you've become a toxophilite (a student or lover of archery), but always remember to unbrace the bow once you've finished shooting. **WW**



7 Character staves with uneven profile should 'only come around' to an arc at full draw. Straight staves are easier for beginners



8 The stages of horn nock production (from left to right) – the cut off tip drilled with a cone, worked down, and awaiting polishing and grooves



9 A 130lb elm bow being drawn



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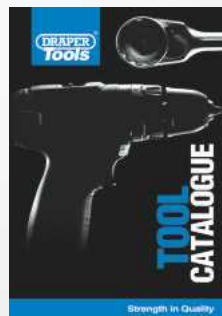
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# "Brace yourself, this is going to be a bit boring"

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Jennings and Irwin sets

**Gary Cook gives us a glimpse into his impressive collection of bit sets and also advises on how best to go about sharpening them**

**T**he basic idea of the auger bit relies on the idea from Archimedes in 250 B.C of the 'water screw', which when in action, could lift water uphill.

Some time around the 1770s a gentleman by the name of Cook (no relation), developed the twist drill idea, with a simple wooden 'T' handle being added to a metal auger that could drill straight, ejecting the shavings as it went.

Further developments, notably by Gedge and L' Hommeideau, led to a patent by Russell Jennings for a bit pattern in 1855, which became the industry standard.

## Irwin & Jennings sets

Two bit sets I've used for my jobs in conjunction with a basic Stanley brace are an Irwin set and a Russell Jennings set (see main photo). The Jennings bits are generally thought of as better for hardwoods, with a finer, double-threaded lead screw, while the Irwins have a coarser single lead thread and are therefore suited for softer, gummier wood. Some people generalise by saying Jennings



Jennings with Stanley brace

is best for cabinetmaking and suchlike and Irwins for more basic jobs, such as removing waste from large mortises and framing. I've found that if you are slow and careful, the holes are very similar, only the speed of cut differs slightly. With a properly sharp auger, you shouldn't need to press down hard on your brace, as the auger should screw into the wood. You may also need an auger file to keep the 'spurs' sharp on the bits and it's worth reading up on sharpening techniques, too.

## Sharpening spurs & augers

The most important thing is that when you are sharpening, you mustn't remove material from the outside of the bit. Instead, file the same angles that are on the insides of the spurs or wings. You can even improve the lead screw if you are careful with a needle file.

The sharp spurs on the edge of the auger cut the fibres of the wood, making a very clean hole, with the main bevel of the blade lifting the wood out. It depends on the maker, but some bits only have one spur.

Russell Jennings made the more common '100' bit set, (pictured), but also made a '101' set, which was more like the Irwins with a coarse single thread point and again, better for softwood. The Irwin bits pictured, with single flute around a solid core called the Irwin Pattern, appears as early as 1884. These are the twist bits that have spurs projecting down in the same direction as the centre spur or screw. Earlier versions prior



An interesting collection of brace bits with uncommon styles



Irwin bits



Jennings bits



Hole drilled using a Jennings bit

to Russell Jennings' improvement had the spurs formed on the topside towards the shank.

If you're trying to buy a decent vintage set of Jennings bits, they can usually be found in a three-tiered box (patented in 1890) and it is worth searching for these as a boxed set, as full sets are becoming rarer. Irwin bits are easier to source, being more modern, but both are worth buying. Bits are sized in  $\frac{1}{16}$  increments, the '16' being one inch.

## Brace bits

Russell Jennings bits were made in Deep River, Chester (US) until 1960, then Connecticut, before being sold to Stanley in 1944. Irwin Tools has made brace bits for over a century and they still sell auger bits for braces.

I also buy interesting sets of brace bits with uncommon styles, as can be seen in the green felt roll opposite. There are some spoon bits, gimlet bits, gouge bits, spade bits and many other types in this mix. Invariably they are designed for special use. Some are quite delicate, but they are all interesting to own. **WWW**



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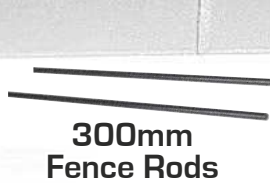
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## ★ STAR LETTER

The view from Randal's workshop – mountain not visible in rain!



## Woodworking in the wild

Hi Mark,

Over the years I have often pondered on the various problems that woodworkers face in their efforts to 'make something'. Having discussed this subject with many other wood and metalworkers, I discovered that I'm not alone. It's a bit like not enough cramps or not enough storage; it seems that many have thought long on this subject.

While in snowy areas the roofs have a high pitch, here in outback Queensland the verandahs protect against the harsh sun and down-pipes direct every possible rain drop to a holding facility: in some areas a basement 'shop' is the preference and/or the only possibility.

### Flora & fauna

Recently I was sitting at a desk when cyclone Debbie was cruising down the Queensland coastline wreaking destruction in her path and causing flooding far and wide. She was some 1,000 kilometres away from me: the rain was heavy but nice and nothing new for Queensland. As I sat and looked out the window, protected by a cantilevered roof, and enjoying the bird calls, I once again pondered the associated global concerns with wood-working. Earlier I had been to my workshop and batted down the hatches as best as possible, and could almost view the surface rust growing on my table saw despite its 'machine cover' (metal sheds are cheap and strong but condensation therein is a reality). I had done all I could, so locked up the shed to withstand the possible ensuing battering. I myself have experienced and witnessed over 300mm of rain in a few hours, on a few occasions, sometimes coupled with gale force winds and bullet-like rain.

I thought about tornados, tsunami and tidal waves, hail storms, southerly busters, malaria, lymes disease, lions, moose, bears, snow and sleet, flooding, crocodiles, European wasps, and terrorists, etc. People are tenacious and resilient, and survivors.

But what does this all mean in the 'shop or as we call it 'The Shed'? Today's home is in the Noosa hinterland and we live with our head in

the clouds on some days; and the clouds mean moisture. Beside humidity, it comes with insects and wildlife of all descriptions. Apart from the many species of birds, the wildlife includes echidnas, kangaroos, wallabies, reptiles (such as many species of goanna, lizards, and snakes), frogs, dingos, bandicoots, antechinus, etc. and ferals like foxes, wild dogs, toads, field mice, the odd cat, native and introduced rats, with *Rattus rattus* being the worst. Because of this pest, the coastal taipan has evolved in just two centuries and knows not to grab this villain because if bitten by it, the snake itself will also die. The snake has learned to strike and retreat many times and is highly toxic (second or third in the world – debate still ongoing).

Most fauna aren't a concern but we do need to adjust to our environment. Our common mud wasp is a real nuisance: it kills spiders and stores the dead in its cocoon style home (around 3 x 1cm) for the young to eat at birth. Just what has this to do with us 'woodies'? Dressed and/or sanded wood can't be stored as these tenacious insects land and search out tiny crevices, gaps, dados, slots, and the like in which to hide their young's home. The 'mud' is so gluey it penetrates even very hard Australian hardwoods resulting in wasted time, effort and money. Other mud wasps build homes in smaller places like air hose fittings so all air tools need to be stored in a container or plugged with (as I do) a cork with a reasonably tight fit or have a small grinding wheel (as for a Dremel or a drill) inserted into the air fitting. Even smaller wasps (thankfully less common) will build nests in and block air vents in power tools so such tools need to be stored in insect-proof containers – pretty hard even with a plastic bag for table routers, etc.

### Encounter with a taipan

When it comes to the workshop, if a mouse can enter a hole, so can a snake, and as large as a python. After storms and flooding back in 2003, sometimes I would enter my shed and the hairs would stand up on the back of my neck – instinct or whatever you may call it – so I would carefully

place down anything I was holding and leave the shed in an orderly fashion. This scenario only happened every week or so, then after a few months had passed I was on my way to the shed when I noticed a very large Joe Blake scurrying along the side of the 9m shed. It stopped at the other end and rose up to eyeball me as I was doing the same to it. It was taller than me and half was still on the ground! Studying it, I noticed some pale orange flecking on its belly. I had seen taipans before but was under the assumption they only grew to 3m and this grand-daddy looked somewhat longer. I rang the 'Snakeman' who asked me to describe the head and body as well as the behaviour of the reptile. After explaining the long head shape, the eyebrows, the flecks, the timidity together with the 'stop and check me out' manner, and the lightning speed, he exclaimed "Yeah! THAT IS a coastal taipan." "What can you do about him?" I asked as "he has made his home here." The instructions were clear – I had to corner the taipan and then call the guy so he could catch it. "Bu\*\*er that for a game of soldiers" as the saying goes: there was no way I was going to try to corner a super venomous snake that could potentially strike a distance of around 6m (twice its length). I had been lucky to not be bitten as a teen while trying to clobber a very long nonvenomous snake. Besides, I had read that the taipan species was the only snake that could bite through the steel cap of a boot: their fangs are like ceramics.

I used to store seldom used goods (like rural plumbing gear) in open boxes high in the shed. One day I lifted a box to gain access to the contents only to witness a curious head pop out over the top: I gently replaced the box to see this particular transient resident leave across the shelving, scraping its scales over sheet aluminium and metal. Overhead storage is now done in closed boxes or left in full view (from a distance with a ladder or step). Some years later, we went away on holiday with our boat, a tinny with a false floor. Upon launching, I found the motor wouldn't start so the family enjoyed the beach-front while the Tenterfield terrier sat quietly in the boat watching me while I unscrewed the fuel line from over the gunwale. In the peaceful silence, I noticed Ranger the dog twist his head sideways, as I had seen him do when stalking snakes, and not another hair



Not the taipan, but not welcome nonetheless!

on his body moved! Then, I heard the scales moving over the ribs of the boat: there was only one thing I had ever heard that sounded like that and it was big and too fast for a python. We had brought 'old mate' with us.

The next day just my teenage son Jack returned with Ranger and myself. Jack wanted to learn to drive the boat as the fish weren't biting. 'BANG, BONK, BANG' went the tinny over the waves and that was the last we saw of the taipan – guess he didn't think the banging boat was such a good place to live and stayed behind at the beachside.

Kind regards, **Ranald Millar**

*Wow, thanks for that, Ranald, and we think we have a bit of trouble with the odd mouse and spider – at least they're not deadly! It kind of puts things in a different light for the UK woodworker (but I don't expect it'll stop us moaning about the weather). Does anyone else have any tales of woodworking in the wild? If so, do get in touch and share your story.*

*Mark*

## Uses for broken bandsaw blades

Dear Editor,

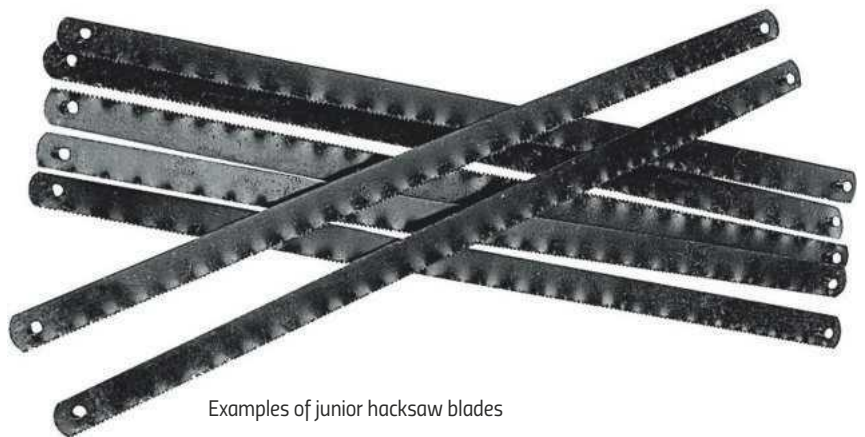
I have used lengths of old bandsaw blades as replacements for hacksaw blades for use on wood. Skip-tooth blades are no use as one cannot get enough teeth onto the workpiece to start sawing.

The appropriate length can be cut using good tinsnips or a slitting disc on an angle grinder. To make holes, for a short length of panel pin to retain the blade in the hacksaw, just heat the end in a flame to red heat and quickly, using a needle-nosed punch, drive a suitable diameter hole. For larger holes, punch the hole from both sides. The hole can be flattened by gentle hammering on a suitably hard surface, and you will still be left with long lengths of blade.

Best wishes, **Bob Gowland**

Thanks Bob,

*I would imagine one broken bandsaw blade will make quite a few shorter blades to go into a hacksaw frame. It's always very pleasing to get some more use out*



Examples of junior hacksaw blades

*of things, isn't it? I know that a lot of us have been recycling for years, since before we knew what the word meant.*  
All the best, **Mark**

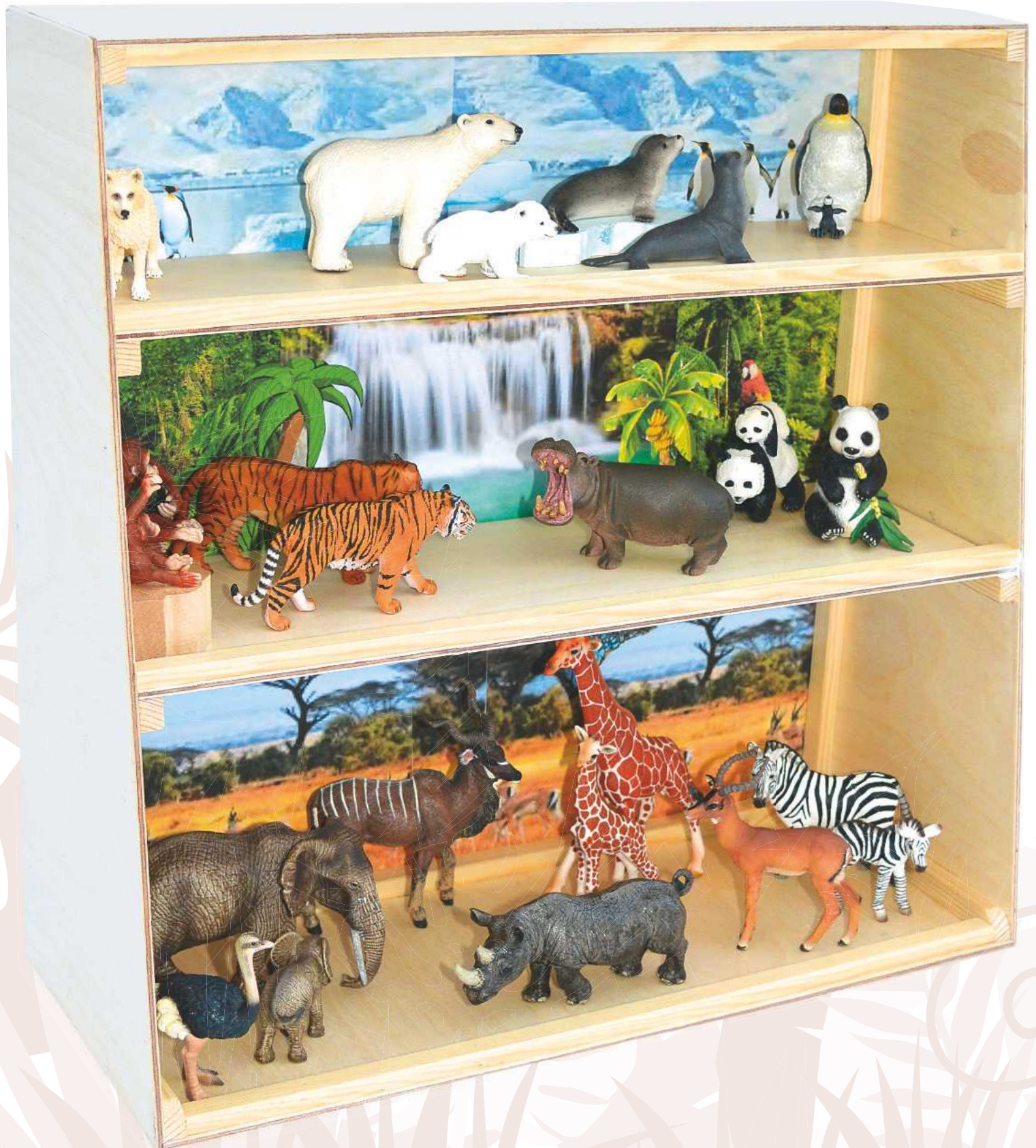
### GET IN TOUCH!

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

Email me on the usual address: [editor.ww@mytimemedia.com](mailto:editor.ww@mytimemedia.com)

Please note that all digital photos need to be greater than **1MB** in size to guarantee sufficiently good reproduction for the printed page

# TOYS ON DISPLAY



## Ian Wilkie's design for a display unit to show off a child's toy collection is an approachable and fun-to-make project

There are lots of appealing small toys for children to collect and it seems a shame to consign them to a plastic container or to toss them into the toy box. In this article my idea is to display them attractively and hopefully it will encourage small children to take more care arranging them and putting their treasures back after play, but perhaps I'm being too optimistic! My little great-grandson has already acquired plenty of toys and it was with him in mind that I decided on this project. Like many young families, he lives in a rented house and this means screwing a set of shelves to the wall is discouraged by the landlord. The house is relatively small and keeping toys stored and organised is always a challenge for a parent. This little unit is designed to stand on the floor with its back to the wall and it should be stable enough not to tip forward and spill its contents. This is also the correct height for young children that are playing at floor level. I have made it in birch plywood, which is light in weight. The example shown is intended for an ever-growing collection of model wild animals that my wife was unable to resist! I did not want to make a zoo, so this unit seemed a good idea and we designed some back friezes to suggest different habitats. These joint projects are pleasant to do, and of course, if the child is older they can be involved as well, especially in designing the backcloth. The heights between the shelves are chosen to suit the collection, with the giraffe being the tallest animal.

### PROXXON MACHINES USED IN THIS ARTICLE

#### Proxxon mill/drill system (BFB2000) and compound table (KT150)

This is the system I use for small routing projects (photo 1). I will not pretend it is a cheap option because it is not, but over the years it has been very useful indeed and I do not regret buying it. I like to use an overhead router wherever possible so that I can see what I am doing. The guard has been removed for photographic purposes.

This machine is very precise and the compound table ensures accuracy when setting up the work. The power unit has to be purchased separately, but I did economise here and the 43mm collar takes the Hegner router I am using in this project and it will also take a Trend T4 router, which at £74 is a good option. The router cutters I use are from the Trend Craft range with 3/8in diameter shanks. I made a false table from an offcut of Formica laminate with an adjustable fence (photo 2).

#### Proxxon FET table saw

The Proxxon FET table saw is extremely useful for cutting small pieces of wood accurately (photo 3). It comes with a decent TCT blade and the results are excellent. The saw is not heavy and so it is easy to store away in a cupboard when not in use. This is a small saw designed for toys, models, etc. and should be used within its capacity. The depth of cut is 1-21mm.

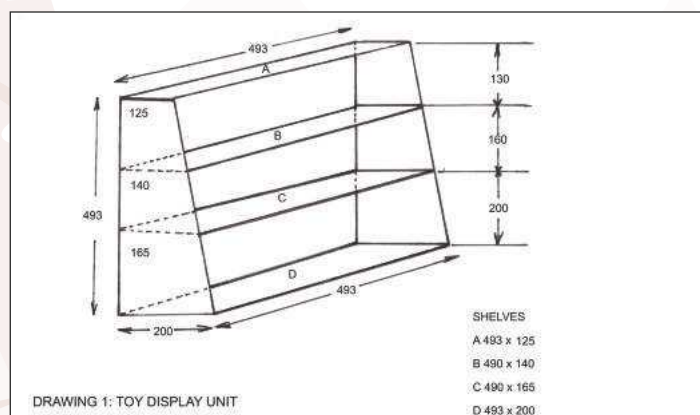


Fig.1 Toy display unit



### MATERIALS REQUIRED

- 3 sheets of 500 x 500 x 3mm-thick birch plywood – I did substitute one sheet of 3mm MDF for the back
- 8 pieces of 12 x 15 x 500mm lengths of stripwood – I used carefully selected proprietary softwood to the nearest dimensions from a DIY store
- PVA quick-drying glue
- Satin varnish
- 6 x small screws

### DESIGN CRITERIA

- Suitable for 3+ years
- Portable
- Stable
- Splinter-free
- Attractive
- Strong
- Versatile

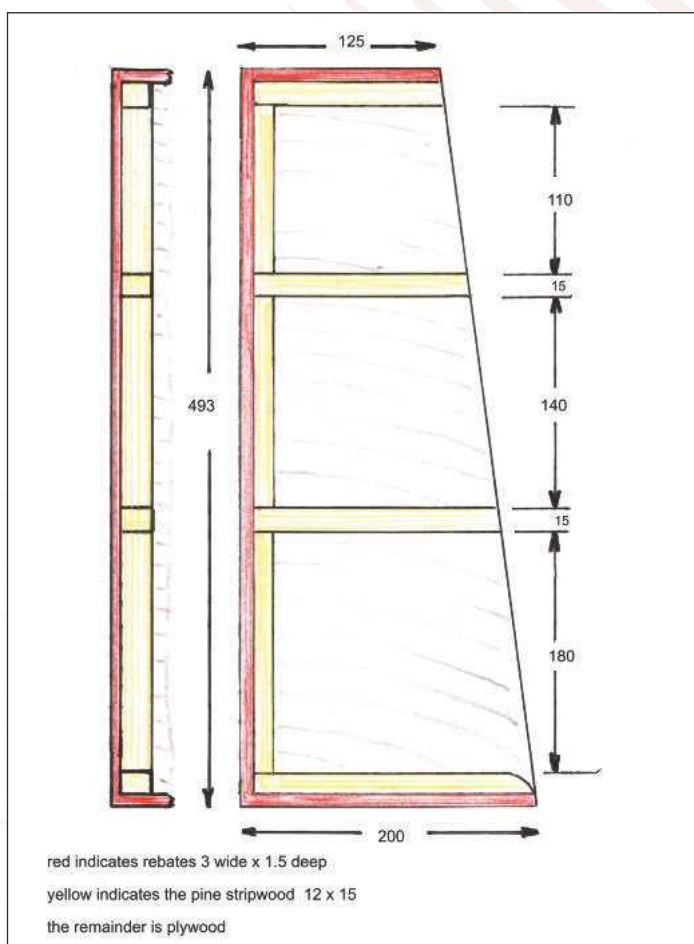


Fig.2 Toy display unit – sides



1 The Proxxon mill/drill system (BFB2000) and compound table (KT150) are ideal for small routing projects



2 I made a false table from an offcut of Formica laminate with an adjustable fence



3 The Proxxon FET table saw is extremely useful for cutting small pieces of wood accurately

### MAKING THE TOY DISPLAY UNIT



1 It is worth taking the trouble to orbitally sand both sides of the plywood sheet first, so that you have a very smooth surface to start with



2 Use Fig.1 and mark out the sides, top and bottom, shelves and back on the plywood sheets. Cut out the pieces with a fine-tooth saw but leave the back panel at this stage so that it can be cut exactly to fit at the final stage where slight adjustments may need to be made



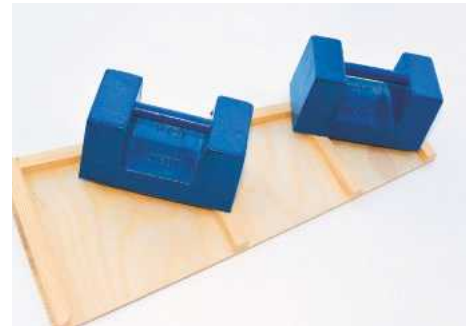
3 Rout 3 x 1.5mm deep rebates along the top, bottom and back edges of the two sides and along the back and sides of the top and bottom pieces. Using a router to form a rebate produces a neat, accurate joint but it is not essential and if you don't have a router, then you can use stripwood to form the rebates



**4** Cut the stripwood into 12 x 15mm sections and then into the lengths as shown in Fig.2



**5** Mark the positions on the side pieces where the stripwood is to be glued. Where you place the two centre shelves will be determined by the toys that are to be displayed. My spacing suits the heights of the animals and the tallest is the giraffe at 170mm. If you alter the spacing, then the dimensions of the shelf will also need to be adjusted



**6** Glue the stripwood to the plywood and hold down with weights while the glue cures. Wudcare super-fast PVA grabs in five minutes, provides a strong bond after 15 minutes and is ideal for this project. I did not want to use any metal fixings except the screws for the back panel



**7** The two sides should now match



**8** Glue the sides to the bottom piece and then proceed to clamp up



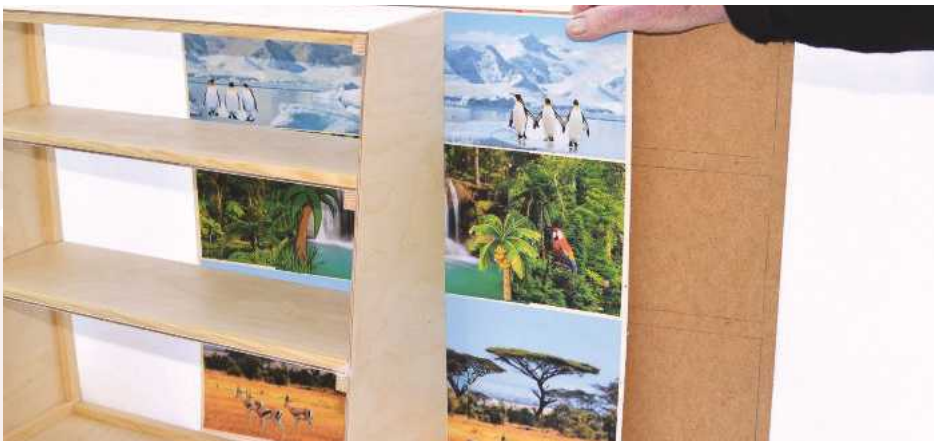
**9** Glue the shelves to the shelf supports at the back and sides and insert the top panel into the rebate. Plenty of cramps are useful as always! Cut stripwood to fit the front of each shelf and glue to the top surface to form a ledge



**10** Apply at least two coats of clear satin varnish, rubbing down between coats



**11** Measure the back panel accurately, cut slightly oversize and plane or sand to fit into the rebates. I used 3mm MDF here – the plan was to cover one side with card and to paint the other side



**12** Use the back panel as a template and cut a sheet of thin card to decorate with your design. My shelves show the habitat for each group of animals: ice and snow, jungle, and finally African grasslands. The card then fits into the rebate



**13** The back panel is finally screwed into position with six small short screws. Make sure the screw tips do not protrude



14 In go the animals, put the tiger into the jungle, and the job is done! **www**





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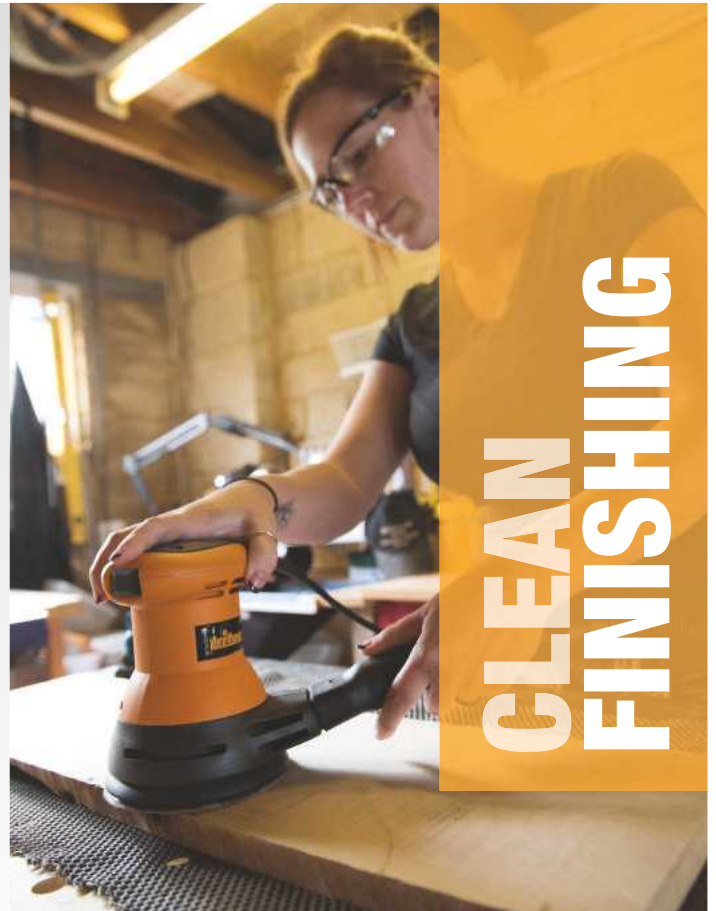


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He started 50 years ago in his living room with hand tools and a router, and from there he purchased a workshop in Shoreditch, which in the last 10 years he has converted into somewhere he can live and work: "At this point my FELDER story started," commented Ian.

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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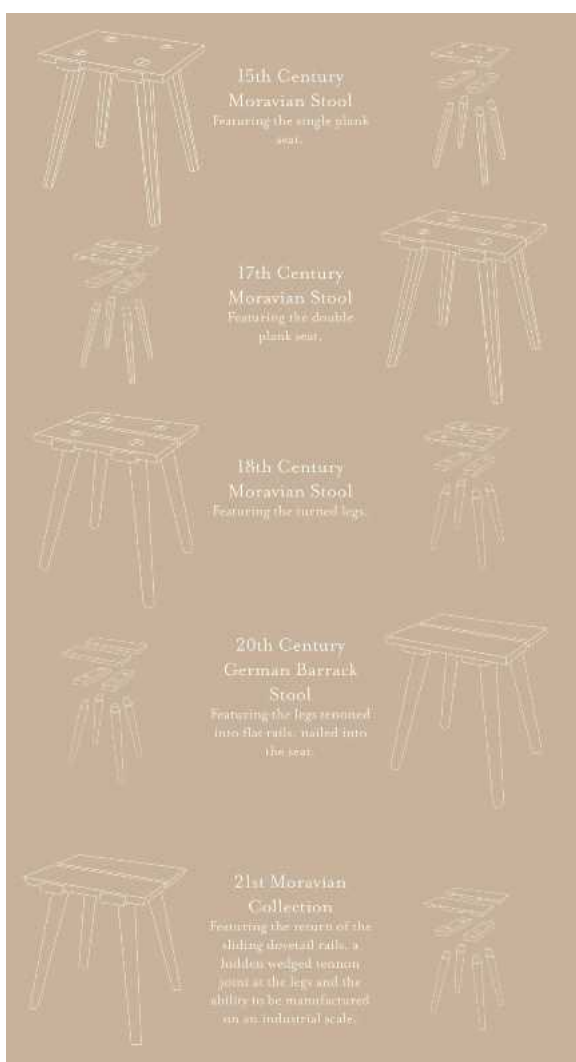
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## Bringing the Moravian Stool into the 21st century

Jasmine Craven-Huffer shares the story of how she went about updating and modernising a 500-year-old design

The Moravians were (and still are) a protestant Christian group who broke from the Catholic Church in the 15th century. Over the coming years, the movement spread from its birthplace in Bohemia right across Europe and into North America. With a philosophy of simplicity and service, their sole furniture legacy is the Moravian stool, a deceptively plain design that has become almost lost in history. The original stool featured one large wooden plank for the seat, two sliding dovetail rails, which ran square to the seat's grain and legs, piercing both the seat and the rails, with a wedged tenon to



Stepping up to design quality



1 The early softwood prototypes



2 Developing the early tryout



3 Experimenting to find optimum ergonomic comfort

hold the entire stool together. Due to the wide seat being fixed by the tenoned legs, the seat plank often developed a split but remained just as strong. To any modern woodworker, the direction of the grain should always be understood and designed into a piece. On the face of it, the Moravian design appears to completely contradict the principles of woodworking, yet the stool is still incredibly sturdy and will continue to grow stronger with age. As such, the original antique pieces with a single, split plank are a prized find for collectors.

As time progressed, the stools began to appear with a new seat. This used two narrower pieces of wood in place of one wide one while the sliding dovetail rail and legs, which pierced both parts, remained the same. Legs now turned on lathes took the place of the octagonal section, which had to be planed to shape. The design still featured the sliding dovetails and the legs and rail arrangement, meaning the more modern design (around the 18th century) was still just as robust as the Moravians' original design from earlier times.

During World War II, the design was utilised by the German occupying army in Czechoslovakia where many Moravians still lived. The stool was modified and put back into production for German barracks due to it being lightweight, easily repairable and quick to manufacture. However, due to the speed needed to produce these stools, changes were made to the design, which came at the expense of its strength. The sliding dovetails were no longer cut into the seat plank, instead rails with the legs tenoned in place were simply nailed to two planks.

Since this period, the design has almost been



4 The CNC router at work on the dovetail grooves



5 Selecting timber from the walnut department at the timber yard

lost and I hope to continue its 500-year-old history and bring it into the context of the 21st century, using the design as a platform to showcase my own beliefs in functional and responsible design.

### Design development

I made the first prototype replica, which exposed a few flaws in my manufacturing techniques. Having access to a CNC router meant I could use this to cut accurate and identical dovetail grooves for the leg rails, but it soon became apparent that the key issue here was breakage from where the dovetail router cutter had exited the seat planks. I felt that these planks would need to be wider, so that they could be trimmed after the routing process, thus cutting away any splintered edges.

I then began to assess what I did and didn't like about the replica. This lay mostly with its rather

chunky look; however, removing too much material in the wrong place could jeopardise the strength, particularly that of the joints for a long bench. This was to be my next prototype as it was an extreme of the design and I needed to be certain the thinner seat plank could hold the weight of people without requiring extra legs. I also wanted to try to correct the processes that had gone wrong previously, to make sure the final exhibition prototype would be a finished design ready for production.

Having addressed the issues that arose during the making of my original prototype, I was confident that I had found the most efficient way of manufacturing my design in the workshop setting. I made the relevant changes to my technical drawings, and together with new photos, I was ready to discuss my design with industry professionals for feedback.



6 Developing the tapered legs with the aid of jig-marks and turning callipers



7 One of the first turned legs



8 Tidying the sawn bevels on the overhand planer (Wadkin refurb)



### Material sourcing

Wanting a contrast in colour, I decided to use a combination of ash and walnut for the final design. For all the wood I considered it crucial for me, as a responsible designer, to ensure it comes from sustainably managed forests where both social and environmental sustainability is



9 Breakout from the CNC router...

considered. My two hardwoods do not come from trees which are listed as endangered or under threat, something it was easy to check on the Convention on International Trade of Endangered Species database.

With this decision made, I could begin sourcing the wood. It is important to balance both the quality of the boards with price and consideration of sustainability. A customer like myself, purchasing only a small quantity of timber, will always have to pay more than a big company. To purchase material for larger scale production, manufacturers usually order the wood in large quantities from trade suppliers or even purchase hectares of forest, which will be felled and processed by the company managing the



10 ... to be removed later on the table saw

forest. This means the price per board will be significantly cheaper, although the manufacturer will no longer be able to check the planks for problems before purchase. This often means manufacturers of furniture will usually buy planks that have been graded, something they feel is worthwhile to minimise material wastage and the associated costs.

### Manufacturing the legs

To produce the legs with an even taper that would be identical for all the legs, I made a jig with markers at every 50mm. Using these markers, I would set my callipers to the width signified at each marker. I would then carefully remove the material on the corresponding marked point on the leg until it allowed the callipers to pass through. I repeated this for each of the marker points. I then removed the material between the markers to form the taper. The entire shape was then sanded smooth with the lathe turning. To achieve a finer finish, I then sanded in the direction of the grain down the leg. To manufacture the smaller legs for the foot stool, I used the same process but made a new smaller jig to achieve the taper.

The tenons needed cutting along the centre so that they could be wedged tightly in place. Again, I made a jig which allowed me to quickly and accurately make the cuts using the bandsaw.

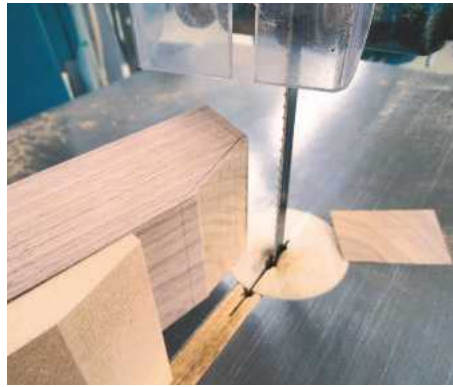
### Manufacturing the rails

While cutting the wood that was to be shaped into the legs, I also cut the oversized lengths for the seats of both stools and the bench. This would allow the tension to be released so the wood could move before I planed and thickened it square.





11 Jig to hold the dovetail profile rails...



12 ... while they are shaped on the bandsaw



13 Information block lasered onto the underside of a seat component



14 Cramping the job together, note various blocks and spacers



15 Sawing the ends of the rails flush with the edges of the seat



16 Drilling the circular mortises for the legs on the long bench

Having been left for a week, I could then begin processing them. I started with the walnut dovetail profiled rails. The boards I had bought would make two rails from the width. This meant the board needed cutting in half along the length. I then planed and thickened these to the final thickness. To achieve the angle, I cut the length along the table saw with the blade set at an angle. I then planed this flat, removing any saw marks using the planer. During my last prototype, I had used the hand plane, which had distorted the angle, making the rails fit loose. I kept a close eye on the angle throughout this process to make sure it remained accurate. This process would be much easier on a larger scale of manufacture as the four-way industrial planers can accurately achieve the shape with just one setup.

With the lengths shaped to the dovetail profile, I cut them into the shorter lengths for the rails, keeping 10mm excess so they could be cut flush when assembled with the seat. For the final shaping of the rails, I designed a jig, which would hold the pieces square. I also made some simpler jigs to help me mark out the seven rails accurately so they were identical. This also helped to speed up the process.

Again, in industry the rails could be shaped in several ways, all of which would not require any marking out, which was a time-consuming process, even with the help of the jigs.

Once shaped, a rail from each piece of furniture needed to be etched with the information of its manufacture and maintenance. I include this information in all my work to help build sentimental attachment and allow even a novice to effectively care for and restore their piece.

I always design furniture which will be treasured in order to try and change the paradigm of unsustainable throwaway consumption, so that as a designer, I can make my steps towards the industry becoming more sustainable.

To permanently etch this detail, I used a laser cutter. If this was to be scaled up, a hot stamp would be designed to etch the information into the parts much quicker and with cheaper machining costs.

### Manufacturing the seat

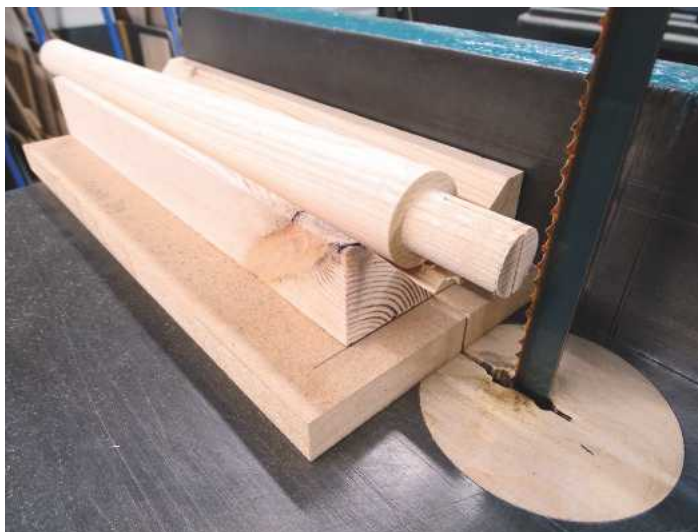
I then moved on to manufacturing the final part: the seats. I planed and thickened these square, having left the wood to relax while I processed the other parts.

The parts had excess on the width, to allow for breakage during routing. There was also 40mm on either end where I had countersunk 4mm holes so the planks could be screwed to the bed of the CNC. Much of this waste material would not be necessary on an industrial scale, as the CNC bed is likely to be larger and have a more adaptable pneumatic bed designed for holding smaller parts secure. Once the groove had been cut with the CNC router, I removed the excess on the table saw.

### Seat sub-assembly

The parts were now ready to be assembled. Using spacers between the planks and packing at either side, I used sash clamps to gradually push the dovetails into place. This was much





17 Sawing the leg tenon ends in a cradle jig



18 Aligning the wedges with a steel straightedge

more controlled than using a mallet, and meant the walnut was not at risk of splitting. As the rails needed to stick out of the plank by 5mm at either side so they could be cut flush, I cut a notch in the packing so the rail could be pushed out of the other side of the plank.

Due to the tight, accurate fit, no glue was needed to hold the piece in place; this reduces costs further and also reduces the product's environmental impact, should it be produced on a larger scale. This process would likely be performed with a jig set up and pneumatic clamps, which would slowly guide the rails through the parts without the need for laborious clamping.

With the rails fitted in place, I clamped a piece of wood flush to the seat plank to help guide the flush saw so it did not damage the ash. Using sanding blocks, I sanded the rails flush to the seat. Excess rail was removed using a flush saw and then cut to length. The holes were then drilled ready for the seat to be assembled with the legs.

### Final assembly

The legs were now ready to be fitted. I fixed these in place and then used a steel rule to line up the slots and the wedges. Using a mallet, I carefully tapped the walnut wedges through the split. The wedges were made from the waste

cut when shaping the dovetails, for efficient use of the wood. This process would likely be done by hand even on a larger scale.

Once the PVA was dry, the excess was removed using the flush saw before being sanded smooth using the orbital sander.

Now that the seat was flat, the legs could be cut to length. I had made a jig, which allowed the legs to be cut to the exact length with the correct angle using the flush saw. This meant no complex marking out and cutting, making the job more efficient. This process would be much simpler in industry: manufacturers have saws and sanders rigged to flat beds, which square off the legs in seconds without the need for setting up each leg with the jig and labour intensive sawing.

### Finishing

The furniture was then ready for finishing. I started by hand-sanding the small amounts of excess glue around the legs, then used the orbital sander, working from 60 to 220 grit on the seats, to achieve a touchable, smooth finish. I used the air pressure gun to remove the dust that was trapped in the etching and around the legs; this meant the surface was clean and dust-free, ready for a finish to be applied to the surface. This process would be similar even on

a large scale of manufacture; however, there would be much less time spent using the orbital sander as the seat and rails would have been sanded smooth before assembly, removing the marks from the thicknesser and planer using a drum sander. Once assembled, any small marks from assembly and glue would be sanded off using an orbital sander and hand-finished using sanding blocks.

The furniture was now ready for finishing. I had tested the offcuts to check that using clear matt Poly-solid oil would give me the finish I desired. I used this finish as it's very hard-wearing and low maintenance. To refinish you can simply apply an extra coat without cutting back, which is useful if the person responsible for maintaining the piece has limited experience.

I applied the finish using foam brushes. This gave me control so that I could apply three thin layers. The process was time consuming, as I was constantly checking for drips. As I was applying the finish by hand, I could only coat a portion of the product at one time. It also takes six hours to dry between coats. In industry, the finish would be sprayed onto the surface to give an even application, which would coat the piece of furniture entirely, and would then be heated to cure the finish quickly between coats. **WW**



19 Trimming the tenon ends



20 The leg-levelling jig; just add flush saw



21 My preferred finish for the project

### FURTHER INFORMATION

To find out more about Jasmine and her work, see [www.jasminedesigns.info](http://www.jasminedesigns.info). You can also follow her on Instagram – search for 'jasmine.designs'

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# ME AND MY WORKSHOP

Colin Simpson

Resident woodturner **Colin Simpson** gives us a glimpse inside his workshop and shares some of his top tips and techniques



Colin's well-equipped workshop houses three lathes and was originally built as two stables and a tack room

**1. What is it – and where is it?**

It's a block and stone-built garage and what was originally built as two stables and a tack room. Quite long and narrow. Adjacent to my house. It's the main reason we bought the house!

**2. What's the best thing about it?**

I don't have to commute!

**3. And what's the worst?**

It gets mightily cold in the winter. Every summer I say I must insulate it.

**4. How important is it to you?**

I work from it nearly every day, including weekends. Sometimes for business purposes, other times just to potter.

**5. What do you make in it?**

I make mainly turned pieces on one of my three lathes, but also general woodworking and renovation work.

**6. What is your favourite workshop tip?**

Enjoy what you do and make any mistakes a 'design opportunity'.

**7. What's your best piece of kit?**

My VB36 lathe – it's such a great workhorse.

**8. If your workshop caught fire, what one thing would you rescue?**

Wow, a difficult one. I couldn't remove the machinery so it would have to be my father's Norris plane.

**9. What's your biggest workshop mistake?**

Like so many people, there are quite a few to choose from. My most expensive mistake was buying English oak planks to make ledged and braced internal doors only to find the wood warped so much as it acclimatised; I couldn't get the lengths I needed. That was eight years ago and I've still got lots left. I continue to make much smaller things from it.

**10. What's the best thing you've ever made?**

I have made thousands of turned bowls, many of which I am proud of but one sticks in my mind – a rippled ash salad bowl. Admittedly, it was a stunner, but it was the customer's delighted reaction to it that makes it memorable.

**11. And what's the worst?**

Far too many to choose from. When I started woodturning I made lots of things that I was happy with and gave away to friends and relations. When I see some of them now I cringe at the poor shape and form, finish, etc. I am sure other woodturners can relate to this!

**12. What's the best lesson you've learned?**

Don't spend ages trying to 'save' a beautiful piece of spalted beech that has gone too far. I have spent a fortune on wood hardener and CA adhesive to pour onto some spalted wood and have never achieved a satisfactory finish. Besides which it takes twice as long, costs more in treating it, and still doesn't look good. My advice would be to cut your losses and use the piece to start your wood burner.

**13. If you won the lottery, what would you buy for your workshop?**

I would probably replace my combination machine with standalone machines – a good table saw, planer, thicknesser and spindle moulder. My Record Power combination machine is great, but it can be frustrating changing modes. I could also afford a bigger workshop to house these new machines! **WW**

**NEXT MONTH**

In the next issue, we step inside the workshop of Linda Kemp – a furniture restorer from London. She is an experienced conservator/restorer offering professional and reliable furniture restoration and object conservation services for private and heritage clients.

We'd love to hear about your workshops too, so do send in a photo of your beloved workspace and feel free to share a few words – we look forward to hearing from you

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# Route to routing:

## Early days for the must-have power tool

This excerpt from *The Woodworker* of May 1968 details a lengthy review of the Stanley H264, which, nearly 50 years ago, was priced at the princely sum of almost £40

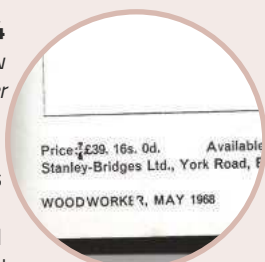
I would hazard a guess that, after a drill and possibly a jigsaw, the next tool the vast majority of woodworkers will purchase is a router. Bringing with it a certain air of mystery (I've been asked countless times 'what can I use it for?', cue lengthy reply), the router takes versatility to its limits and is the beating, spinning heart of many a small workshop. Although invented 100 years ago, and developed into the plunge format by Elu in the 1950s, it wasn't until the 1960s that the router really began to take off.

### The Stanley H264

In this lengthy review from *The Woodworker* of May 1968, the virtues – largely self-evident – of this massively popular power tool are noted and discussed. Despite being a fixed-base machine, the Stanley H264 would really have opened up new worlds of working wood for the lucky purchaser back then. It didn't come cheap, though; 50 years ago nearly £40 was a lot of money for anyone. Time has passed and now this sort of machine has a different value, and I have to say that, on reading the review I quite fancied one myself, but with prices starting at about £100 for battered looking examples on eBay, I think I'll make do with my usual kit.

So, the next question is, does anyone reading this still have one? Or better yet, are you still using it? I was lucky enough to visit an ad hoc hand tool museum the other day (more on this in a later issue), but are there any power tool equivalents? Occasionally one sees a vintage model here and there at the company showroom of a big name manufacturer, but I've yet to see a roomful of classics. Elu MOF 96, anyone?

*Mark*



## Data Sheet

### Stanley Router, H.264

Advantages of this router are that it will carry out such operations as grooving, rebating, moulding, chamfering, and recessing, and will work equally well around shaped edges as along straight ones. Furthermore, its high speed enables it to cut cleanly both across and against the grain without tearing out the fibres, providing the cutters are kept sharp. Additionally it will cut recesses leaving a clean surface calling for only a minimum of final cleaning-up. There are also several accessories for dovetailing, planing, veneer trimming, etc.

Normally the router is used as a portable power tool, and, in the case of moulding, may be used with the pilot nose of the cutter bearing against the edge of the work, though in some cases there is an advantage in fitting the fence, this bearing against the edge. For grooving parallel with an edge the fence is essential, and the same thing applies to rebating. If a groove runs at an odd angle with the edge it is usually necessary to use a templet, or fix a fence or guide across the work.

When moulding, a cutter which is a reverse of the required section must be used. If there is more than one member to the profile a separate cutter for each is required. For working a groove it is quicker to fit a cutter of the required groove width, but, to avoid carrying a wide stock of cutters, a narrow one can be used, and two or more passes made to cut up to the finished size.

Over extended use we have found this a versatile machine, heavy enough to hold to its work without being tiring to handle. A feature we found of special value was the fine and rapid adjustment of which it is capable. Thus, assuming that a groove depth of  $\frac{1}{8}$  in. is needed, the appropriate cutter is fixed in the collet, the clamp slackened, and the router placed on a flat board with the point of the cutter just resting on the latter. The clamp is tightened and the adjustment ring raised to a little more than the required depth. The micrometer has an adjustable vertical scale, and this is raised to touch the bottom of the ring. The latter is then turned until it pushes down the scale to give a reading of  $\frac{1}{8}$  in. By releasing the clamp the motor casing carrying the collet will drop down automatically, giving a cutter projection of exactly  $\frac{1}{8}$  in.

The shaft lock has an advantage in that only a single spanner is needed to tighten the collet nut. Our impression, however, is that there might be a slight danger here in that, since it is combined with the on-off switch, the user might in forgetfulness attempt to lock the spindle whilst the latter is still rotating. It is essential that the spindle is stationary when the lock is operated. There are, of course, two separate movements, on-off and lock, but the same switch lever is used.

Rate of cut is found by experience, and it varies with the size of the cutter, depth of cut, and hardness of the wood. Whereas too rapid a feed may strain the bit and even cause breakage, too slow a movement is apt to dull the cutter by friction. It is advisable to maintain a continuous movement without a halt during one pass, especially when using the



The router, H.264 in use.

router at an edge with the cutter pilot nose in operation. If halted, the revolving pilot may burn the wood unless only the slightest lateral pressure is maintained. Men used to hand-tools such as the plough or the moulding plane know that a quite strong inward pressure is essential to prevent drifting from the work. In the case of the router only light pressure should be used.

In all cases it is essential to avoid too deep a cut in one operation. As a general guide, the depth should not be greater than the diameter of the cutter being used. When a deeper cut is needed a second or even third pass should be made.

One particularly useful way we have found of using the router is to reverse it beneath a specially made table with a flat top with a hole in it to enable the cutter to pass through. The moulded sub-base of the router is removed and the machine held beneath the table top with the same fixing screws. An adjustable fence enables the set-up to be used as a spindle moulder. There are many occasions when it is more convenient to take the wood to the machine than vice versa. This is specially the case when small items are being moulded or grooved.

(continued on page 151)

### DO GET IN TOUCH

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

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**FESTOOL**

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# A workshop for Sophie

Dennis Knight, with the help of his granddaughter, Sophie, customises a ready-made shed and sets about building a workshop inside that will be suitable for a budding young woodworker



'My very own workshop!'

Having taken my granddaughter Sophie to many of B&Q's 'Kids Can Do It' woodworking classes (**photo 1**), which she greatly enjoyed, it came as no surprise when she said: "I'd like a workshop like yours, Granddad; can you make me one?" Well, how could I ignore a request like that? On a side note, sadly, the B&Q classes for children, launched in 2011, are now defunct but were held in 50 of their stores. Over 21,000 children between 7-11 attended them with, interestingly, almost double the amount of girls than boys.

I explained that I would first have to talk to her parents, my daughter Clair and son-in-law Simon, to ask if I could build a shed in their back garden solely for her use. They readily agreed, with a proviso that it shouldn't be too big and, even better, insisted on paying for a ready-made shed, leaving me with only the inside to fit out. A good result all round!

## First things first

Sophie had expressed an interest in making small items such as those we made at the classes and in view of that and the promise I'd made to keep it small, we decided on a

6' x 4' shed. Perhaps it would prove to be a bit small further down the line but, if her interest didn't wane, we could always go for something larger later when she would at least have a record of productivity to help in our re-negotiation!

The main photo shows Sophie proudly standing outside her brand-new shed. Her mum bought her the flower containers (introducing a 'girly' aspect to the project) and we attached those and the bird feeder, which was one of her first projects at 'Kids Can Do It'. But, it was still only a shed and I now had to think about how I was going to make it into a workshop.

## Small is good

With space at a premium and Sophie's relatively small stature, a low bench with a fairly small surface area was called for; this is shown in **photo 2**. Note: the toolbox in the background is another of her KCDI projects. The bench is 810mm in length x 430mm wide x 760mm high. The top is 12mm ply, fully supported with sturdy cross battens so that any heavy-duty nailing will be well supported! The useful undershelf is 6mm ply and the legs are 50 x 50mm PAR. It was screwed firmly to the shed uprights and floor

and the whole thing was given two coats of polyurethane varnish. So, she had somewhere to work in and something to work on, but now I had to think of how she could dimension timber efficiently with minimal risk to her safety.

## I saw the light

Having considered all options I settled on a mitre frame saw (**photo 3**), which, when fixed rigidly to the bench provided a safe, reliable and efficient method for Sophie to cut both battens and narrow pieces of ply, etc. It has limitations in terms of the thickness and width of timber that it can cope with but, again, we can look at something more substantial as Sophie's skills increase.

I had in fact already cut up a sheet of 6mm ply into small random size pieces (see background in **photo 3**), but making sure that one dimension on each piece was replicated at least four times on other pieces so that simple boxes could be made with little trouble, thus reinforcing confidence in constructing.

Kitting out the rest of the workshop was the final job before Sophie could get to work. Although she already had a small tool collection, some additional items were required. A cheap 'workmate' type



1 The joy of making is expressed in Sophie's smile



2 The scaled-down workbench

bench gave her the means to hold pieces securely while also providing extra work surface. Some shelving, a few clamps and consumables, such as glue and abrasives, completed the project.

I am pleased to report that Sophie loved her workshop and her first project, making furniture for a dolls' house (photo 4), soon had wardrobes and chests of drawers flowing from the production line!

### Marking time

Sophie's great, great grandfather, my paternal grandfather, was a carpenter in the 1930s and a family member who inherited his tools heard that Sophie had shown this early interest in woodwork. They kindly gave her his marking gauge (photo 5) as a keepsake, which, in common with the practice at the time, had his name stamped on it. This tangible link with the past has become a prized possession in her tool collection.

Sophie is excitedly planning her next projects to continue her woodworking journey and has recently been joined in her endeavours by her 10-year-old sister Gabriela, who shows just as much enthusiasm to be creative. It must be in the blood. **ww**



3 A mitre frame saw was the safest option



4 Sophie's first efforts; some furniture for her dolls' house



5 A link with the past for her to treasure

# Whittling away the hours

The Editor is a big fan of this beautifully presented, practical gift guide to the age-old art of whittling

**A**cquiring one's own first penknife is a big thing for a young person, and many of us will no doubt have fond memories (slightly hazy in my case) of our first experiences with one. It's possible that the blade may have been a bit on the small side, and not quite sharp enough, but it was still a knife and that was the glory of it. Early whittling, unless one was lucky enough to have a keen and caring adult around to (safely) demonstrate the basics, was generally restricted to the simple slashing of a stick to a point and maybe a spot of name carving into a secluded tree trunk.

## A feast of forest-based fun

With very few exceptions, things had remained so for me, up until I had the enormous good fortune to chance upon this great little book. Matt Collins has produced a simple work here that somehow manages to do more than just list and describe a whole bunch of miniature past-time projects. The book follows a conventional and successful format of introduction to the craft (with a bit of history and philosophy thrown in, all good stuff), then turns to look at the kit involved. While it's a bonus to have the odd drill and bowsaw around, the main course for this feast of forest-based fun is without a doubt the penknife itself.

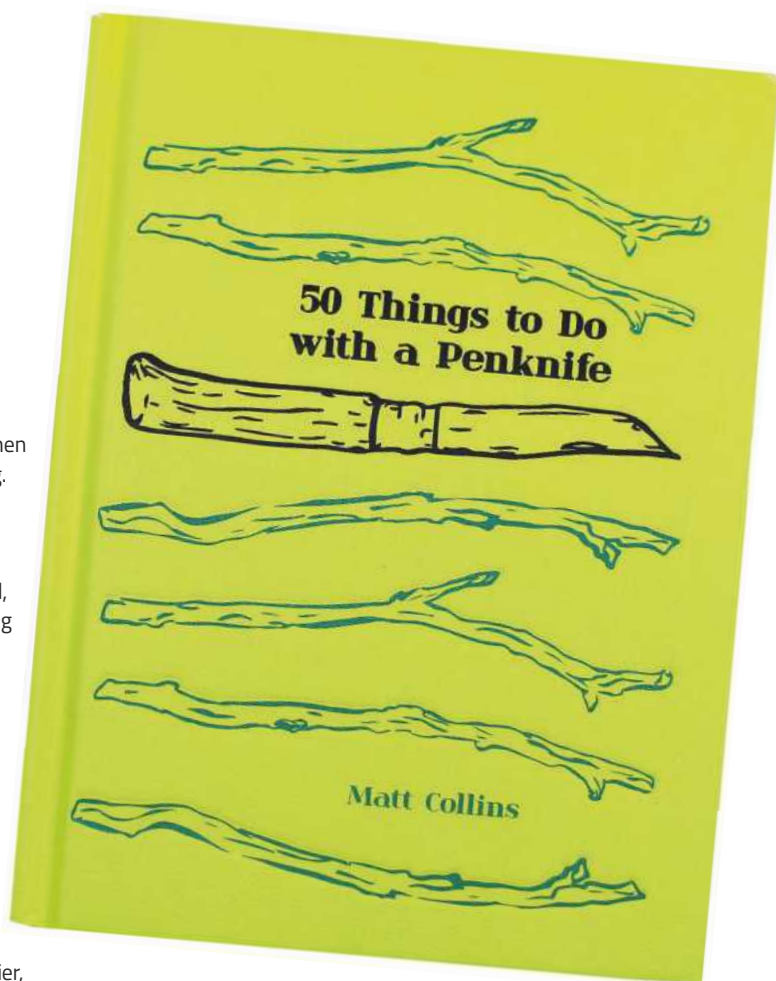
Although some may swear by the Swiss Army knife (good, but give me a pliers-based multi-tool any day), the only show in town has to be that French favourite, the Opinel lock knife. For anyone who doesn't have one yet, it's available in a variety of sizes, is a knife you'll never regret buying, and will keep forever. The locking mechanism is a design triumph of frugal simplicity and a joy to operate every time – whether opening or closing the blade. But I digress. After a couple of pages on penknives, we look at wood type basics and then to carving techniques themselves, followed by

'helpful extras' and then we're off and running.

## Lessons learned

Project number one is sharpening a pencil, and, despite this being the sort of thing we woodworkers should be able to do in our sleep, I gave it a go. It took me a moment to realise just why I generally reach for a purpose-made sharpener for the blunt pencil point. My knife technique was shockingly cavalier, bordering on reckless, and the reason why I had such little success when it came to sharpening pencils with a blade. A few controlled push cuts later and it all become clear. A very good lesson it was, and there were more to follow.

Sometimes it only takes a little impetus to get started, and this book provided it for me with that very first job. I took my copy into the woods the other day and had a great time relaxing in the Autumn sun with a few sticks of cherry and my trusty Opinel. I soon realised that there is plenty of scope for artistic interpretation for most of the whittling projects in the book and it's this realisation that is part of the charm of Matt's work. While you might raise an eyebrow at the inclusion of some of the projects (there are genuinely 50 in number, the last being a boon for the thirsty), they will all provide inspiration in one way or another, and by doing so prove their worth for publication.



## In summary

I found the whole thing a creative tonic, and proof that you can be happily productive even when just loafing in a garden chair. It's as a written encouragement that this volume wins big; I can't recommend it enough. **MC**

## FURTHER INFORMATION

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One of the 50 creative and fun projects featured in this book



The products of a happy afternoon in the woods



The Editor's Opinel lock knife

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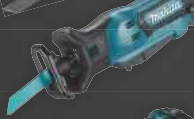
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## Colouring & texturing PART 3

In the final part of this mini series, Colin Simpson wraps things up by showing you four more great techniques for applying colour and texture to your turnings

**T**here is a limitless number of ways in which you can apply surface enhancement to your turned work. In this mini series, I am showing a few that I have used in the past and some that may be new to you. I know coloured turned work does not appeal to all of you, but it is getting more popular and is sure to make your work stand out.

### IRIDESCENT PAINTS

I have shown you how I use iridescent paints in the past when I coloured the rim of my Nebula bowl in the September 2016 issue, and here I am going to use a similar technique, but this time on the outside of a vase.

For this, I am using iridescent paints from Jo Sonja (**photo 1**). These paints show up far better if they are painted onto a dark background. I masked

off the top of the vase that I wanted to keep as natural wood, then sprayed the rest of the vase with Chestnut ebonising lacquer (**photo 2**). I've found that this lacquer leaves such a good finish that the iridescent paints can't stick to it very well, so, when it was dry, I gave it a quick rub with wire wool, which will provide a key for the paint.

### The technique in action

Ensure to use the iridescent paints very sparingly. I squeezed out a pea-sized blob of each colour into separate containers. For this particular method, the paints need to be thinned down with water to the consistency of single cream. Use a small, soft paintbrush to dab on a splodge, then blow through a drinking straw to move the splodge around. If you have a compressor, then you could use your air gun, or an empty airbrush to move the paint around, which is a little easier, particularly if you get short of breath. Continue to splodge on random colours in a random manner and move the paints around using your air source (**photo 3**). If you don't like a particular area, you can carefully wipe off the colour with a paper towel and try again. I think these pieces look better if you don't cover up all of the dark background, but you can carry on until you are happy with the effect. Leave the piece to dry, remove the masking tape and finish the vase to your liking. I used gloss acrylic lacquer (**photo 4**).



1 I use Jo Sonja's iridescent paints



2 Spray the area you want to paint with ebonising lacquer



3 Splodge on the paint and move it around with your air source



4 The finished piece after spraying with gloss lacquer

### MARBLING

When I first started to marble my work, I thought it should be quite a simple process, but it took me a little while to get everything just right. Marbling is the process of floating coloured inks on water



5 This is my marbling kit



6 Using a stick, move the ink around carefully



7 Two pieces that have just been dipped...

and then dipping the work into the bath. **Photo 5** shows what I use. Obviously, you need marbling inks, but you will also need a thickening agent for the water. This is the pot in the front left of **photo 5**. Mix it with water and follow the instructions on the bottle. The water needs to be thickened to the consistency of thin wallpaper paste. The aluminium sulphate (known in marbling circles as 'Alum') is also mixed with water and used to prime or seal the workpiece. However, I have had greater success if I seal the wood with sanding sealer and, on some occasions, I have used a water-based paint primer or gesso to cover the wood that I want marbled.

### The technique in action

I am going to marble the rim of a small bowl. Turn the back and rim of the bowl, sand to a finish and put sanding sealer on the back; this protects the back from any overspill and makes it easier to clean up afterwards. Seal the rim with Alum or sanding sealer. On this occasion, I used gesso. Don't turn out the middle of the bowl at this stage – unless of course you want to marble this part. Next, pour the thickened water into a shallow bowl and then add a few drops of marbling ink to the water. Gently move the inks around with



8 ... and one that has been finished



9 The paints I use for hydro dipping

a small stick (**photo 6**) until you have a pattern you are happy with and then carefully dip the bowl into the ink. I keep the workpiece in the chuck so I have something to hold onto. You can then remove the piece from the marbling bath and gently immerse it in a bucket of clean water to remove any excess Alum, then leave to dry. **Photo 7** shows the two bowls that I dipped.

When the rim is dry, turn the middle of the bowl out in the normal way and finish to your choice. I used acrylic lacquer (**photo 8**).



12 ... then submerge your workpiece

### HYDRO DIPPING

I have recently seen this technique used on plastic and metal items and thought it might be another technique I could use for wood. It has been given the rather grand name of 'Hydro Dipping', but to my mind it is just marbling. This technique uses spray paints – **photo 9** shows the ones I use. I limited my palette to black, grey and white, but you can use whichever colours you like.

### The technique in action

I am going to paint the back and rim of a bowl. As before, turn and finish the back and rim, but don't turn the middle of the bowl out yet. You can then seal the back and rim with sanding sealer, but you could also prime it with acrylic paint to achieve a slightly different result. I am going to dip the whole bowl this time, so I needed to remove it from the chuck. I used a hot-melt glue gun to glue a scrap piece of wood to the chucking point, which would be used as a temporary handle.

You will need a bucket of warm water. Shake the cans of paint and then spray a liberal amount of each one into the bucket of water (**photo 10**).



14 Use a stiff wire brush to scratch the wood and remove the softer growth



10 Spray each paint into warm water...



11 ... gently agitate the paint to achieve a nice, pleasing pattern...



15 Spray the piece black and then gold



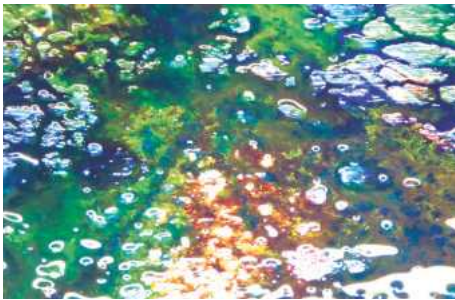
13 The finished hydro-dipped piece



16 Rub in the Verdigris wax



18 Experimenting with acrylic paints and alcohol



19 This is a close-up of that experiment

Gently agitate the water to let the paints mingle into a nice pattern (**photo 11**) and then gently submerge your piece (**photo 12**). Allow the paint to dry and then finish the bowl in the normal way (**photo 13**).

#### GOLD PAINT & VERDIGRIS WAX

This is a simple procedure that works well on cheap, quick growing softwood, such as pine or cedar. I used an offcut from a fence post to turn a small, simple shaped bud vase or weed pot.

#### The technique in action

Sand the outside and then brush it hard with a stiff wire brush; this will clearly scratch the surface, but it also removes some of the softer spring growth between the grain (**photo 14**). I sprayed the whole vase with ebonising lacquer and then with gold spray paint (**photo 15**). When the paint was dry I rubbed Verdigris wax onto the surface (**photo 16**), then wiped the excess away with a paper towel and Danish oil. I also rubbed a little of the gold paint away, revealing the black undercoat. I think painting it black first gives the gold more depth – **photo 17** shows the end result.



17 The finished piece after removing excess wax with oil

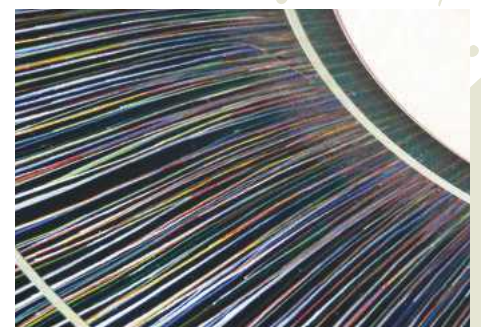
#### Conclusion

Over the last few issues, I have shown you a number of different techniques to colour and enhance your turned work, but there are hundreds of other ways. If you enjoy embellishing your work, my advice is to experiment with paint, inks, waxes and items to add texture. You don't have to practice on turned work or even expensive wood – **photo 18** shows me playing with acrylic paints, a hair dryer and isopropyl alcohol. I am using an offcut of plasterboard that I primed with gesso, but primed hardboard or plywood is ideal for experimentation. The alcohol reacts with the acrylic paint to leave quite a pleasing effect. **Photo 19** shows a close-up of it. It might look good on the rim of a bowl or even on the lid of a box, but I have yet to work out how to apply it to the side of a vase due to the curvature of the piece. If you're happy with a particular experiment, then you will need to work out how it can be applied to your turned work.

Finally, I am going to finish this mini series by showing you an image of a platter that my neighbour and avid reader of this magazine, John Creevy, made. **Photo 20** shows the platter and **photo 21** is a close-up of the rim. It was done using the centrifugal technique I showed you in the October issue and is a far, far better example than the piece I made for the article. So, play and experiment and don't worry if your attempts don't all work. Keep at it and you too could come up with a complete stunner. **WW**



20 Here is really nice example of centrifugal painting using acrylics...



21 ... and a close-up of the rim

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# Dancing with DIVERSITY

Michael Forster combines bubinga, ash and ebony to make a leather-lined desk box with lift-out tray

This desk box was a response to a last-minute request for a retirement gift for a colleague. Uniting three diverse timbers in one box resonates with a particular aspect of Christian belief about unity in diversity, and I knew this would appeal to the recipient – the more so if the three timbers represented diverse cultures. So I took some bubinga, which originates from West Africa, European ash from stock, and threw in a small piece of Macassar ebony, native to Indonesia, that I had left over from another job.

The interlocking grain of bubinga causes a shimmering effect when smooth, but it's a Dickens of a job to get it that way. I prepared the timber well over-size and used a hand plane to remove some deep tear-out.

### Corner joints

With the timber prepared, I shot the ends on a shooting board to ensure squareness so that the bare-faced tenons could be cut at the router table (photo 1). For this I used a down-cut spiral bit that gave me a beautifully clean shoulder

(photo 2). However, I then found that after recent dismantling and reassembly my router was not absolutely square to the table, so I had to pare the shoulders close up to the joint. An accurate combination square is the perfect tool for checking shoulder angles (photo 3).

To rout the mortises, I simply marked the edges of the cutter on the fence and made guide marks on the boards to align with them (photo 4). The mortises and stopped grooves for the bottom were made with standard straight cutters, positioning the mortises so that the front and back panels would be visibly proud of the ends. This ensured plenty of scope for cleaning up the grain.



1 Bare-faced tenons were cut at the router table using a simple 90° guide



2 Use of a down-cut spiral bit in the router table produced a nice clean shoulder



3 A combination square made a good depth gauge, as here, and it was also used for checking squareness of tenon shoulders

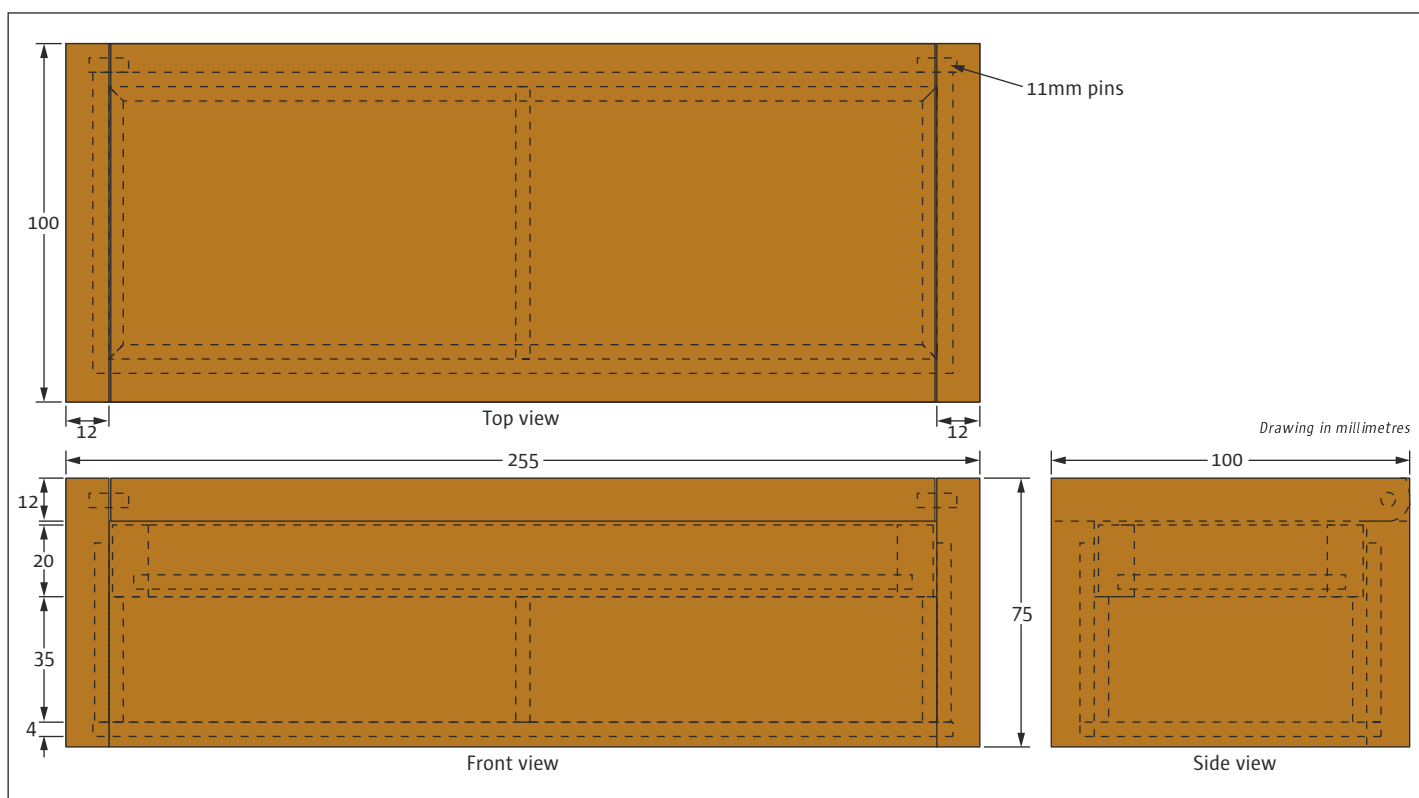


Fig.1 Desk box

Originally, I thickened a piece of ash to fit the bottom groove, but later changed to MDF because this would allow me to glue in the bottom panel for extra strength; bubinga can be difficult to glue due to gum pockets, and these corner joints have small glue surfaces.

### Carcass & lid

After cutting the lid to size, I lightly clamped the carcass together and trimmed down the lid until it was a nice fit between the ends.

Next came the hinge – a simple pair of 4mm brass pins cut from a rod. These need to be a freely-turning fit in the hole with just a little allowance for any wood movement, but when experimenting on scrap I found a 4.5mm hole too sloppy. The answer was to mount a piece of rod in the chuck of my drill press and rotate it against a file, checking frequently with a test piece of scrap until I had an exact fit (photo 5). I then cut the pins to length and smoothed the ends by rotating them in a drill chuck against some coarse wet-and-dry abrasive. All that

should ensure smooth operation in the future – these pivots can't be refitted once the box is assembled so this kind of care is necessary.

Drilling the pin holes in the carcass and lid ends (photo 6) demanded precision as any misalignment would cause binding, so I used my basic but fully adequate jig (photo 7) to hold the lid panel vertical in both planes. I took some trouble with a gauge to ensure the hole was dead centre in the lid, then marked deeply with an awl (photo 8), replicating the marks in the end panels and setting the drill depth stop so that the combined holes were just 1mm longer than the rods (photo 9).

### Shapes & curves

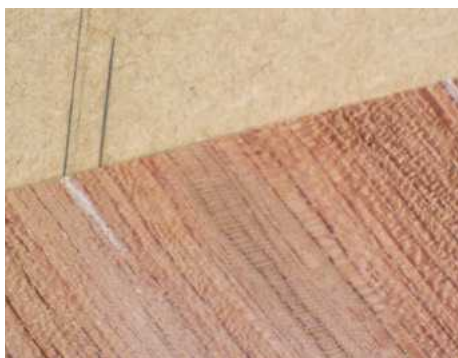
Before assembly, the back edge of the lid had to be shaped to allow the lid to turn on its pins (photo 10). I did this by eye with a hand plane, first chamfering at about 45° and then successively removing corners until a satisfactory quadrant was formed. I then slightly extended the curve around to the top edge, to allow the lid to sit open at about 95° without any supporting

stays. I'm sure there is a geometric formula for calculating this, but life's a bit on the short side for that sort of pedantry – if it looks good and works well, then it's right.

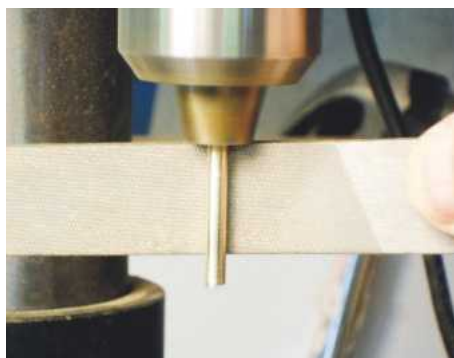
Lightly clamped up dry, everything worked as it should, but before I could glue up I had other things to do. Some areas would be impossible to finish well once assembled, so I applied a few coats of acrylic varnish to the inside corners of ends around the pin holes, the ends and back edge of the lid panel and the top edge of the carcass back, and went on to finish the entire lid panel before assembly. I also finished the show areas of the inside. Now I could do the glue up (photos 11 & 12).

### Lift-out tray

While it was drying, I mitred the corners for the ebony lift-out tray using a simple bird-house jig on a shooting board (photos 13 & 14). My jig is not very elegant but it's served me well for some years and I've lost count of the number of boxes it's helped me turn out precision mitres for. The



4 Marks on the router table fence indicated the cutter edges, and on the timber the ends of the stopped grooves



5 With a lot of checking, the brass rod was 'turned' to a sliding fit in the drill press



6 Using an offcut, a gauge was precisely centred for positioning the pin holes in the lid



**7** This simple jig held the lid at precisely 90° in both planes for a perfectly aligned hole



**8** After plotting with the gauge a deeper mark was made with an awl to locate the brad-point bit



**9** Everything was clamped in position and then double-checked before drilling commenced



**10** To allow the lid to open, the underside of the rear edge must be rounded so that the lid will lean backwards and stay open



**11** After glue-up, the box is cleaned up and the front flushed down to the ends



**13** Made from scraps, the bird-house jig looks rough and ready but is actually a precision tool for jobs like trimming the mitres on the lift-out tray



**12** Rear view showing relieved rear edge to the lid, which allows easy movement

important thing is that the bearing surfaces are precisely angled, and unless you have a very accurate mitre saw that's a job for hand planing.

Once the corners are mitred (**photo 15**), ensure that both ends and both sides are identical in length so that the finished tray will be square. Again, I glued in MDF for the bottom panel, so no need for reinforcing corner keys.

While the tray dried, I returned to the carcass to flush down the front and back and clean up the ends with a sharp, finely set plane. Traces of paper stuck to the bottom edges were removed by rubbing on a double-sided flat sanding board, simultaneously producing a perfectly flat perimeter.

Before fully finishing the carcass, I tested the tray in position, resting it on offcuts trimmed to width to simulate the linings. The tray can be dry-assembled using tape, to allow it to be tested for fit before gluing. I used a simple band clamp to hold it while the glue dried.

The carcass could now be fully finished and set aside, and the tray cleaned up. Again, the sanding board came into its own.

### Ribbon solutions

Before lining the tray (**photo 17**), I set the ribbon in place using enough Copydex adhesive to saturate the fabric to provide strength to lift



**14** The timber is held at precisely 45° to the plane and 90° against the fence



**15** The Macassar ebony was mitred for the lift-out tray using a No.9 plane. If using an ordinary jack, ensure that the cutter sits square to the sides

**TIP**

A single one-handed clamp bearing on the centre of the two ends did the best job for the glue-up. With something this small, heavy clamps can actually pull things out of line, so I ensured that the weight of the clamp was being taken on the bench, imposing no strain or lift on the box itself, which sat solidly on a flat piece of MDF with protective paper between them

**FURTHER INFORMATION**

More of Matthew Coutts' work can be found on his website: [www.matthewcoutts.co.uk](http://www.matthewcoutts.co.uk)

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the tray (photo 16). I realised later that I hadn't used the best approach in sealing the cut ends of the ribbon. Much better would have been to double the ends back to form loops, thus avoiding the fraying issue altogether. Once the ribbon was secure, I lined the tray with leather as for the bottom of the box.

**Linings & trimmings**

I fitted the ash linings by trial and error (photo 18), mitre-ing the corners using the bird-house jig. The centre divider was simply notched into the front and back linings. I marked the visible shoulder with a knife but if you are not confident about precision sawing then cut shy and pare back. Only the top edges, and perhaps a few millimetres of the inside faces, need to be varnished before the linings could be placed



**16** The ribbon was glued to the bottom before the lining. To guard against fraying, seal the cut ends by looping them back



**17** The finished tray with its card-backed leather trim, which matches the bottom of the box



**18** The 3mm ash linings were shot to a push-fit, mitred at the corners and half-lapped in the middle



**19** With the ash linings in place, the leather trim was folded over card and added

in position – no glue was necessary. Now there was just the trimming to do (photo 19). I used pigskin suede, but felt or velvet would be an option although velvet is much more tricky to handle. The bottom linings are simply card with leather on one side, whereas the sides have leather folded over the top and covering both faces of the card. This may seem extravagant and you may ask why the top edge could not just be turned over a few millimetres. My method, however, ensured that the trim sat perfectly flat

against the box linings. I cut a strip of card to width and applied double-sided tape to one side, then stuck a slightly oversize piece of leather to it, turned it over and repeated on the other side, carefully folding the leather over, then trimmed the bottom edges. After cutting the pieces slightly oversize, I trimmed them back with a scalpel, until the pieces held themselves in place, then secured them with some more double-sided tape.

All that remained was to drop in the tray (photo 20) and the box was ready for presentation. **www**



**20** A very satisfying transformation – and one that was remarkably simple to achieve



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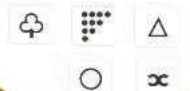
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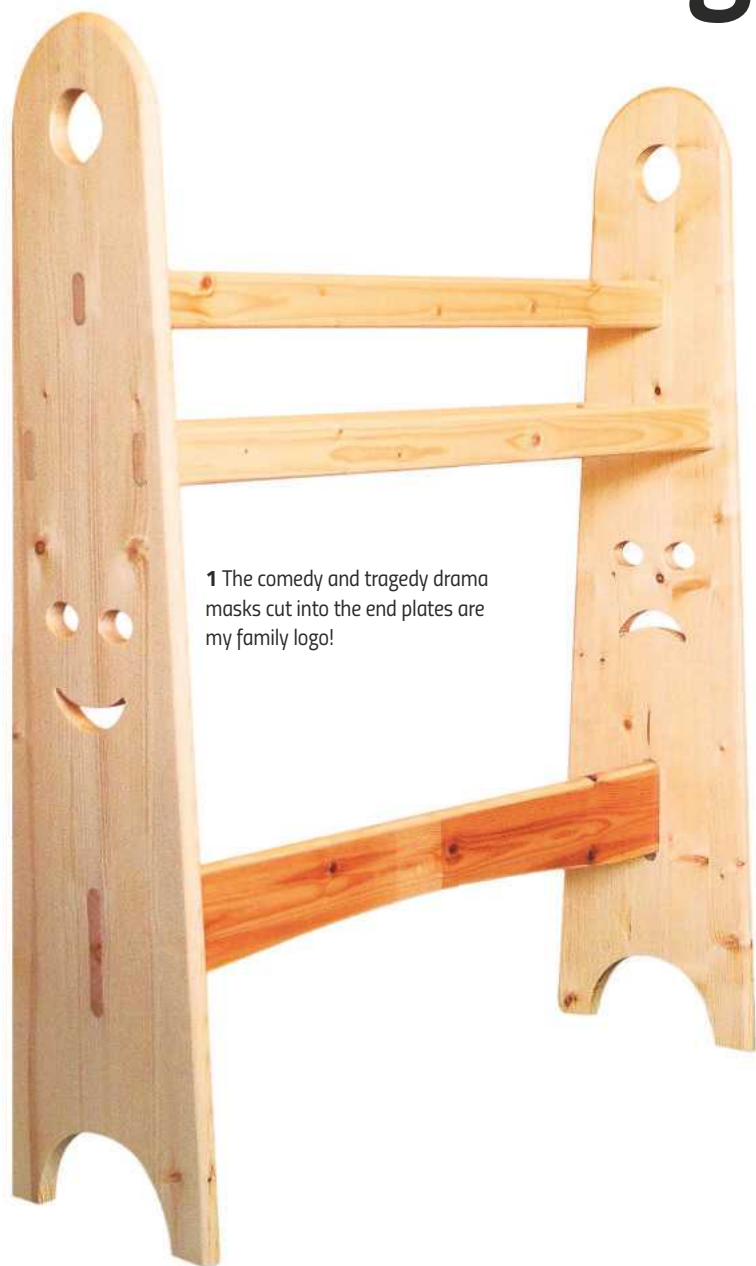
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# Blanket coverage

Peter Benson hones his skills with a router, jigs and template to make a pine quilt stand



1 The comedy and tragedy drama masks cut into the end plates are my family logo!

When my wife requested that I make us another quilt stand, I measured up the existing one, and began mentally listing the various stages and techniques that would be needed. In terms of helping me to gain experience – I dare not say expertise – the project seemed to provide a good opportunity to practise several techniques and to try out some new methods.

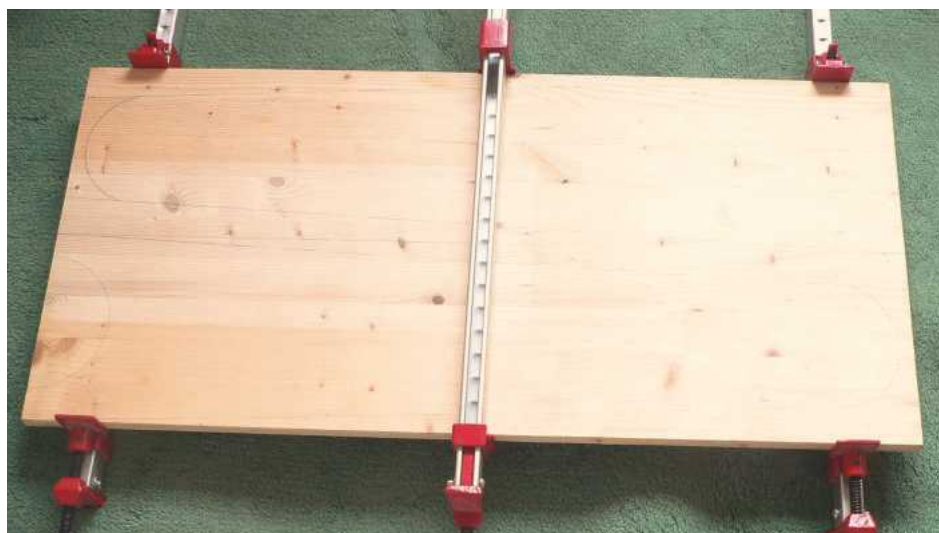
It is made from pine boards to match other furniture in the bedroom, but I have to say that I find pine more difficult to work with than, say, a nice piece of ash. It does not give the crisp lines that I like – and, when my tools aren't as sharp as they might be, it mercilessly shows up the fact.

## Stand design

The function of the stand is to display a prized quilt or, more mundanely, to support the bedclothes while the bed is being made. The design is simple and, to avoid snagging the bed clothes, smooth in outline. At the same time, we felt it should be recognisably ours, and so the family logo is incorporated, in the shape of the drama masks comedy and tragedy, which have provided an important theme for our 55-year marriage...

The stand consists of two end plates and four rails, joined by through-mortises & tenons (photo 1). Stub tenons could be employed, but I thought the end plates were possibly a bit thin for that, and I like seeing the joins in such a simple design. All external edges are rounded over to eliminate snagging.

The shape of the end plates allowed me to use a tapered jig, and the router table for rounding all the external edges; I was able to prepare a template for the various holes to be cut in the end plates, and make up a jig to use the router on the tenons. In short, these are all good techniques for a neophyte woodworker to practise.



2 The end plates were cut from 18mm pine boards – here's the three-board glue-up in cramps



3 A taper jig was used on a table saw to cut the end plates' shape



4 The finished curve was created using a template with the router



5 I used a template-following straight 1/2in cutter with a top bearing to reproduce the template's outline



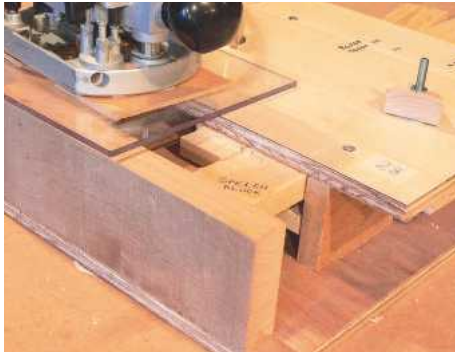
6 The outer edges were rounded with a 3in round-over cutter with top bearing in the router table



7 The bottom curve was drawn out with a slat and clamp...



8 ... and then cleaned up with a spokeshave



9 My handy tenon jig was put to work with the router



10 A 1/2in straight cutter in a bushing was used against the running board of the jig



11 Three rails were sanded together with 120, 180, and 240 grit abrasive pads

Of course the whole thing could be made with hand tools, but I have few skills in this area, so I rely on jigs and templates, which allow me to set everything up and take practise cuts on scraps before committing to the real wood.

### End plates

The end plates were cut from 18mm pine boards, glued in threes to make the wide panels, the growth rings being alternated to minimise cupping (photo 2). Many of the DIY sheds carry similar panels, ready-glued up and planed, if you're in a hurry.

Once glued and planed, the required outline can be drawn on the panel; I adjusted my taper jig to the appropriate angle (see 'the jigs' sidebar) and put it through the table saw. The jig holds the panel firmly while sliding against the fence to cut the required taper (photo 3).

The bottom cut-outs can be marked around

a kitchen plate, then created with a coping saw, keeping close to the line, so you can sand down to the line with 80 grit abrasive.

To shape the tops of the panels, another plate can be used to mark the outline, to be followed on the bandsaw, keeping just outside the line. To create the finished curve I prepared a template for the router (see 'end plate' template and photo 4). This was stuck to the panel with double-sided tape, with a clamp in a remote corner, to prevent any possible slippage, which would ruin the project.

### Routing practice

Next, I mounted a template-following straight 1/2in cutter with a top bearing in the router (photo 5), which runs against the side of the template to reproduce its outline. For the actual surgery, clamp the panel over the edge of the bench, so the cutter is free to spin above and below

the panel. Set a high speed on the router and take fine, grazing cuts to achieve the smoothest finish, especially on the end-grain of the panel.

To round over the outer edges you can use a 3in round-over cutter with top bearing in the router table, skimming gently. My test piece showed that the cuts on the second side bearing no longer had the full original surface to run on, as it had been slightly reduced by my first shaping. For the second side, then, I brought the fence up to engage the work slightly before the bearing (photo 6).

The mortises were cut using the template and the straight 1/2in cutter with top bearing. Keep the router moving or the cutter will burn the panel.

I followed the same approach to create the top circle hole, which is there for ease of picking up the final stand, and the drama mask logo holes. I had to remember to turn the template upside-down, for the second mouth to be happy instead of sad.

### Now for the rails

After judicious sanding of the end plates and their edges – not too much around the various holes, which should be left clean and sharp – I was ready for the rails.

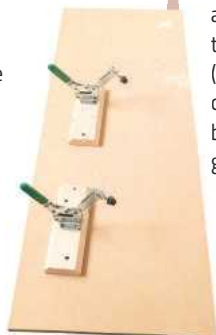
These were ripped from some remnants of a pine bed frame that were otherwise damaged, then skimmed with the plane. The top three rails are straight and narrow, while the bottom rail is deeper, with a curved underside to add a little interest. This curve was created on the bandsaw, following a line drawn against a sprung slat (**photo 7**), before being cleaned up with a spokeshave (**photo 8**).

Since the tenons were to pass right through the mortises, the rails were cut the full length. To cut the tenons one has a range of options, from bandsaw to handsaw to table saw – my American friends would use a dado cutter in the table saw, but I was looking to learn new techniques and saw in Roy Sutton's *Jig Making for the Router* a jig that is designed for just this task.

### THE JIGS

#### Taper cutting jig for the table saw

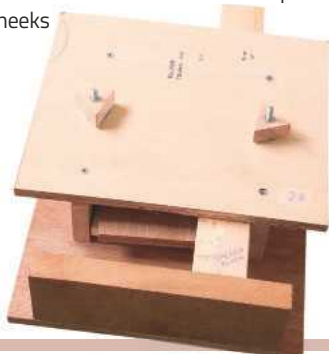
The panel is clamped to a flat, parallel-sided board using a couple of toggle clamps, so the panel projects over the side of the jig, which runs against the table saw fence. Lacking such toggle clamps, you could attach the panel to the jig using short, countersunk wood screws through parts of the panel, which will be cut off or routed away later



#### Tenoning jig for the router

This is basically Roy Sutton's jig, with a few modifications, from his book *Jig Making for the Router*, published by Fine Grain Productions, 1997. The rail is clamped in the jig, pushed against the splch block on one side and forward against a specially cut end stop – this sets the required tenon length.

The splch block stays in place, while the end stop is removed for the routing operation. Using an offcut from the same rail material, the router plunge is now carefully set to give the desired thickness of tenon. Always moving the router towards the splch block minimises the amount of breakout on the rail. Use the jig to cut all the shoulders, then reset the cutting height if wished and use the same end-stop to cut the cheeks



**12** Three sash cramps held the structure together overnight while the glue went off

The jig was easy to build and worked well (see 'the jigs' sidebar), and I was able to set it up using an offcut of the rail material and try this against the mortise before committing the actual rails (**photo 9**). For this routing I used a 1/2in straight cutter in a bushing that ran against the running board of the jig (**photo 10**). The bush provides guidance long before the cutter is in contact with the work. So that was a useful lesson, though experienced router-ers won't need to be told.

The shoulders and cheeks are narrow – only 2 or 3mm – but sufficient to increase the glued surfaces and conceal any unevenness in their mating.

#### Fitting tenons

To fit the square tenons into the round-ended mortises you can square up the mortises or round over the tenons; since the entire design involves curved tops and the tenons are intended to be seen, I went for the latter. Each tenon was held against its intended mortise, and a sharp pencil poked through the mortise to mark the required shape on the end-grain of the tenon. A few judicial

slices with a chisel and a little sanding left the tenons fitting nicely.

Once the rails and tenons are cut, tested and good, it is time to round over their arrises. This means going back to the router table and, using the same round-over cutter as before, lightly skimming all long edges, then placing the four rails side-by-side for a sanding on all four surfaces. I started at 120 grit, then 180 and 240 – no point in going higher with soft pine (**photo 11**).

#### Assembly & finish

I assembled the unit upright on the workbench, for a precise and reliable platform. The first job was to paint PVA on each tenon and shoulder, taking care not to spread it too widely as that would interfere with the finishing. Three sash cramps held it all together overnight while the glue went off (**photo 12**).

The next day I quickly cleaned up the joints and gave it a light sanding where necessary, most of it having been hand sanded before assembly. Two coats of finishing oil and a final waxing, then the stand was ready to be deployed. **ww**

#### END PLATE TEMPLATE FOR THE ROUTER

Most of the shapes needed for routing were incorporated in one main template, designed to guide the router cutters. The outer edge is used with a bearing-guided straight cutter, which reproduces exactly the shape of the template; the mortises and top circle are also cut-outs.

A 1/2in straight cutter in a bush was employed for the logo since it reached better into the logo cut-outs. For this reason the template for the logo had to be slightly bigger at 1/4in, to allow for the bushing.

The template material is 1/2in hardboard, which is easy to shape yet sturdy enough to guide the cutters.

The template was prepared using hole saws and fretsaw, rounding with files to give smooth, flowing edges. I could have made a full-sized template incorporating every design feature in the correct position, but this would have wasted a lot of material, so I condensed the features in a smaller template at the expense of having to reposition it a couple of times in use. That said, you should leave it as big as you can, so you have room to clamp it out of the router's way



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# A carpenter's chips

Phil Whitfeld looks back to the humble beginnings of English carpentry

Grandpa was a carpenter, he built houses, stores and banks  
Chain-smoked Camel cigarettes and hammered nails in planks  
He would level on the level, shaved even every door  
And voted for Eisenhower 'cos Lincoln won the war

*Grandpa was a Carpenter*, John Prine, Atlantic Records, 1973

So sang John Prine back in the early '70s, offering us a little portrait of what he thought being a carpenter was all about. His observation that his grandfather "hammered nails in planks" pays homage to the old axiom that carpenters use nails, joiners use screws and cabinetmakers use joints. Obviously this is a sweeping generalisation, but a good starting point for the purposes of our investigation of the craft.

Previous articles featured here, and others to follow, will look at the development of English furniture through observations of the trades that produced the work, from early carpenters and joiners, to the highly skilled cabinetmakers of the Georgian and Regency periods. We will look at how developments in tools, processes, machinery and materials informed and contributed to the traditions and aesthetic

interpretations of all that is English furniture.

The use of 'carpenter', which outside the trade tends to be an all-purpose catch-all term, had specific meanings here in the 20th century, and allowed us to differentiate between the various disciplines that make

up the woodworking trade. This was not always the case, however. The word itself can be traced back to its biblical usage, and even further, to the ancient civilisations of Rome, Greece and Egypt. In the summer of 2009, I was lucky enough to visit Cairo and see the Tutankhamen exhibition featuring chairs, beds, tables, cabinets and cupboards that were constructed over 3,500 years ago. The heat and lack of humidity in the locality of the tomb ensured that these artefacts did not rot away and enables us to see first-hand the highly developed levels of craft skills that those ancient craftsmen had at their disposal.

## Veni, vidi, vici

The early Mediterranean cultures spread their empires far and wide, the Romans eventually of course reaching the shores of this fair isle. We can see through remains, such as those

at Bath, that architecture and building were highly developed and sophisticated during the Romans' tenure. It is probably fair to assume that the skills of the woodworkers were on a par with those of the stonemasons. The unforgiving climate, of course, has ensured that no wooden structures or artefacts have actually survived intact from this period, although a few traces and remnants have been found and reclaimed from marshland.

The Roman Empire maintained its presence in Britain for over 400 years up until 410 AD, but little written evidence of their time here now exists. The subsequent Anglo-Saxon period that followed the withdrawal of the Romans is also poorly documented. There is almost nothing for the first 200 years, and following that, up until the Norman Conquest, we only have the limited writings and the work of the church and its monasteries to go by.

I don't want to dwell too much on the history lessons but I feel it is important to establish that high levels of craft and skill in woodworking must have been evident throughout the Roman rule in Britain. The Dark Ages that followed saw many developments, and of course losses of these skills. However, we can only pick up those threads post-1066 when record keeping and inventories became more common and more has survived.



The woodcarvings at Chester Cathedral exemplify the Gothic trends of repetition, symmetry and verticality...



... the latter of which is also epitomised by the imposing Canterbury Cathedral

This period from the latter Dark Ages, well into the Norman era, was a great monastery and castle building time and much of the stone work at least has survived intact (the Tower of London dating back to 1078, for example) or as archaeological ruins (Fountains Abbey, 1132). The carpenter would have had a significant role during this time, not least constructing the massive beam structures that would have held the roofs in place.

We shall see, however, that in those early years of the Norman Conquest, furniture making as a discipline was not a speciality set apart from any other area of woodcraft, and that such artefacts had not reached the stage where they were regarded as chattels signifying wealth or status. Fabrics and cloth and metalwork were regarded with much higher esteem. Often wooden artefacts were constructed simply to display those items.

The term carpenter probably came into use just after the Conquest, emanating from the French 'carpentier', which itself derived from the Latin 'carpentrius' (maker of carriages). The Middle-English preference had been for 'wright' as in arkwright, wheelwright and even boatwright. This term fell out of favour as the language developed after the Norman occupation, although interestingly it was retained through surnames, especially in the north of England. We will see at a

later stage further examples of how the language of woodworking has entered into general usage, and how many words and phrases that we take for granted have their origins in the craft.

### Localised trade

At this point in history there was obviously no industry as we regard it today. Crafts of all types would have been very localised, every village having its own carpenter, blacksmith and so on. Difficulties in communication would have resulted in any developments in technique also being very localised and slow to spread. All timbers would have been locally sourced, oak being the mainstay, but also beech and whatever else was close at hand. Trees were felled with an iron axe as and when required and converted for use by the carpenter himself. Wood was not sawn, but riven into segments along the grain with the use of iron wedges driven into the timber. These would be cleaned up and squared into boards with an adze. Seasoning and drying were little understood, so the qualities of green oak were embraced. Carpenters came to make use of these qualities in the development of the great supporting beamed structures of great halls and barns.

During this time carpenters would mostly be occupied in building dwelling places –

the wooden framed huts in which the majority of the population lived, stone buildings being reserved for the church, castles and fortifications. Furniture in these dwellings would have been sparse and developed to suit the requirements of domestic life. Stools were the principal item – the three-legged variety, as these have the capability of remaining stable on any uneven surface (such stools survived well into the last century as the milking stools). Beds would have been of straw, and tables may have existed, but only as a board on some form of trestle arrangement. Britain also has a great history of shipbuilding in oak, but this reaches a pinnacle later as the skills of carpentry developed into joinery.

The possessions of the peasant population were few and far between so storage requirements were negligible. Both the church and the ruling classes would have need for storage facilities of some sort and while no original examples exist, we do know that chests were hewn out of solid tree trunks. The whole was wrapped in iron bands to help it retain a semblance of shape as it warped and twisted through the drying process. This later developed into a structure consisting of boards of timber fixed together with iron nails. Of course, the problems of shrinkage and warping were not



An early milking stool

overcome but actually accentuated by the very technique used to hold the structure together; as the timber dried it simply split away from the nails that were holding the boards in position. It was not until the development of the 'Joiner's Mystery' that this problem was overcome.

### Changing terms

Vestiges of the Anglo-Saxon language remained throughout the Norman period and makers of chests were often referred to as arkwrights. The word 'ark' meant a place of safety, a term with biblical origins, as in the Ark in the Covenant, which housed the writings of Jewish law handed down to Moses, and of course Noah's ark.

'Hutch' was retained, describing artefacts used for storage purposes, hence the hutchier, although these days we tend to think of a hutch as housing small animals such as rabbits. Rarely in common use these days the word 'coffer' referred to makers of similar objects. Today we tend to think of it as a monetary repository, although it referred originally to a receptacle for storing any valuable object.

The tradesmen who made these objects – the arkwrights and hutchiers – lacked the history and traditions of the carpenter and were not regarded with the same status. They eventually fell from grace as the woodworker's craft developed and its scope widened to encompass



Negligible storage needs meant people often used simple 'arks' to store their possessions

the changing domestic dwelling arrangements of the church and aristocracy and the functional requirements of developing furniture.

Up until the mid-13th century, the carpenter was generally the sole woodworker to be regarded as a 'craftsman' and he remained so well into the 16th century. He was assisted, certainly in architectural structures, by the carver, who in terms of skill and expertise is historically, and quite rightly, often regarded as being a far superior craftsman to the carpenter.

The work in the rood screens and pulpits and choir stalls of religious institutions was highly detailed and complex and a testament to the carver's skill rather than the carpenter's. Stanton Harcourt in Oxfordshire, dating from the 13th century, is one such example of this.

### Reach for the heavens

The fact that we have so few examples of work makes it problematic to identify a style or aesthetic. The predominant style in architecture throughout Europe had been Romanesque, an amalgamation of Roman and Byzantine styles. However, accurate dating of this is open to debate, with starting points ranging from the 6th to the 10th centuries. In Britain the tendency is to refer to this style as Norman, which then as far as we're concerned places it in the 11th century. The Romanesque style developed and



The Normans may be best known for 1066, but their dedication to record keeping is one of the things that makes them so valuable to us today

evolved into what was to be known as Gothic architecture, a term not used until the following Renaissance period and coined as a stylistic insult. Originating in France, the Gothic became the favoured style for churches, abbeys, and the great cathedrals throughout Europe until well into the 16th century and was later revived in the 19th century as Victorian Gothic.

One of the key elements of the style was the emphasis on verticality. The structures, especially ecclesiastical buildings, appeared to grow out of the ground and stretch towards the sky, reaching to heaven. Enabling and emphasising this was the development of the pointed arch, which required no keystone to stabilise it. This allowed builders to construct high and wide windows, flooding the buildings with light.

These characteristics were adapted by the woodworker, especially the carver, to provide a coherent whole to such buildings. Carving tended towards repetition, symmetry and again the emphasis on the vertical.

While today we can marvel at the skill of those early woodworkers and bask in the glow of an almost poetic and ethereal use of our native English oak, there is evidence to suggest that, without exception, this realisation of the carver's art was painted and often gilded. This somewhat skews our perception of the visual effect these structures had, much in the way that we know buildings and stonework, including sculptures, from Ancient Greece and Rome were also painted and highly decorated.

### Jack of all trades

So we have seen that the carpenter, a general-purpose woodworker, reigned supreme in Britain from our starting point (1066) up until the mid-16th century. His skills developed from producing simple wooden framed dwellings, stools and chests to, with the help of the carver, the highly complex and decorative ecclesiastical woodwork of the great cathedrals and abbeys. Along the way were the massive sturdy, beamed ceilings in halls and barns utilising the merits of green timber. Alongside the carpenter, but with lesser status, were the arkwrights and hutchiers, and eventually we will see the emergence of the joiner. **WW**



The adze is still used to hand build boats, amongst other things

### THE ADZE

An adze is widely known as being used for smoothing rough-cut wood. The blade is set at right angles to the tool's shaft like a hoe, and unlike the blade of an axe, which is set in line with the shaft.

Generally the user stands astride the board, previously riven from a trunk, and swings the adze downwards towards their feet, shaving off pieces of material and moving backwards as they go, leaving a relatively smooth surface behind.

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# Time for a change

Michael Allsop presents an alternative approach to the mantelpiece clock for those lacking in machinery

**I**t is always satisfying when circumstances contrive to create a satisfying result, especially when initially things may look less than perfect. This philosophical start is an attempt to explain the position in which I found myself towards the end of last year. Out of work last summer and with no immediate



**1** Opting only to use hand tools for this project, I was faced with cutting a 50mm block of ash with a handsaw – a trying job

prospects of finding work, I joked at the time that I'd be making everyone's Christmas gifts rather than buying them. As the year progressed, however, I started thinking about this more seriously, and not just because of the job prospects! With my free time I had enjoyed my first project using hardwood – the construction of two ash and cherry canoe paddles. These had travelled with us to Sweden and performed pleasingly well during a week-long canoeing holiday. Buoyed up by this success, I was looking for another project when I came across one of Dominic Collings' past articles and plans for mantelpiece clocks.

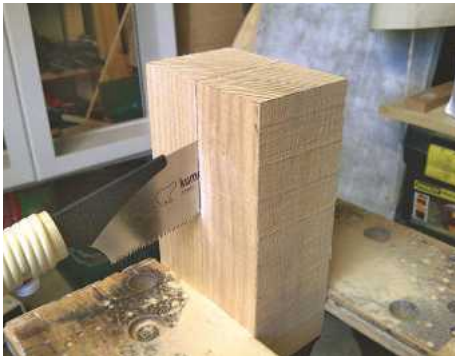
Intrigued by the design and inspired by the challenge, I decided to make one of these clocks for my parents for Christmas. They have always enjoyed handmade things, especially items of furniture or paintings, and pieces created by family members are usually held in fond regard, so I knew that if I made a good job of it everyone would be satisfied by the result!

## Doing it with hand tools

Having studied the two designs featured in the article I decided that the more rounded of the two would better suit their décor and style. However, while I would keep the design as close as possible to the plans, the method of construction would be very different. To some extent, Dominic's design had been created to facilitate the use of machines to size and shape the wood. My workshop, which doubles as a garden shed and bicycle storage facility, neither contains nor has the space for such tools. I do, however, have a Japanese saw that I find myself using more and more and a couple of decent planes that I bought for making the paddles.

Because I can't process large blanks when undertaking woodworking projects I've become rather fond of the laminating technique; that is, building up workpieces using smaller pieces of timber. This worked for the paddles and I thought it would be just the trick for making an interesting body for the clock. A trip to my local timber yard – Illingworth Ingham in Hyde – furnished me with a nice block of ash and an offcut strip of sapele. Working out the minimum amount of cuts necessary to arrive with the correct-sized blocks, I soon set to work with the saw.

Hand-sawing a 50mm-thick block of ash requires a lot of patience, several breaks and even more cups of tea, but if done carefully I



**2** I knew, however, that if I did this carefully, I would save a lot of time at the finishing stage



**3** The laminae of ash and sapele were fixed together with Gorilla glue, which I find reliable and easy to use



**4** To remove the waste from the bevelled front and back, I used a saw followed by a plane to refine the shape of the block



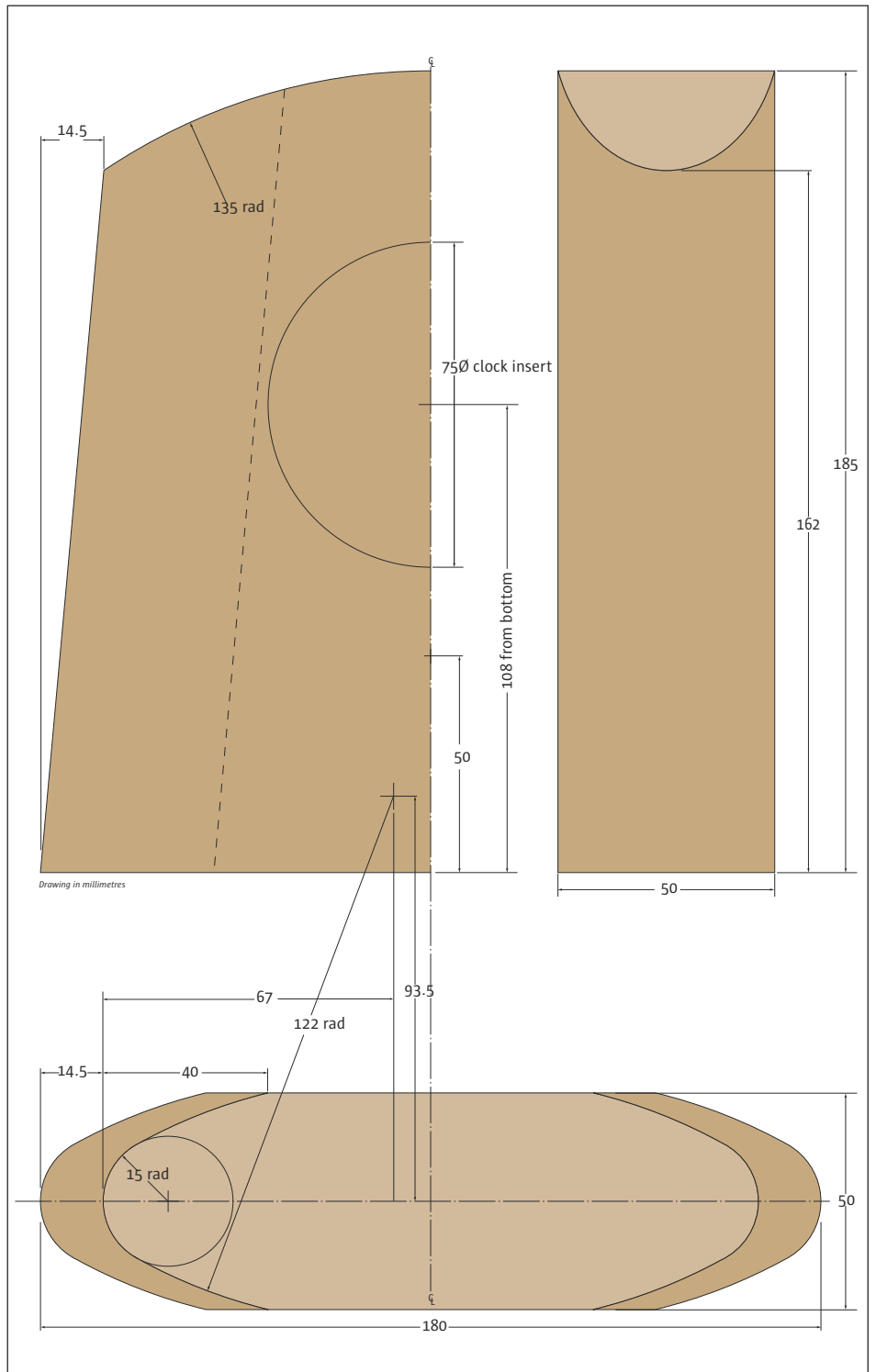
**5** The top's corners were sawn off, and the curve perfected with a rasp, spokeshave and file

knew I'd save myself a lot of time at the finishing stage. Similarly, carefully cutting and planing the strips of sapele would make my life easier later on. Finally, the five pieces of wood were ready for laminating and I used the remainder of the Gorilla glue that I had bought for the paddles. I love this stuff, easy enough to work with and when dry, strong and invisible in a good join. When it had dried I used a router to cut the rebate for the clock movement, my one concession to using power tools in this project.

### Shaping up

Next I needed to finalise the shape of the clock. To remove the waste from the bevelled front and back I decided rough sawing followed by some plane work would be the best approach. This worked well enough, but with the amount of wood that still had to come off, regular sharpening of the plane blade was essential. It really showed that you only notice how blunt it has gotten after you've sharpened it! The curved top needed a different approach. Sawing the top corners off got the process started but I then found a rasp, spokeshave and fine file achieved the smooth radius featured in the design.

After giving the whole piece a sanding to round all the edges and remove any file marks it was then ready for oiling. A thinned coat of Danish oil was followed by another couple of coats of undiluted oil with buffings in between each coat. To finish everything off, a pad of dark brown felt was glued to the base with spray mount and finally the clock movement was inserted into the rebate. Time to stand back and enjoy the result! **WW**



**Fig.1** Mantelpiece clock

NEXT MONTH

## Coming up in the next issue...

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### SIDNEY THE SMOKING SNOWMAN

Andrew Hall returns with a fun Christmas turning project, which sees him using simple hollowing techniques to create a snowman that actually smokes!



#### MEN IN SHEDS

Embarking on a road trip to visit his local UK Men's Sheds Association premises, Rick Wheaton is warmly greeted by the members and discovers that each is doing their bit for charity while practising what they love – woodworking



#### A BOX CALLED DITTO – PART 1

In part 1 of making a ditty box, Robin Gates reclaims old oak for the sides and ends, cuts rebates by hand, and finds a sweet technique for restoring a rusty saw

**PLUS** ■ Shepherd huts ■ From stool to table ■ Me and my workshop – Linda Kemp  
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## Wixey WL133 drill press laser

This clever device from Wixey is designed to project a thin set of crosshairs onto your drill press table precisely where the drill bit will contact the workpiece

I think we all recognise the value of 'after market' parts and accessories, especially when there seems to be some sort of synergy between the original product and that which has been manufactured especially to fit. A good example *The Woodworker* came across recently is this laser sighting device designed to fit onto a drill press or similar. It's made by Wixey, an American company, and is a nice blend of high-tech engineering and simple home-spun workaround; the sort of thing you might come up with yourself and be proud of.

### Simple reliability

Faced with the not insubstantial problem of securing the laser device to any number of random – and different – drilling machines, the makers have thrown finesse out of the window and gone instead for simple reliability, easily achieved, and a very good thing in my opinion. A good-sized example of the ever popular hose clamp (or Jubilee Clip as it's more commonly known in the UK, land of its invention) is the method chosen to fix the laser to the top of your drill press column, and is the work of only a minute or two to securely achieve. I had slight misgivings about the (borrowed) machine I was using as a test host; it features a worklight just where the laser would be best placed and so cramped things a bit, but fortunately not too much to interfere and spoil the show.

### In use

The two lasers sit turret-like at both extremities of the projecting shelf-plate with the battery pack in between.

Using a combination of manual turret-swivelling – nice and positive, no slack or jerk – and a little grub screw tweaking, the two lasers can be set up with as much precision as you've got the patience for. Step one is achieving true plumb for the red laser lines by using a small rectangular section of timber. This needs to be bang square face to edge, so don't just pick up any old scrap off the workshop floor. Once you've got the lines squared down, it's a straightforward task to line them up on the target. For this you need to spot drill a tiny hole to a test piece clamped to your drill press table (make sure everything is solid and tightened securely), then zero the lines in so that they converge at the very centre of the zero point.

During the set up I found the laser lines fairly easy to focus on; on some kit they can be just a shimmering blur and difficult to pin down visually. Possibly the trickiest part of the job was craning my neck to look back at the front of the press from the side; if your drill is open all round then you're laughing.

In use the laser guide was as helpful as you'd imagine; you'll be cutting out a fair bit of guess work and you can say goodbye to all that squinting between drill bit and workpiece. Not every job will require it (especially those where you're using needle-pointed bits), but it'll definitely pay off when you've got plenty of large-sized regular drill work ahead and you still need the additional accuracy.

### In summary

All in all, a good thing, nice and accurate and one more accessory to make workshop life a bit easier. **MC**



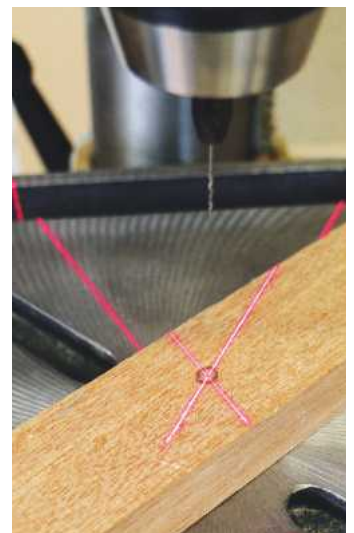
Securely fastened to somewhere close to the top of the workshop drill press



Calibrating the laser lines to plumb. Note proximity of drill press worklight



Preparing the target



Red laser crosshairs in full effect



## GKF 12 V-8 Professional compact router

If you like the idea of cordless routing, then this new offering from Bosch will certainly appeal, although you may find a mains version will do the job quicker

The steady improvement in power tool engineering technology – most notably of late the brushless motor – has brought about changes few could have foreseen or expected. Better batteries mean they can be smaller and the same goes for just about everything else. I first used a battery-powered router about 15 years ago and felt that, while it had potential, it wasn't really what people wanted at the time. With increased reliance on (and familiarity with) cordless tools, regular and frequent changes of battery are now the norm and everyone has backups and spares.

### Ingenuity in design & manufacture

All of these factors have combined to bring us the Bosch Professional 10.8V compact router. There's no question that this is a small router indeed, and yet another example of ingenuity in design and manufacture. It comes in at a nice weight and is one of the most comfortable power tools I've yet to hold, full control being entirely possible with just the one hand. All is present and obvious: a spindle lock to change bits, both macro (i.e. quick) depth setting and a fine tuner to get the precision, then a simple lock to keep it. The on and off switch also indicates battery levels (at start) and that's your lot. In fact, that's all you need.

Bear in mind it's only a small machine, so I wouldn't be expecting too much in terms of waste removal, and it doesn't have a fence so it's pretty much restricted to edge work (with a bearing-guided bit); I think they could have called it a trimmer and been nearer the mark with its name. That said, after some initial experimentation, I treated it as a regular router and ran some ovolo mouldings on a hardwood window job I've got in at the moment. I must confess I thought it would struggle a bit but, though it heated up nicely, it completed the job (9 linear metres) on the same battery.

Although the sole plate is generously sized by proportion, there's sadly no room for a fence nor dust extraction. I found that its slightly lower than normal running speed produced coarser shavings than would be usual, so there is less fine dust to contend with. Clearly this is a fixed-base machine so don't expect any plunging, and it will take collets for 6 and 8mm as well as the default  $\frac{1}{8}$ in.

### In summary

While some may wonder why, there's no denying that a dedicated trimmer on a job means your main router can be left set up for the heavy work. **MC**

### Specification

**No load speed:** 13,000rpm  
**Voltage:** 12V  
**Weight:** 1.3kg  
**Dimensions:** 144 × 80 × 252mm  
**Buying option:** Body only (no batteries, case or charger)  
**Battery compatibility:** Bosch 12V Li-ion

**Price:** From **£166.80**

**Web:** [www.bosch-pt.com](http://www.bosch-pt.com)

### PROS

- It's small and cordless

### CONS

- Mildly challenging to set up
- Will do the job but a regular mains router will do it quicker

**RATING:** 4 out of 5



The spindle lock pulls out for bit changes



Tightening a bit in the collet



The quick depth setting button (macro)



Adjusting the fine tuner, the lock is on the other side



I ran this ovolo moulding with battery to spare



# Low-angle jack planes

We take a close and detailed look at the development and uses of low-angle jack planes before putting four of them to the test

As woodworkers, we are all pretty familiar with the standard metal body plane, often referred to as a Bailey style after the inventor Leonard Bailey and, once the patent expired, copied by every man and his dog who wanted to sell a plane that was capable of the majority of tasks a plane should do.

It's proven its worth for well over a century now, and while a tweak or two here or there has been made, some for the user's benefit and others for cost saving, it remains essentially the same plane.

However, it does have the odd shortcoming. While a great plane in general, working interlocked or tricky grains can be difficult, even when it is finely set and the frog is moved up to close the mouth.

The bedding angle and bevel-down design dictates that it will only work at that particular angle, although there is a workaround, often referred to as 'the ruler trick' and promoted by world-renowned cabinetmaker David Charlesworth.

To do this you effectively remove the flat back for which we all strive by elevating the plane iron slightly via a small steel rule used as a wedge to raise a minute bevel on the flat side, effectively increasing the pitch the iron cuts at. While it works well, you will need a replacement iron to ensure you can go back to the normal design if needed.

But what is the option if you don't want to do this, or indeed, you often work gnarly timbers and want a more permanent solution?

## Question of degree

The blurb for a block plane normally touts it as being ideal for end-grain work and suchlike, with a low-angle model seemingly the best for the job.

These low-angle models normally bed at 12°, so with a standard honing angle of 30°, the cutting angle sits at 42°, just 3° shy of a Bailey frog. But the design gives more of a slicing action, and with the adjustable mouth you can close down to within a hair of the iron for very fine shavings. It is not, however, the plane for working boards; a block plane is for finer work, cleaning up edges, easing in, fine-tuning and suchlike tasks.

The ex-king of plane making, Stanley – seemingly having a plane for all occasions at one stage of its reign – took on this bevel-up block plane principle and introduced a model in its range, but beefed it up to full hand plane size. This No.62 was bizarrely marketed as a plane for making heavy cuts across the grain, not for finer work.

That's either jack plane or scrub plane territory depending on how much you need to remove – so even back then they must have employed marketing guys who didn't do woodwork! I can only assume the marketing bods looked at the size and thought 'jack plane length, jack plane use' so assumed it was for initial roughing down and general planing.

## Butcher's block model

But while the plane followed the jack plane size, and in that respect was definitely suitable for working wider and longer boards, the jobs a block plane is used for are a better indication of the bevel-up plane's true abilities.

Aside from the bevel-up jack, Stanley also had a similar slightly shorter butcher's block model although that one didn't hang around too long and is very rare.

It may be that someone saw a real end-grain butcher's block and realised there was no way a plane would be ideal for flattening it. I know back when my granddad was the local butcher he used to have a block that would have needed a chainsaw taken to it first, to try and square it up and take the dents, dishes and chops out of it! Even so, the No.62 didn't outstay its welcome, and, like many Stanley planes, it died out over time, seemingly running its course. Why this happened is anyone's guess, but as with the router kicking the multiplanes into touch, I'd guess newer technology and changes in woodworking did plenty of damage, with cabinetmaking and solid timbers being replaced by pre-veneered boards and mass-produced flat-pack stuff.

As sanders became available that could guarantee clean tear-free faces with less effort and time spent, even for specialist work, specially designed planes took a back seat.

## Hand tool renaissance

But there's a renaissance in hand tools at the moment, with some older-style planes that disappeared now coming back on the market. Some have more appeal for collectors rather than true woodworkers, especially a couple from Lie-Nielsen that were probably equally limited in their use when first invented! (Butt mortise plane anyone?) Lie-Nielsen tends to keep faith with the original Stanley concepts but with the addition of fine tolerances,



plus superior castings and fittings. A Lie-Nielsen version usually outstrips the originals by a long way in these areas, but because of the closeness in design to the originals, can still be a little limiting in use, lacking finer adjustments in some instances.

Stanley is seemingly looking closer at the market it once dominated, and at the resurrection of some of its early models as well as variations on the theme by Veritas, and has relaunched the Sweetheart brand and logo. This was seen as the golden era of Stanley, and these tools are highly sought.

In doing so, Stanley has come up with some new designs of its own in traditional smoothing, block and shoulder planes, but the new No.62 remains pretty faithful to the original. In saying that, however, there's little that could be altered because it's such a simple tool, being just a long block plane. Although the lateral movement is not a strong point, there's little, if any, usable movement for squaring the iron to the sole.

#### Accurate machining

This is a problem with low-angle planes in general. The need for ultra-accurate machining is paramount because a discrepancy in the bedding angle is magnified as the angle lowers, so the iron will sit slightly askew.

An adjuster or some play in the fit between the side wing and the iron will get over this, but if the fit is too tight or the adjuster simply moves

the whole iron across, as is the case with the new Stanley, you need to hone slightly out of whack to accommodate it.

Veritas sees the plane market as a whole new ball game and has devised simple, but while some of this company's planes may not win any beauty contests, they do a remarkable job. Its take on the bevel-up low-angle jack plane is a great example, using simple grub screws tapped through the wings of the plane to restrict the iron at the mouth so that when the lateral lever is used, it actually skews rather than slewing across. This allows you to make fine adjustments very effectively and retain that position easily after honing.

That simplicity is replicated on the mouth. Being able to close the mouth down is useful to minimise tear-out; to keep the iron from coming into contact with the mouth when you close it right down there's a small brass knob that acts as a stop to set the aperture. Again, it's handy for moving from fine mouth to open mouth and back quickly and easily.

#### Wild grain action

But it's more about what the bevel-up can do that makes it worthwhile adding one to your kit. It will do the same work as a standard jack, so you can still do the fast, rough prep work as well as shooting and straightening up stock, but it also addresses the shortcomings of the Bailey design to take on wild grains. **AK**



### Specification

Made in: USA  
Blade: 51 × 4.6mm  
Weight: 2.05kg

Typical price: **£243.47**  
(please note that prices may be subject to change without notice)  
Web: [www.axminster.com](http://www.axminster.com)

**RATING: 5** out of 5

## Lie-Nielsen No.62

This plane is actually Thomas Lie-Nielsen's favourite product from his entire range of American tools, which says something about its pedigree. It's based on the largest Stanley low-angle plane produced during the early 1940s. The polished cherry handles are beautifully contoured and it's the lightest tool we tested. Not surprisingly, it performs faultlessly and the manganese bronze cap iron certainly adds a degree of elegance. With no lateral adjuster, the edge of the blade must be dead square when it comes to regrinding, though you can nudge it to one side if necessary when tightening the cap iron screw. Both toothed and scraper blades are available for this superb tool.



You alter the mouth opening with this hefty brass lever

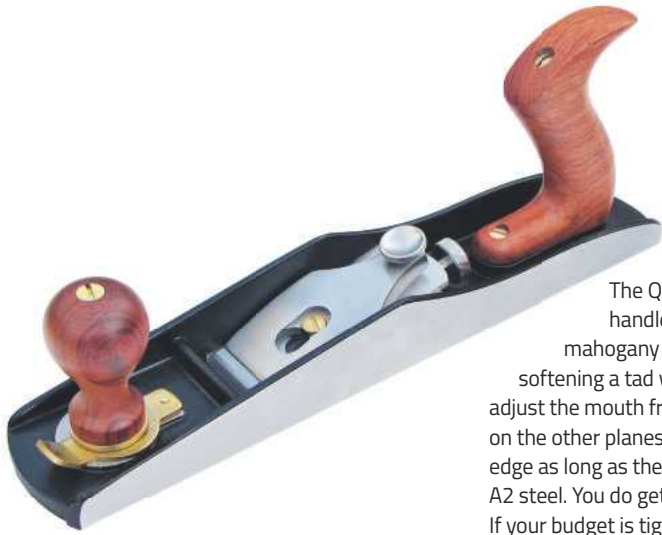


Blade travel is precise with this stainless steel screw



The polished lever cap is from cast manganese bronze

# Quangsheng No.62



## Specification

Made in: China  
Blade: 51 × 3.1mm  
Weight: 2.45kg

Typical price: £138.50

Web: [www.workshopheaven.com](http://www.workshopheaven.com)

RATING: 4 out of 5

The Quangsheng is a real Asian beauty, with polished bubinga handles. In fact, its sleek profile reminds me of those gorgeous mahogany speedboats from the early 20th century. Sole edges need softening a tad with a needle file, but this is nothing too drastic. You can adjust the mouth from 8mm right down to zero, a facility that is not possible on the other planes. The blade is a bit thinner and did not seem to keep its edge as long as the rest either, which I suspect is because it's not made from A2 steel. You do get two extra blades provided, though, which is fantastic. If your budget is tight, then the Quangsheng is the plane to choose.



The Quangsheng's mouth is set with this brass lever



Unlike the other planes, this lever cap is stainless steel



A Norris-style adjuster provides lateral movement

# Stanley Sweetheart

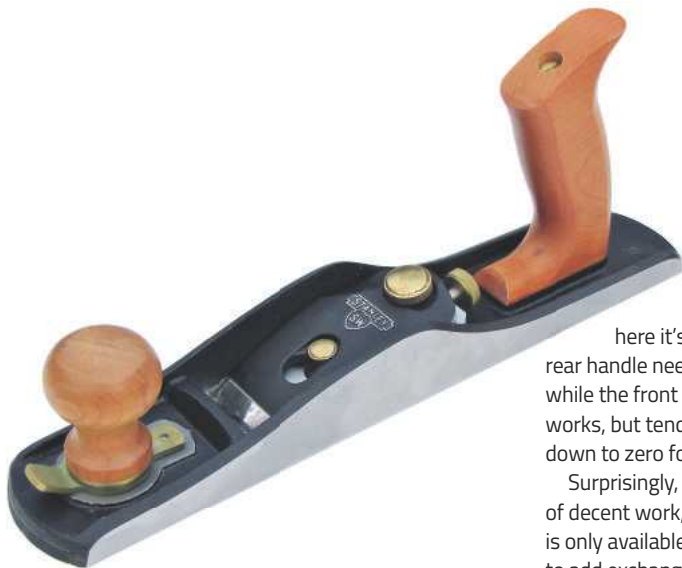
## Specification

Made in: China  
Blade: 51 × 3.1mm  
Weight: 2.45kg

Typical price:  
From \$122.37

Web: [www.stanleytools.co.uk](http://www.stanleytools.co.uk)

RATING: 3.5 out of 5



In isolation you may be quite impressed with the Sweetheart. Its appearance is quite pleasing, especially when you consider standard contemporary Stanley bench planes with their nasty plastic handles. Alongside its rivals here it's just a bit awkward and slightly crude, though. The cherry rear handle needs some TLC with abrasives to make it really comfortable, while the front adjustable plate needs filing so it will slide smoothly. This works, but tends to stick. You can't actually close the mouth completely down to zero for very fine cuts on wild grain, but it's not bad.

Surprisingly, the Stanley actually has the thickest blade and is capable of decent work, but not straight out of the box. At present the Sweetheart is only available in North America, hence the dollar price above, so you'll need to add exchange rates and postage if you want to get your hands on one.



The substantial brass lever for closing the mouth



Made from aluminium, the lever cap is incredibly light



The traditional Norris-pattern lateral blade adjuster

**Specification**

Made in: Canada  
Blade: 56 × 4.5mm  
Weight: 2.55kg

**Typical prices:**

£250.18 – with (O1 blade); £259.49 – with PM-V11 blade (please note that prices may be subject to change without notice)

Web: [www.brimarc.com](http://www.brimarc.com)

**RATING:** 5 out of 5

# Veritas Low Angle Jack Plane

Veritas tools are known for their innovative features, this jack plane being no exception. Longer, wider and heavier than the rest, it may not suit everybody. As the most expensive plane in the test, what makes it so special? Besides build quality, it's the various adjustments that just work reliably and smoothly, as they should. The lateral adjuster moves nicely, while the screw stop on the front plate is clever and saves this hitting the cutting edge. You can even close the mouth right down to zero. Two screws down through the rear handle ensure this remains rock-solid. Various blade options are available, making the Veritas a pretty versatile tool.



You slacken off the knob to slide the throat plate back



Rotating this screw prevents the plate from hitting the blade



The aluminium lever cap is a snug fit and fast to tighten



This is the best lateral adjuster mechanism of the lot

**Conclusion**

Before testing, I sharpened each plane iron using a honing gauge to achieve a consistent edge. To give them a good workout I subjected each tool to a variety of timbers: pine, sapele, lacewood, iroko, some wild Spanish olive and quartersawn European oak.

In terms of build quality, both the Lie-Nielsen and Veritas planes are superb. The American tool is obviously more traditional and delightful to use. If you're willing to part with quite a lot more cash, the Canadian cousin offers some clever features. I particularly liked the lateral adjuster, while the grub screws mean you can set the blade very precisely – perhaps too fiddly for some. To be honest I found the Stanley a bit disappointing. While the three other contenders are dressed for the ball, the Mexican is still in work gear and is a bit rough around the edges. Yep, it does its job, but it's not refined...

There's no question about best value here. The Quangsheng may not

be quite up there with the North American planes, but it's not far behind the Lie-Nielsen. It works extremely well, plus you get two extra blades thrown in.

All the planes worked well enough with a shooting board, the Veritas being slightly easier to hold with its dimple to accommodate your thumb. And you can buy a hot-dog handle for the Lie-Nielsen if you tend to do a lot of shooting.

As something of a traditionalist, I've always tended to favour Lie-Nielsen tools over the Veritas equivalents – I find some of the Canadian bench planes quite awkward to use – but if I had to choose an overall winner in this test it would just be the Veritas. On wider boards I found the slightly wider blade and extra weight helped planing performance, while refinements such as the lateral adjuster are far better than on the Stanley and Quangsheng. Actually, although the Lie-Nielsen does not have this Norris-type adjuster, the American plane works perfectly well without one. **PD**

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

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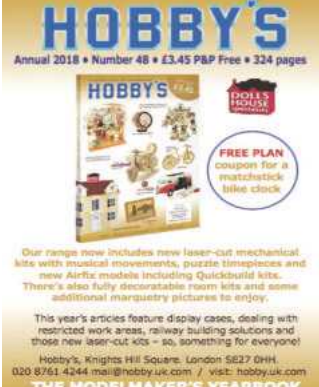
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# Welcome to Bugbrooke Church

This month we join **Stan Clark** as he shares his memories of working at his local church, struggling to master the organ, and meeting a famous visitor

**D**uring the period that I worked for Mr Harold Ward, Bugbrooke's well known ladder maker and undertaker, I was often asked to pump the church organ so it could be played during the funeral service. It had a very large set of bellows along with a large reservoir for the air, and was very old and dusty. One time while I was pumping the handle, quite a large amount of dust came off it and started to make me sneeze. While trying to stifle the sound of my sneezing, I just happened to quaver the pump handle instead of a nice steady action, and found that the whole pump and reservoir started to oscillate. This affected the air that was working the organ, and the notes that were being played started quavering even though I had gone back to pumping nice and smoothly, and up until the end of the hymn the music was not as it should have been. The looks on the faces of some of the mourners was quite amusing, and luckily a few of them saw the funny side of it and broke into lovely smiles.

## Organ troubles

At the end of the hymn, while the Rector was talking about the deceased and saying several prayers, the organist came and looked at the whole setup as he told me that it had never done this before, but due to the short period of not having to pump, it had settled down and the next hymn went nice and steady; the organ played a treat with no playing up.

After the funeral was over and we had filled in the grave and put the flowers on top of it, I was asked to go and see the organist before we left. I thought that he was going to tell me off, but he asked me to make it oscillate as it did during the service. I told him that it had come about because I started to sneeze, and he asked me to make the thing quaver once more while he sat and started to play. He got quite a thrill out of doing so and found it very amusing, for it was the first time it had ever been made to oscillate in such a way. From what I gather, it was not long after that they purchased an electric pump, for once folk knew that it would start to oscillate, everyone was making it do so to the annoyance of others.

## Chasing Spires

Another time I was asked to dig a grave next to the path near to the church's main South Door. On arrival the Rev Charles Harrison came out from the church to show me the spot where the grave needed digging, and before he returned back to his vestry, he asked me to keep an eye open for a gentleman who was coming to visit the church that day.

I was merrily digging away and was down to about waist high, when a strange looking fellow wearing a long flowing trench coat and a funny shaped hat came walking up the path towards me. He asked me if I was the church's sexton, and not knowing (for our family were mainly chapel), I replied "No, I am just a grave digger." "All the same," he replied laughing and joking, "sexton is the name for a grave digger within the church."

He told me his name was Mr John Betjeman and asked me as to what my name was and to the whereabouts of the Rector, for he said that he was expecting him.



The (possibly) ancient ladder leading to the tower at Bugbrooke Church

I said that he had asked me to keep an eye out for his visitor, and as I showed him the way into the church he told me he had come to look at the large wooden screen that was inside.

The Rev Harrison seemed so excited on meeting this man, for when they shook hands it seemed as though they were never going to let go of one another – I had no idea as to how famous he was. After he had been shown around the inside and outside of the church, and made lots of notes in his notebook, he departed and the Rev Charles Harrison told me that he was the Poet Laureate. But before he left, he came back to the grave with me, and sat and talked while I worked away. He asked me all about myself and the type of work I did for a living, along with asking about my family, and how long we had lived in Bugbrooke.

From what I can gather at the time he was writing a book about churches called *Chasing Spires*. Looking back it was quite an honour to have met the said man. **WW**

## NEXT MONTH

Join us next month for more stories from Stan and his colleagues in the ladder making shop. And if any other readers have a story to tell, we'd be glad to listen. Just write to [editor.ww@mytimemedia.com](mailto:editor.ww@mytimemedia.com) and we'll see how we get on

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