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- DAVE ROBERTS MEETS WOOD ENGRAVER BOB GUY
- JOHN ENGLISH ON TURNING WITH CARBIDE INSERTS
- LANCE WINTER MAKES HIS OWN WOODEN BAR CLAMP

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# Welcome

Hello and welcome to our April issue, which we hope has something that appeals to each and every one of you. Perhaps that's a tall order, but we always do our best! Firstly, I'd like to thank all readers who wrote in regarding my last welcome piece (March issue), which detailed the debacle surrounding the taking off of doors in order to fit in furniture and also the ongoing scaffolding dilemma. Gordon Watson recounted a similar story concerning friends of his living in Amsterdam where the houses are unbelievably narrow and furniture is delivered by being lifted via rope and pulley and taken into the house through the windows. Luckily we didn't have to resort to those extremes as when I came back from my trip to Cornwall, I was delighted to see that the scaffolding had in fact been dismantled and removed, after three long months! This means that with the aid of several strong men, we'll be able to manoeuvre the bookcase through the window and into our living room. This will still be a bit of an awkward job but much easier than having to negotiate scaffolding poles and potentially asking for them to be moved. Operation 'bookcase' is due to take place this coming weekend, so I'll let you know how that goes!

## Cornish snow & seasoned woodworkers

Since I last wrote, as mentioned above, I have once again visited my homeland of Cornwall and as happened last year, got snowed in! I don't know what it is about me visiting in February, but I always seem to bring bad weather! To be fair it was a lot worse last year and some

of you may remember the photos I shared of 6ft snow drifts. Luckily there was just a healthy 6in of snowfall this time, but still enough to render the rural Cornish lanes (which don't get gritted) completely unusable for at least 24 hours. During my visit I also finally met my brother's partner's father, who to my surprise, told me about his woodworking journey, well equipped workshop and the kinetic wooden structures he makes in there. Next time I visit, I've promised to go and see what he does, so perhaps this would make for an unusual feature?

## April at a glance

Going back to this issue, we've got some interesting folk featured too, including wood engraver Bob Guy and also millwright Malcolm Cooper, who explains his role in the Bursledon Windmill restoration. Les Thorne also completes one of Ray Key's signature turned pieces and we have some fantastic projects and technical articles for you to enjoy as well. Please do keep sending in your letters and emails too as every month I learn so much from you and we do love to see what you've all been making. We hope to hear from more of you soon!

Enjoy!

*Tegan*

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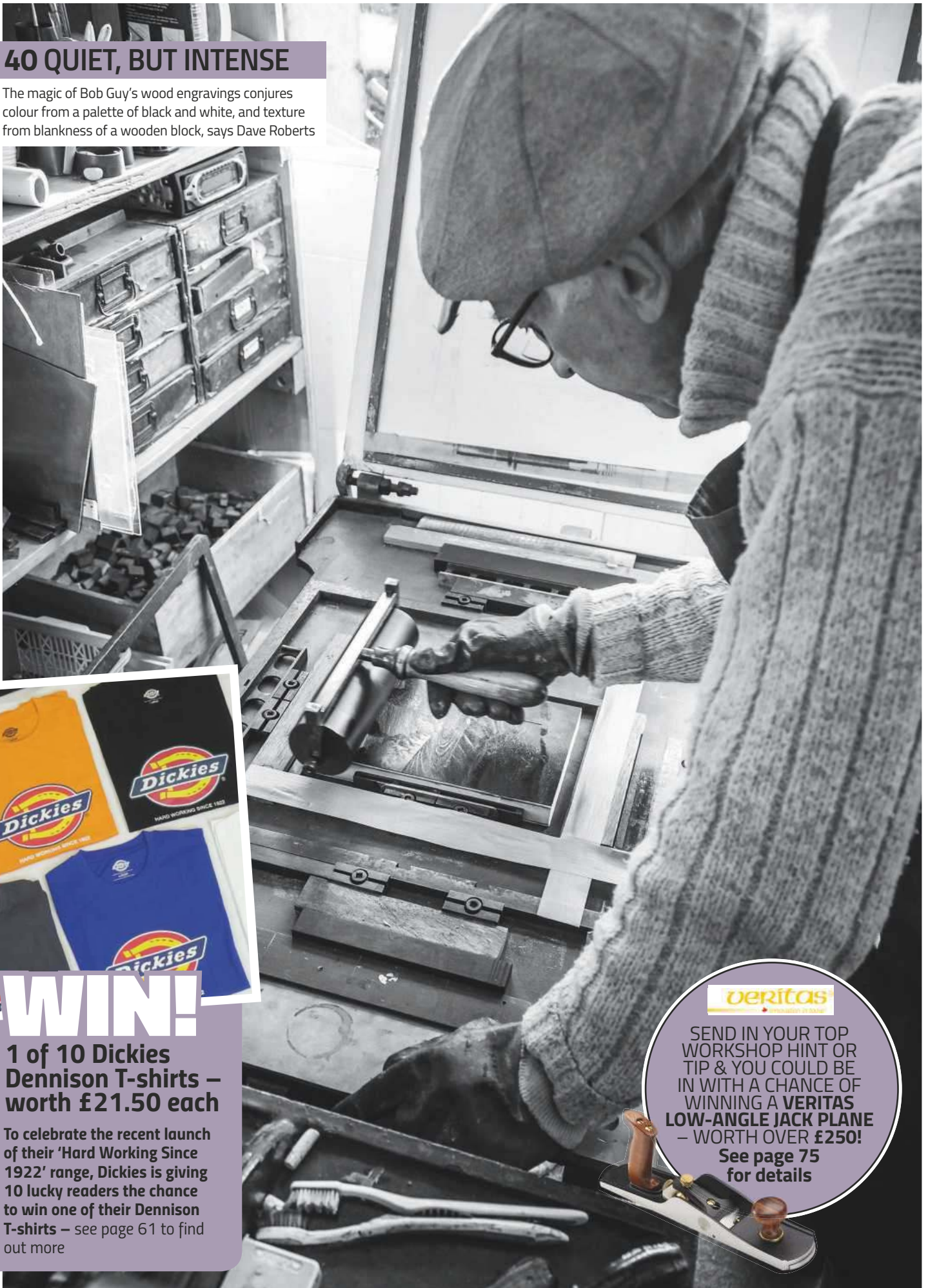
**Dave Roberts**

Consultant Editor

*We endeavour to ensure all techniques shown in this issue 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*

## 40 QUIET, BUT INTENSE

The magic of Bob Guy's wood engravings conjures colour from a palette of black and white, and texture from blankness of a wooden block, says Dave Roberts



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John English shows that turning with carbide tools is an approachable method for any turner and here he makes a number of legs for a foot stool

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#### 70 Window mirror

With some cunning fakery Phil Davy conjures up an extra view

#### 77 Miniature domed temple – part 2

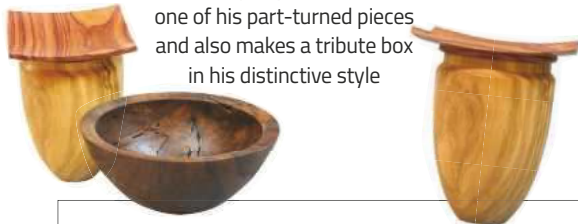
This month, Dave Roberts completes his classically inspired miniature folly

#### 80 Storage sorted

Glen Scott uses pieces of pre-dimensioned timber to make an effective bookshelf and storage solution

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Paying homage to internationally acclaimed woodturner Ray Key, Les Thorne finishes one of his part-turned pieces and also makes a tribute box in his distinctive style



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16–17 Advanced turned box

14 Bird, bee & bat boxes

19\* Pen turning

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\* Course held in Sittingbourne, Kent

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5–12 BVMA – violin & bow restoration

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22–25 Traditional upholstery for beginners

23 Woodturning – make a small bowl

23–26 Woodturning – bowls with texture

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6 Willow plant climbers & garden supports

6, 7, 13 & 20 Green woodworking experience

7 Willow weaving for beginners

14 Hurdle making

14 Sharpening day

27 Basket making

27–28 Greenwood stool making

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detector laser in pulse mode, a function that also helps to reduce battery consumption. The increased return of the cross lines in both vertical and horizontal directions, as well as in tilt, in both locked and unlocked functions, means that the projection of the lines is not only visible to the front surface but are projected back across the ceiling, floor and side walls, and even the stairs, of a room, making them ideal for stud work or pipe work applications.

These body only lasers have a pendulum lock for safe transport or so the lines can be fixed at preferred angles if required. The units have a beam levelling accuracy of +/- 3mm at a range of 10m; a horizontal and vertical line accuracy of +/- 0.3mm/m; a self-levelling range of +/- 4° and a self-levelling time of less than three seconds. A helpful LED light blinks if out of level. Weighing less than 1kg, these Class 2 Cross Line Lasers also have a 1/4" tripod thread in the base.

The operating time with a Makita CXT 1.5Ah battery ranges from 15 hours for the red laser model and seven hours for the green laser; 20 hours and 10 hours using a 2.0Ah CXT battery, and up to 40 hours and 20 hours with a 4.0Ah. Green lasers offer increased visibility in brighter work areas and a more powerful beam. Two brightness modes, High and Eco, can be selected dependent on working conditions. These robust and versatile lasers are supplied with a comprehensive kit including magnetic holding adaptor, target plate, user manual, carry case and full operating and safety instructions. Tripods are available from Makita's comprehensive accessories range.

Two further Makita Class 2 self-levelling 4 Point Cross Line Laser CXT models – the SK106DZ red laser and the SK106GDZ green laser – offer all the functions and benefits of the SK105DZ and SK105GDZ, but are dot lasers. They project plum dots as well as a full line, giving exact measuring references between different points with a point accuracy of +/- 2mm/m.

Typically these lasers are ideal for the installation of lighting systems and levelling of electric sockets; layout of pipework and ducting; the adjustment of guide rails for drop ceilings; hanging cupboards and shelves level on different walls, and for the installation of partition walls and door frames.

For pricing and further information, see [www.makita.com](http://www.makita.com).



## THE UK'S NEWEST OFF-GRID HIDEAWAY CABIN BUILT USING FESTOOL TOOLS

Working in collaboration with UK Architecture and Design Agency, New British Design (NBD), Festool tools have been used to help create an off-grid pop-up pub. The unique Cornwall-based project is now fully operational – powered solely through hydro and solar technology.

Working with nature to enhance what was already there, the low-impact cabin structure was created from a pared down material palette of wood, tin and polycarbonate, using only locally sourced products.

It was important that the tools used were of the highest quality, designed with ease-of-use and safety in mind. Without the use of electricity in such a remote location, the project required equipment that was both mobile and efficient, and Festool provided the ideal solution.

The Festool drills used on the project, including the T18 and C18, benefit from premium battery durability, which was perfect for the 12-hour work days onsite. They also feature brushless EC-TEC motor technology, making them light without compromising on power, which is perfect for users in any location.

A key tool for the project was Festool's TSC 55 plunge cut saw. "Being able to accurately re-dimension timber sections on site proved invaluable, and there was little it couldn't handle," said Ben Huggins, architect and designer founder of New British Design. With a powerful 5,200rpm and 2.2mm standard saw blade, the TSC 55 provided the necessary precision needed, while maintaining a powerful cutting capacity, and the quick acting brake and guide wedge provided essential safety to users.

Festool's commitment to the health of trade professionals was also demonstrated on site, with the new Eccentric Sander ETSC connected to a dust extractor to keep the working environment clear of harmful dust while the tool is in use. Dust extraction is an integral element of the Festool system, with all products ergonomically designed to work together to provide a comfortable and efficient environment, as well as a high-quality finish. "The Festool range is made up of professional tools designed and built to deliver outstanding results," concluded Ben. "With their unique value proposition of being the go-to premium tool brand, the decision of New British Design and other professionals to pay extra for quality and precision is well justified."

For more information on Festool's extensive range of products, see [www.festool.co.uk](http://www.festool.co.uk), and to find out more about the off-grid pub from New British Design, visit [www.newbritishdesign.co.uk/off-grid-pub](http://www.newbritishdesign.co.uk/off-grid-pub).

## KEEP TIDY WITH CLARKE TOOL CHESTS & CABINETS

This professional quality, heavy-duty, lockable tool chest and cabinet from Clarke is ideal for use in an automotive workshop and perfect for keeping tools secure and tidy. Main features include extra large drawer pulls with protective anti-slip drawer liners; ball-bearing runners for super smooth sliding action; extra double wall steel construction; big 125mm industrial chrome spoked wheels with foot brakes; rubber grip side handles and extra large chrome steel side handles for easy movement; safety 'push-lock' drawer design preventing drawers accidentally opening when tilted and all drawers lock simultaneously when top lid is closed; reinforced base;

protective top mat prevents the top chest from moving and provides a non-slip working surface; as well as full length piano hinge lids for smooth opening, security and strength.

Tool chests and cabinets are available in a range of colours, including Blue Line Industrial, Black and Gold as well as Clarke Contractor yellow. The CBB209B nine-drawer chest is priced at £143.98 and the CBB217B seven-drawer mobile cabinet at £287.98. Also available are three-drawer step-up cabinets and 2-8 drawer side lockers can be added to this model, available from £81.58 (all inc VAT); see [www.machinemart.co.uk](http://www.machinemart.co.uk).



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INSOLVENCY AND COMPANIES LIST (ChD)

No. CR-2018-009151

IN THE MATTER OF

ROYAL & SUN ALLIANCE INSURANCE PLC

- and -

IN THE MATTER OF

THE MARINE INSURANCE COMPANY LIMITED

- and -

IN THE MATTER OF

MERCANTILE INDEMNITY COMPANY LIMITED

- and -

IN THE MATTER OF

THE FINANCIAL SERVICES AND MARKETS ACT 2000

Notice is hereby given that on 17 January 2019 an Application was made under section 107 of the Financial Services and Markets Act 2000 (the "Act") in the High Court of Justice of England and Wales by the above-named Royal & Sun Alliance Insurance plc ("RSAI") and The Marine Insurance Company Limited ("MIC") (together the "Transferors") and Mercantile Indemnity Company Limited (the "Transferee") for Orders:

(1) Under section 111 of the Act sanctioning a scheme (the "Scheme") for:

- the transfer to the Transferee of certain direct and reinsurance business of the Transferors, namely certain UK-based commercial general insurance business; and
- the making of ancillary provisions under section 112 of the Act for implementing the Scheme.

The following documents are available and may be obtained by any person free of charge by downloading them from the website ([www.rsagroup.com/RSATransfers](http://www.rsagroup.com/RSATransfers)) or by making a request by email to [RSATransfers@equiniti.com](mailto:RSATransfers@equiniti.com), or in writing at RSA Insurance Group, 20 Fenchurch Street, London EC3M 3AU (Attention: Jonathan Colson) or by calling the Scheme helpline on +44 121 415 0966 at any time until the making of an order sanctioning the Scheme:

- a copy of the Scheme document;
- a copy of the report on the terms of the Scheme prepared by an independent expert in accordance with Section 109 of the Act;
- a communications pack, which includes a statement setting out the terms of the Scheme and a summary of the independent expert's report.

Anyone who has any questions regarding the proposed Scheme or would like further information should contact us using the above details.

The specific nature of the transferred business differs between RSAI and MIC, but in both cases constitutes part of their respective commercial general insurance businesses.

It is intended that the Scheme will transfer from RSAI to the Transferee certain commercial general insurance policies that include liability cover and that were either: (i) written by or on behalf of RSAI prior to 2006, or (ii) written by or on behalf of another insurer prior to 2006 and transferred to RSAI prior to 7 February 2017. Policies that relate exclusively to marine or motor liabilities, or were underwritten by a branch or agency incorporated or domiciled outside the UK are excluded from the Scheme, as are certain other specifically excluded policies.

It is intended that the Scheme will transfer from MIC to the Transferee the following categories of commercial general insurance policies that were either written: (i) by or on behalf of MIC, or (ii) written by or on behalf of another insurer and transferred to MIC prior to 7 February 2017:

- all marine energy policies written prior to 2004;
- all other marine policies written prior to 1997; and
- all aviation policies written prior to 2009.

The Scheme will also transfer various business contracts from each of RSAI and MIC to the Transferee, including all or part of certain outwards reinsurance contracts. The business of the Transferors, comprising policies and business contracts, and associated assets and liabilities, that is to be transferred to the Transferee by the Scheme forms the "Transferred Business".

The Scheme will transfer the Transferors' rights and obligations under the commercial general insurance policies forming part of the Transferred Business (referred to as the "Transferred Policies") without alteration to Mercantile. The holders of the Transferred Policies (and any persons entitled to beneficial rights under such Transferred Policies) will, with effect from 00.01 BST on 1 July 2019 (or at such other later time and/or such other date as the Transferors and Transferee may agree) (the "Effective Date"), become entitled, to the exclusion of any rights which they may have had against the Transferors under a Transferred Policy, to the same rights against the Transferee. Similarly, the holders of the Transferred Policies shall be liable to account to the Transferee for any further or additional premiums or other sums attributable or referable thereto, as and when they become due and payable. Responsibility for handling all claims under the Transferred Policies, which are currently being handled by, or on behalf of, the Transferors will transfer to the Transferee. The Transferee shall be entitled to any and all defences, claims, counterclaims and rights of set-off under the Transferred Policies, which would have been available to the Transferors prior to the Effective Date.

Subject to certain exclusions, at and with effect from the Effective Date, all assets and liabilities that are comprised in, arising from or in connection with the Transferred Business shall transfer to the Transferee. Various business contracts will also transfer so that they will become agreements between the Transferee and the relevant third party. The Scheme will be valid and binding on counterparties to such contracts notwithstanding any restriction on transfer or assignment contained in any such contract.

The Application is due to be heard at the High Court of Justice of England and Wales (High Court), 7 Rolls Buildings, Fetter Lane, London, EC4A 1NL on 13 June 2019. Any person who considers that he or she may be adversely affected by the Scheme has the right to make representations and/or to appear at the Court hearing. It is requested that any person intending to make representations (either in writing or by telephone) and/or appear at the hearing (either in person or using legal representation), please contact RSA on +44 121 415 0966 or in writing at the email address below as soon as possible and before 13 June 2019 to set out the nature of their representations. This will enable the Transferors and the Transferee to provide notification of any changes to the hearing and, where possible, to address any concerns raised in advance of the hearing. If the requested notice is not given, attendance at the Court hearing, either in person or using legal representation, will still be permitted.

Jonathan Colson  
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## NEW AXMINSTER CRAFT MACHINES

Axminster Tools & Machinery have recently launched their new range of Craft machines after months of research and development.

The new range replaces Axminster's Hobby Series, which the company felt was being copied by retailers who are not tool and machinery specialists. Therefore, the range is aimed at the discerning home user and those dedicated, creative souls who literally spend hours trying to perfect their craft. Crucially these machines are affordable with enhanced features not normally found on machines at this level.

Within the range, you will find new lathes, bandsaws, scrollsaws, a table saw, sanders and grinders as well as some of the existing Hobby machines, which have transitioned into the Craft range.

Examples within the Craft range include four new bandsaws which are designed to give you more control, accuracy and capacity and have features not found on this level of machinery before, giving you the ability to craft your project the way you want to. These bandsaws are ultra smooth and rock solid with wide trunnions, a ground cast-iron table, extraction ports and new mitre fence. Furthermore, good blade tension ensures smooth cuts.

The AC355WL lathe is regarded as the finest addition to the woodturning range for some time. As with all the lathes in the Craft range, this one is precision ground and has a powerful motor, variable speed and three belt settings with indexing. To add to that, the RPM counter is a useful feature, especially for beginners. As an added incentive for anyone contemplating taking up the hobby of woodturning, Axminster is offering a free three-hour introduction to the craft at any of its stores when buying a new Craft lathe. Alternatively, purchasers can upgrade to a 25% discount off a two-day course at either Axminster or Sittingbourne Skill Centre. So confident are Axminster about the build quality and manufacture of these machines, that they all come with a three-year warranty covering parts and labour.

For more information about the products in the Axminster Craft range, visit [www.axminster.co.uk/axminster-craft](http://www.axminster.co.uk/axminster-craft) or go to one of the eight Axminster stores. There are also videos on the website taking you through some of the new machines and their unique features.



## MANOR HOUSE RETURNED TO GLORY WITH TEKNOSPRO COATINGS

TeknosPro's coatings were recently used to transform the front door of an old manor house so that the beautiful building now has the entrance it deserves. The 140-year-old house is located in an area of outstanding natural beauty in Ranmore Common, Surrey Hills. Part of the door's exterior had to be replaced before it could be repainted as the wood was rotten. The joints of the front door were then filled with high quality resin to prevent cracking from movement so the area was fully prepared prior to coating.

Two coats of Teknos Antistain Aqua primer were applied by an airless spray system to minimise yellowing of the door, followed by two coats of Futura Aqua 40. The panelling on the frame surrounding the door featured beading, which due to its small scale, had to be painted by hand to ensure the coatings were able to get into the grooves.

The varying methods of application reflect the versatility of TeknosPro paints. The coatings are also designed to withstand the elements, and so will keep the front door of the manor house looking beautiful for years to come.

The project was undertaken by Nick Sammut, a professional painter and decorator from Surrey-based Rushmoor Painting & Decorating, which was formed in 2016. The team of professional painters showcases the best in artisan painting producing high quality finishes on projects of all sizes, as seen across their active social media channels. Using the right tools for the job and paying attention to detail, the company prides itself on great quality work, which is enhanced by the excellent quality of paints portfolios. Nick comments: "When we quote our customers for the job, we include the paints that we think will be best for the project, and the majority of the time, we quote for TeknosPro coatings."

For more on TeknosPro, visit [www.teknos.com/en-GB/professionals](http://www.teknos.com/en-GB/professionals).



## TRANSFORMING WESTONBIRT WOODWORKS AT THE NATIONAL ARBORETUM



Westonbirt Arboretum has long been a unique place where visitors from all over the world can discover more about the beauty and science of trees – from seed, to sapling, to soaring giant.

Following a successful fundraising appeal by the Friends of Westonbirt Arboretum, Westonbirt Arboretum is pleased to announce an exciting new project, which will enable visitors to discover what happens once the tree has come to the end of its life. Local heritage craftspeople will show how the timber is put to good use, from making unique pieces of furniture to stunning household goods.

Over the next few months, the Arboretum will be restoring an old cattle barn and yard, transforming it into a centre for local craftspeople to showcase their amazing heritage skills. Visitors will be able to watch exciting demonstrations and take part in bespoke courses and workshops. Expert chairmaker, Paul Hayden, who has run a successful programme of chairmaking courses at the woodworks for 18 years, will be setting up an exciting programme of events and activities.

Chloe Gilbert, Project Officer at Westonbirt Arboretum, who is managing the project, said: "We are delighted to be kicking off this project, which will help us showcase how we can use sustainably-sourced British timber. While the arboretum is first and foremost an internationally important tree collection, we do from time to time have to extract trees due to disease, storm damage or part of our sustainable programme of traditional woodland management. The new Westonbirt Woodworks will provide facilities for these small quantities of timber to be put to good use. When it re-opens to the public, talented craftsmen and women will be able to showcase their incredible skills to visitors, who will learn directly from leading experts. In turn, this helps to keep these crafts alive and provides a new experience for the public who visit us."

The new Woodworks will officially open this year, and there will be plenty

## SATURN AND VOYAGER TO ARRIVE IN UK & IRELAND

Leading tool innovator, NOVA, is set to introduce two new exciting products to the UK and Irish market following a deal with UK-based Craft Supplies to distribute its products here.

The partnership is sure to whet the appetites of woodturners with the delivery of the highly acclaimed NOVA Saturn DVR lathe – one of the most versatile lathes on the market.



Another fantastic addition to the workshop will be the introduction of the NOVA Voyager DVR Drill Press. The Voyager is the top selling drill press in its class in North America and comes with a multitude of incredible features. With no belts to cause vibration the Voyager has earned a reputation for faster and more efficient drilling.

Craft Supplies expects both products will be available to NOVA stockists in May when the first shipment is expected to arrive. Woodworkers can get a sneak preview and see the Saturn and Voyager at The Midlands Woodworking Show, which will take place at Newark Showground, Nottingham, from 22–23 March. A NOVA representative will be on hand to help introduce these new products to the UK market.



Speaking of his excitement at the prospect of the partnership, David Green, Manager of Craft Supplies, said: "We are very excited by the opportunity of working with NOVA, a company with vast knowledge in our industry and an enviable range of first class products."

"I am confident the combined knowledge and experience of our two companies will provide woodworkers across the UK and Ireland with a first class product range and outstanding customer service."

Craft supplies is the wholesale division of retailer Craft SuppliesTurners Retreat and a subsidiary company of Robert Sorby. NOVA is a Teknatool brand with more than 30 years' experience manufacturing ground-breaking tools for the woodworking industry. For more information, see [www.turners-retreat.co.uk](http://www.turners-retreat.co.uk) and [www.teknatool.com](http://www.teknatool.com).

to see onsite from the fantastic vantage point of the Stihl Treetop Walkway. The first building to be constructed will be a saw mill shelter, made from Westonbirt's own oak, and will house a new saw mill, after which the team will then set about constructing a drying store, which will house planked timber. These two new timber-framed buildings will be created using traditional timber framing techniques by Perchard Structural Timberworks.



The Westonbirt Project is funded by Friends of Westonbirt Arboretum, Bristol University – Sarah Baille, The Worshipful Company of Joiners and Ceilers and Charitable Trust, The Summerfield Trust, CHK Trust, and Swire Charitable Trust.

To find out more, see [www.westonbirtproject.co.uk](http://www.westonbirtproject.co.uk).

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## KREG ACCU-CUT XL TRACK GUIDED CUTTING SYSTEM & EXPANSION PACK

**MANUFACTURER:** Kreg

**D&M GUIDE PRICE:** KMA2750 – £99.95; KMA3700 – £174.95  
(prices inc VAT)

Kreg have added two new products to their existing Accu-Cut™ track guided cutting system with the Accu-Cut™XL and an Expansion Pack for the original Accu-Cut™ set.

The Accu-Cut™ transforms your circular saw into a high-performance track-guided cutting tool for breaking down full sheets of plywood.

Set your projects up for success by making straight, accurate, splinter-free cuts with the **Accu-Cut™ XL Circular Saw Track Guide (KMA3700)**. It rips, cross-cuts, and makes angled cuts up to 100in long in plywood, MDF, and other large panels with accuracy and control.

The Accu-Cut™ XL guides your circular saw along an extended-length aluminium track that holds the saw steady and keeps your cuts straight. The track guide is designed for simplicity: just mount your saw to the Universal Sled, align the Accu-Cut XL track to the cut line, and make the high-quality cuts you need. The anti-chip guide strips prevent splintering and tear-out through the entire length of your cut. The same strips also feature an anti-slip surface that holds the track in place without clamps.

If you have the original Accu-Cut™ you can double the cutting capacity with the **Accu-Cut Expansion Pack (KMA2750)**. It connects easily to your Accu-Cut to deliver the same straight, accurate, splinter-free performance on cuts up to 100in long.



## DEWALT DCW210N-XJ 18V XR BRUSHLESS 125MM RANDOM ORBITAL SANDER – BARE UNIT

**MANUFACTURER:** DeWalt

**D&M GUIDE PRICE:** £ 139.95 (inc VAT)

Expected in April from DeWalt, the new 18V cordless random orbital sander provides you with the power and runtime needed to get the job done. A variable-speed dial provides ultimate speed control from 8,000-12,000opm for a variety of projects. The one-handed locking dust bag attaches securely to the sander to aid in dust collection or the user can attach the sander directly to an extractor, such as the new DCV586M. A rubber overmould grip provides comfortable sanding, and there is a replacement eight-hole hook-and-loop sanding pad for quick, easy, paper changing. Battery and charger sold separately.



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# AXMINSTER ULTIMATE EDGE DELUXE VARIABLE SPEED SHARPENING SYSTEM

The Axminster Trade Ultimate Edge offers a new way of sharpening, finishing and polishing, as Phil Davy discovers here

There are probably as many methods of grinding and sharpening hand tools as there are ways of making a mortise & tenon joint. Whichever you prefer, it's necessary to remove steel efficiently and without overheating the edge while you're at it. Axminster's new Ultimate Edge system differs from, say, a Tormek in that grinding is done on an abrasive belt, rather than a revolving wetstone. This means there's arguably less mess and you can select a grade that best suits a particular tool. With a coarser grit it's a fast, effective grinder, while moving to finer grades it becomes a finisher,

creating polished edges to your tools if you want them. For woodturning tools especially this is a bonus.

## Digital display

The basic Ultimate Edge unit has a single fixed belt speed of 496m/m (metres per minute), though here we're testing the pricier variable-speed model. With a range from 200 to 600m/m, its brush motor is rated at 560W. The single speed machine is £50 cheaper and benefits from a 375W induction motor.

This is a heavy-duty machine, with a chassis built from 5mm plate steel. It weighs around 17.5kg and has a footprint of 410 × 260mm, though doesn't need bolting down to a bench. Some assembly is needed, although this only takes a few minutes. This involves bolting the switchgear to the chassis and adding four rubber feet. An optional graphite pad is provided, which



An optional graphite pad is provided, which can be stuck under the belt to prevent wear



The control panel features an NVR switch on the front, with a rotary speed knob below



There's also an on/off isolator switch around the back, a belt and braces safety feature



The motor drives an aluminium roller at the bottom with a similar one above



You unscrew the side cover plate when it's time to change the abrasive



To release tension, flip the lever through 180°, depress and let the spring-loaded pin lock in...



... which enables you to slide the belt off

can be stuck under the belt to prevent wear. Then you're ready to fire it up the machine.

The control panel features an NVR switch on the front, with a rotary speed knob below. A digital display indicates speed selected on top, along with a forward/reverse toggle switch. There's also an on/off isolator switch around the back, a belt and braces safety feature.

At the opposite end is the sturdy steel linisher assembly. The motor drives an aluminium roller at the bottom with a similar one above, around which the belt rotates. You unscrew the side cover plate when it's time to change the abrasive. To release tension, flip the lever through 180°, depress and let the spring-loaded pin lock in. This enables you to slide the belt off. With a new belt fitted the locking pin is withdrawn, providing automatic re-tension. Tracking is via a tweak of the hefty knurled knob, effective at getting the belt running centrally.

Once the belt is tracked, you're ready for action. A basic work table is included, which is bolted to the side of the linisher and offers little in the way of adjustment. It's removed when mounting the optional jigs, so is likely to be redundant.

Belt size is 785 x 50mm, with aluminium oxide replacements costing from around £3.20 upwards, depending on grade. A 25mm dust port



Maximum blade width possible on the Honing Guide Assembly is 66mm

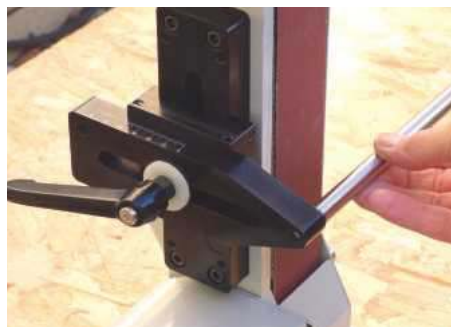


Tracking is via a tweak of the hefty knurled knob, effective at getting the belt running centrally

is provided at the rear, though ideally you need to fit a flame retardant hose as there'll be plenty of sparks if running the machine at a faster speed. This costs another £24.96.

### Extra jigs

To get the most from the Ultimate Edge you'll need to buy Axminster's Compound Jig at least, costing almost £50. Machined from anodised aluminium, it's adjustable horizontally and vertically in relation to the belt, via a simple locking lever. It enables you to mount various tables and guides which slide along the rigid round steel bar. These include the various Tormek jigs for



To get the most from the Ultimate Edge you'll need to buy Axminster's Compound Jig at least



For skew chisels or carving tools you may find the Universal Sharpening Table useful

woodturning gouges and carving tools. Some of the graduations can be confusing, though.

For chisels and plane irons the Honing Guide Assembly is recommended (£23.95). Similar to an oversized traditional Eclipse jig, this features dovetailed jaws for gripping the tool firmly, while one face can be reversed for tapered tools. Maximum blade width possible is 66mm. For most tools this jig works well enough, though I had difficulty with a couple of short, stubby Japanese chisels.

For skew chisels or carving tools you may find the Universal Sharpening Table useful (£24.96). With a sliding table and protractor scale you can



For chisels and plane irons the Honing Guide Assembly is recommended



Once the arbor is in place, it is then a quick fit on to a mounting plate screwed to the lower roller

use this for freehand grinding, though I didn't find it ideal for chisels or plane blades.

Unlike some grinders or finishers the Ultimate Edge means you can add polishing mops easily. A Twist n Fix Arbor is first screwed to the appropriate mop, felt or rubberised wheel. This is then a quick fit on to a mounting plate screwed to the lower roller. Extra arbors are available, enabling you to readily switch between coarse and finer polishing systems, depending on the paste used. This arbor system costs £24.96, with individual arbors priced at £30 for three.

#### In use

Although only one belt is supplied, I found its 240 grit a reasonable compromise. It restores an edge quickly, though will clog eventually. Unless using the slowest speed you'll need to quench the tool



For another £25 you have an excellent buffing and polishing machine

in water frequently to prevent overheating. It's useful to have forward and reverse options, the reverse belt possibly a tad safer if you're not used to this sharpening method.

For polishing you can fit a leather honing belt. Unlike a vertical wetstone, which results in a hollow edge, with the Ultimate Edge machine you end up with a very slightly convex, rather than dead flat, ground edge. Not a problem, though.

#### Conclusion

This is an expensive sharpening system, though the single-speed version is comparable with the cheapest Tormek T4 grinder (about £330 without any jigs). And you can easily spend another £100 before you've bought any extra belts. That said, for another £25 you have an excellent buffing and polishing machine. If you enjoy small-scale



Precise angles are virtually guaranteed (with the Honing Guide), while grub screws enable the Compound Jig to be tweaked

engineering projects there's bound to be plenty more potential here.

Many woodworkers would consider this a luxury machine, though if you want the finest possible primary bevels on your edge tools it's probably worth saving your pennies. ✂

#### SPECIFICATION

**Abrasive belt size:** 50 × 785mm

**Belt speed:** 200-600m/min

**Motor power:** 560W

**Weight:** 17.5kg

**Voltage:** 230V

**Typical price:** £379.96

**Web:** www.axminster.co.uk

#### THE VERDICT

##### PROS

- Variable-speed; forward and reverse belt direction; vertical or horizontal finishing; accepts polishing wheels; variety of abrasives possible

##### CONS

- Extra jigs almost essential; only one belt supplied

**RATING:** 4.5 out of 5

# MAKITA DBO180Z 18V LI-ION LXT CORDLESS RANDOM ORBITAL SANDER

A dream to use, Phil Davy is impressed with this random orbital sander's excellent ergonomics and fantastic, swirl-free finish

**A**lthough Makita's DBO180 random orbit sander has been in production for a couple of years, I only came across the tool a few months ago. Sold bare, you'll need to add a suitable Makita 18V battery and charger if you don't already own these. A 4.0Ah Li-ion power pack and charger will



The battery simply slides into the rear of the tool, giving a total weight of 1.8kg

set you back around £85. Although no storage is provided (just a cardboard box), various options offer a stacking plastic Makpac case and batteries if you need them.

A disc diameter of 125mm means the tool is a reasonable size for most sanding tasks, without being too cumbersome. Even with a battery fitted



Unlike most sanders, the Makita incorporates a pair of push buttons to fire up or stop the motor

it's quite compact, so working tight into a corner is convenient enough. The battery simply slides into the rear of the tool, giving a total weight of 1.8kg. The top of the body is shrouded in rubber, making the palm grip comfortable and helping reduce vibration. A low centre of gravity ensures the sander is not top heavy.

#### Speed selector

Unlike most sanders, the Makita incorporates a pair of push buttons to fire up or stop the motor. These are encased in clear plastic, so dust cannot penetrate. Pressing the first button (numbered 1 to 3) once activates the tool at its maximum speed of 11,000rpm (orbits per minute). Press again and the speed decreases to 9,500rpm, while a third touch drops this down to 7,000rpm. To return to top speed you continue pressing the same button, while to shut down the sander you depress the adjacent button. Easy peasy, with no thumbwheel selector to fiddle with. Orbit diameter is 2.8mm, fairly standard for a finishing sander.

A small fabric dustbag is provided, which fits on to the rear port. You can alter the position of this by removing a screw and rotating the skirt surrounding the pad. Holes around the perimeter



A small fabric dustbag is provided, which fits on to the rear port



You can alter the position of this by removing a screw and rotating the skirt surrounding the pad

enable dust to be sucked up into the bag or extractor hose. To empty the bag contents you untwist a rigid plastic cover, which seems to work well enough. Port diameter is only 22mm, though I managed to hook up a flexible adaptor easily enough to use the cordless Ryobi Project Vac alongside, rather than a mains-powered extractor. A paper filter bag and rigid dust box is available as an extra option. The circular pad has eight extraction holes and accepts hook-and-loop abrasives. Disappointingly, only one disc (120 grit)



Port diameter is only 22mm, though I managed to hook up a flexible adaptor...



The circular pad has eight extraction holes and accepts hook-and-loop abrasives



is supplied with the tool – a few more would have been welcome...

With optional foam, felt or wool pads you can use the Makita for wax polishing, so if your car's bodywork needs a little restoration work this could be a handy tool.

### In use

This sander is a dream to use. It's comfortable, reasonably quiet and more importantly, very efficient. You may not be able to tweak the speed as you can with a thumbwheel adjuster, but I'd guess most of us leave a sander set at full speed most of the time anyway. For veneered surfaces it's useful to drop the speed or when using finer abrasives, but you still have that option with this tool. Using the Makita on oak kitchen worktops recently the finish from 120 grit abrasive was so good it wasn't necessary to use a finer disc. I managed to get 22 minutes of sanding from a fully charged 4.0Ah battery.



... easily enough to use the cordless Ryobi Project Vac alongside, rather than a mains-powered extractor



Using the Makita on oak kitchen worktops recently the finish from 120 grit abrasive was so good it wasn't necessary to use a finer disc



To empty the bag contents you untwist a rigid plastic cover, which seems to work well enough

### Conclusion

Compared with a traditional orbital sander, the action of a random orbit tool means a timber surface should be free of swirls, theoretically. Having tested a good number of RO sanders over the years, I've found you still tend to end up with slight swirls, which then need further sanding out by hand. Fortunately, the finish produced by this Makita is about the best I've come across and should not need further work. So, an excellent power tool that offers the convenience of cable-free sanding. ✂

### SPECIFICATION

No load speed: 14,000/19,000/22,000spm  
 Orbit speed: 7,000/9,500/11,000opm  
 Power: 18V  
 Weight: 1.8kg  
 Sanding time: 22 minutes (4.0Ah)  
 Sanding disc diameter: 125mm  
 Pad size: 123mm  
 Orbit diameter: 2.8mm

Typical price: £133 (bare)  
 Web: [www.makita.co.uk](http://www.makita.co.uk)

### THE VERDICT

#### PROS

- Excellent ergonomics; fantastic, swirl-free finish; three fixed speeds easy to select

#### CONS

- Battery and charger extra; only one disc included

RATING: 5 out of 5

Multi Volt series

# AC power. DC freedom.

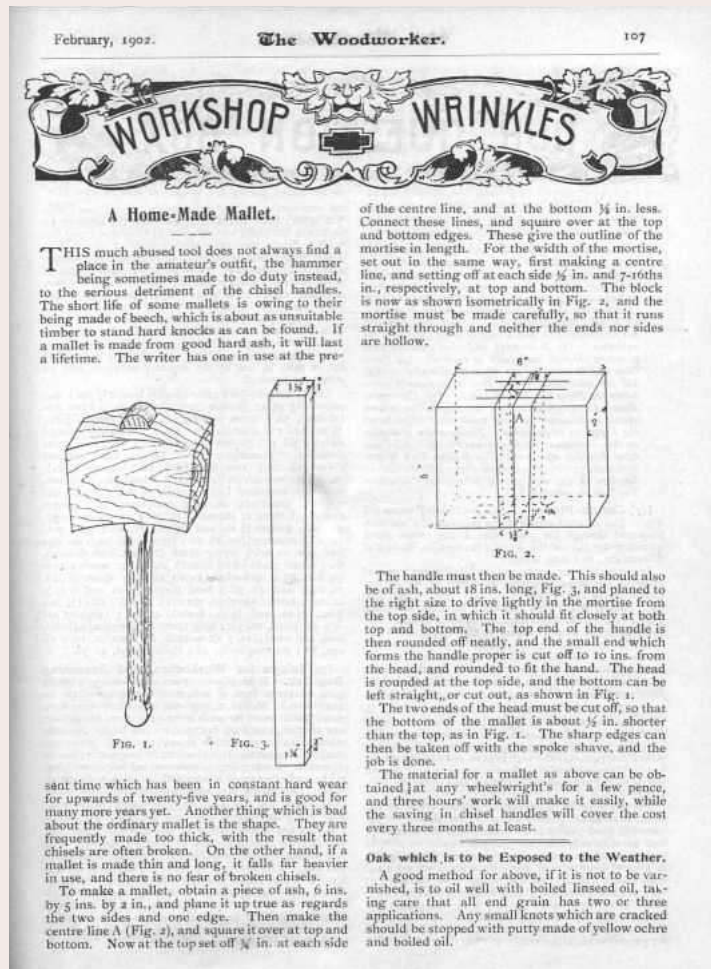
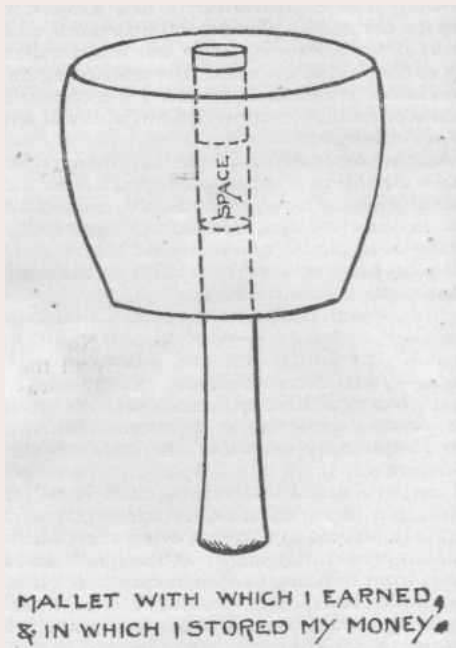
A new generation battery system with almost the same size and weight as our 18V battery - but it's the technology inside that gives you the great improvements you need. Doubling the voltage provides optimal power without the hassle of cords. The MULTI VOLT battery is compatible with almost every cordless HiKOKI power tool, which means you can easily switch from one power tool to another, regardless of the voltage. So you're just a simple click away from maximum performance.

The all new C3610DRA 36V cordless mitre saw is coming to a HiKOKI dealer near you very soon. The saw features a powerful brushless motor, and a compact slide system eliminates the need for rear clearance.



# “All woodcarvers entirely eschew square mallets”

Robin Gates turns to *The Woodworker's* first article on making a mallet published in February 1902 and the withering riposte it provoked from woodcarver Harry Hems



The mallet has been a recurring theme throughout the history of *The Woodworker*, being the subject of an article as early as issue 5, February 1902, in the column then called 'Workshop Wrinkles'. With clear technical drawings and succinct instructions aimed squarely at the reader only wanting to know 'what' and 'how', the author describes the making of a typical square-headed mallet.

I tuned into the piece the moment the author recommended 'good hard ash', as I invariably turn to an elderly ash mallet when a heavy blow is required. Then, mindful of the many commercially-made mallets that are beech, I couldn't resist a smile when beech was condemned as 'about as unsuitable timber to stand hard knocks as can be found'. The instructions seem every word as reliable now as then, until the author's assurance that the necessary timber 'can be obtained at any wheelwright's for a few pence'. Back then, when the High Street resounded to the clatter and whinnying of horse-drawn carriages, no doubt a wheelwright's shop stood just around the corner, but in 2019 all that remains of that establishment is gathering dust in the town museum.

A far less nostalgic and more critical eye than mine was scrutinising this piece on the day it

was published, and we might have suspected it would had we noted the 'carved oak memorial screen... recently erected at Sturminster Newton Church' accorded a full-page photograph on page 97 of that same magazine. It was the latest work of Messrs. Harry Hems & Sons of Exeter, commended especially for everything having been 'got out of the solid' (linen panels, tracery, raised lettering) and 'with no "planking on" – a practice so conspicuous in some work'. For anyone in that neck of the woods today, the screen still stands in the north transept of St Mary's, and is definitely worth a look.

## Hems' letter

Turning now to 'Our Readers' Views' of the following month, we find the aforesaid Harry Hems referencing the article 'A Home-Made Mallet' and requiring more space than the original author to tell us what's wrong with it. Hems was an ecclesiastical sculptor and woodcarver of the first water, with works adorning churches and cathedrals around the world, and by all accounts not a man afraid to speak his mind.

Hems began with a resounding put-down of the square mallet, which, he said, must be intended for 'amateurs' and 'would-be carpenters' because no other 'would think of numbering

of the centre line, and at the bottom  $\frac{3}{4}$  in. less. Connect these lines, and square over at the top and bottom edges. These give the outline of the mortise in length. For the width of the mortise, set out in the same way, first making a centre line, and setting off at each side  $\frac{1}{2}$  in. and  $\frac{7}{16}$ ths in., respectively, at top and bottom. The block is now as shown isometrically in Fig. 2, and the mortise must be made carefully, so that it runs straight through and neither the ends nor sides are hollow.

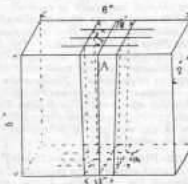


Fig. 2.

The handle must then be made. This should also be of ash, about 18 ins. long, Fig. 3, and planed to the right size to drive lightly in the mortise from the top side, in which it should fit closely at both top and bottom. The top end of the handle is then rounded off neatly, and the small end which forms the handle proper is cut off to 10 ins. from the head, and rounded to fit the hand. The head is rounded at the top side, and the bottom can be left straight, or cut out, as shown in Fig. 1.

The two ends of the head must be cut off, so that the bottom of the mallet is about  $\frac{1}{2}$  in. shorter than the top, as in Fig. 1. The sharp edges can then be taken off with the spoke shave, and the job is done.

The material for a mallet as above can be obtained at any wheelwright's for a few pence, and three hours' work will make it easily, while the saving in chisel handles will cover the cost every three months at least.

## Oak which is to be Exposed to the Weather.

A good method for above, if it is not to be varnished, is to oil well with boiled linseed oil, taking care that all end grain has two or three applications. Any small knots which are cracked should be stopped with putty made of yellow ochre and boiled oil.

amongst their kit an old-fashioned carpenter's mallet.' He continued, 'Now-a-days intelligent men, who are advanced craftsmen in the art of high-class joinery, and all wood-carvers, entirely eschew square mallets'. Anyone wielding such a mallet today, reading that and feeling wounded, wouldn't be the first to be taking umbrage at Hems' remarks. Arguments with his own employees occasionally escalated to full-blown fisticuffs.

That said, Hems took practical steps to ease the lives of those less fortunate than himself through supporting local hospitals and holding charity lunches in his workshop, and he clearly had a sense of humour. Finding himself in dispute with revenue officials, he organised an auction to clear the debt and included among the lots some old tombstones catalogued as 'suitable for the graves of Income Tax Commissioners'.

Returning to Hems' letter, and mallets, after asserting the superiority of the turned mallet, for which apple timber is 'by far the best for the purpose', he described the tool he carried as a journeyman travelling to Italy in 1864. Fearing he might 'fall among thieves', Hems adapted the handle with a space 'to keep snugly what little money I possessed safe and sound'. ✂

# TRITON TTS1400KIT700 1,400W TRACK SAW KIT

Jonathan Salisbury finds this track saw kit from Triton to deliver impressive results, although the dust extraction could be better

Cutting 8x4 sheets of plywood on a table saw is not easy without help. One alternative is to keep the board still and use a hand-held circular saw. But the noise! The dust! The not-quite-square results! Any twist of the blade results in kickback and if cut-depth is fixed there can be a lot of unnecessary blade poking out underneath. Keeping a fence running along the outside edge to maintain a parallel cut needs a straight edge to begin with and the width of cut is restricted to that fence. What about a track saw?

Track saw systems provide a compact and significantly cheaper alternative to a table saw. It is possible to mix-and-match tracks and saws, but purchasing both from one manufacturer ensures 100% compatibility. The Triton TTS1400KIT700 1,400W saw, two 700mm

tracks, two clamps and a carry bag for the saw are often sold as a package. All components can be bought separately and, special offers aside, it is not usually much cheaper buying them all at the same time from one retailer.

## Features

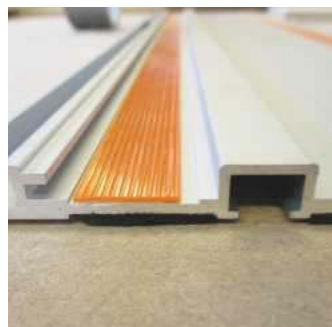
Once the saw is unpacked, the only assembly is to add the depth-stop lock. On the base, the variety of black knobs includes one for the anti-kickback cam. Although twisting the blade in the kerf is unlikely when using a track, it is still possible to plunge the blade into the material too quickly or to begin a cut before the blade is rotating at full speed. Turning the cam to '0' allows the saw base to drop into the track and it springs back to '1' when released, setting the cam to prevent backwards travel. It works exceptionally well and as this routine is repeated almost every time the saw is used, it is easy to continually check that it is working. When being prepared to cut bevels, the saw soon starts to tip over when tilted a few degrees beyond 0°; the track lock knob rotates a plate into a track groove to keep the saw horizontal. Other knobs are for attaching fences, making fine adjustments and taking up

slack that develops (there is none so far).

The extruded aluminium alloy tracks have a variety of channels: for saw travel; for 'T' bars to join tracks together for longer runs; to house the clamps, which attach the track to the board; for that track lock feature. The track top has low-friction tape for smooth saw travel and the underside has non-slip tape to help keep it in place without damaging the surface. For a clean finish, the saw must travel along the track both before and after the cut is made, so there needs to be about half a saw-length overlap; any number of track pieces can be joined together to ensure this (there is also a 1,500mm track to reduce the number of joints on long runs). Before it is used, or during its first use, the edge of the black kerf tape sticking out from under the track is removed by the saw and is supposed to indicate where the saw will travel. I found that it becomes too ragged to be used for accurate alignment and it is much easier to place the saw on the track and use the indicators on the base. It is very easy to



The Triton track saw, set up and ready to go



Detail of extruded track slots and low-friction tape for ease of saw travel



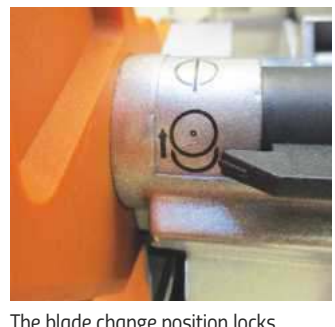
Speed control dial is easy to access and alter, but not accidentally!



The plunge lock, on top of the handle, and trigger are easy to operate together



Anti-kickback knob turned to '0' for saw-to-track placement



The blade change position locks the plunge in the right place to undo the screw for blade removal



The bevel angle is easy to set...

cut straight lines at any angle. The clamps lock the track very securely onto the board.

Operation is mostly intuitive, but it is worth reading the instructions first. There are three settings: scribe restricts the plunge to 2.5mm for pre-cutting the surface to prevent tear-out; free plunge allows cuts down to the 54mm maximum (38mm on a bevel), also allowing several boards to be cut at once. With the blade change setting selected, the saw plunge locks when the screw appears in the centre of the guard window so you don't have to hold it in this position. To remove the blade, depress the spindle lock lever, undo the screw with the hex-key (housed in the handle), remove the flange and manoeuvre the blade out through the slot. It's that easy! Blades are standard 165 x 20mm bore, with a kerf width no less than 2.2mm and no greater than 3.5mm.

### In use

In free plunge, the depth is limited with the depth-stop gauge on the blade shroud. Measurements include the track thickness and although the gauge lines are quite bold, depth of cut was spot on when setting the stop to their right-hand edge. This sort of accuracy removes the need to have to remember how much and in which direction adjustments need to be made.

Using the saw is easy; the handles are well-placed and comfortable, plunge action is smooth and the saw glides along the track easily. Startup is soft and requires the plunge lock button to be pressed; like most lower-cost power tools, the motor is a bit noisy and you definitely need ear defenders. When the trigger is released, the saw blade stops in about three seconds. The quality of cut finish is superb; on a piece of laminated chipboard, the blade scored the melamine so thinly that it was still in place when the cut was over and only required folding

to leave a perfect edge. It is recommended that material is cut with the finished surface down; even when cutting through I found no chipping at all on the underside, and only a minimal amount on the top. A 45° bevel was also cut with the same impressive finish. The cable is long enough to cope with full boards, as long as it is plugged in close to the work. Efficient dust extraction and chip collection is always going to be problematic with this type of saw, though. There is a standard 35mm extraction port, and adaptor if required, but even with the vacuum extractor running on full steam there was a lot of fine dust and wood chips. The blade access window in the guard seems to let a lot of debris through, so keep those masks on and air filters running!

Maintenance is low: dust needs vacuuming during and after use and moving parts benefit from a light oil every now and then; check that the saw blade screw is tight (but don't overdo it) and that the teeth are in good condition. The motor is not brushless, but a spare set of brushes is supplied and they are very easy to replace. And the carry bag? It's strong and rugged and just about big enough to hold the saw!

### Conclusion

Everything about the Triton 1,400W track saw system was impressive, except dust extraction; I am struggling to think of anything that could realistically be bettered (apart from putting another extraction port on the hole in the guard!), especially if you consider that it is around half the price of other systems. It's a little noisy and heavier than other saws, but that doesn't affect how well it performs. A longer term test will determine how robust it is, and how often those brushes need replacing, but this is a product that has been carefully thought through, works extremely well, and is great value for money. ✂

### SPECIFICATION

**Bevel range:** 0-48°  
**Blade diameter:** 165mm  
**Blade type:** 60 TCT  
**Bore diameter:** 20mm  
**Electronic speed maintenance:** Yes  
**Material – primary construction:** Aluminium  
**No load speed:** 2,000-5,000rpm  
**Power:** 1,400W  
**Product length:** 340mm  
**Product width:** 340mm  
**Product height:** 250mm  
**Weight:** 5.4kg  
**Sound power LW:** 104.87 dB(A), KWA=3 dB(A)  
**Sound pressure LP:** 93.87dB(A), KpA=3 dB(A)  
**What's in the box:** 1 x 1,400W plunge track saw; 1 x carbon brush (pair); 1 x dust outlet adaptor

**Typical prices:** Saw, 2 x 700mm guide rails and 2 x clamps kit – £235; saw – £145; 2 x 700mm track pack – £50; 1,500mm track – £55; dust bag – £15; replacement blade – £20; carry bag for saw – £14; 2 x clamps – £30; replacement brushes – £7.50

**Web:** www.tritontools.com

### THE VERDICT

#### PROS

- Convenient way of cutting large boards without a table saw; easy and safe to use; accurate and high-quality finish

#### CONS

- A little noisy; setup is slower than using a table saw and needs to be done for every cut; creates and distributes a lot of dust

**RATING:** 4.5 out of 5



... as is the plunge depth. The gauges are very accurate



The spindle lock is conveniently placed



The saw creates, and distributes, a lot of dust and chips



The saw blade left a perfect edge on the melamine laminate



Saw locked to the track



Having to change the motor brushes is a nuisance, but it couldn't be much simpler or fast



The alignment guide – no need to guess where to position the saw for accurate cuts every time!

# Get on Track



MASTERS OF WOOD

**TTS** 1400

## 1400W PLUNGE TRACK SAW

The **TTS1400** Plunge Track Saw is a highly versatile, feature-packed tool with easy mode selection, fast set-up and advanced safety features.

When fitted to a track, the **TTS1400** delivers long, straight cuts, and the flat design of the blade housing means the saw will work right up to the edge of the workpiece – ideal for trimming doors and cutting hardwood flooring.



**3YR**  
GUARANTEE



Flat blade housing enables a closer cut.



Guide track allows precise straight & bevel cutting.

### Key Features

Powerful 1400W motor with variable speed, soft start, overload protection and constant speed electronics

Precise plunge saw for straight and bevel cutting

Scribe mode scores delicate surfaces before cutting to eliminate tear out

Close cutting only 15mm away from wall

Dual front and rear bevel quadrants for improved stability

### Accessories



**TTS** TP  
TRACK PACK &  
CONNECTORS



**TTS** SB  
PLUNGE  
TRACK SAW BAG



**TTS** TS  
T SQUARE



# THE JOY OF DOVETAILS PART 4

In the final part of this series, **Michael Forster** shows you how to cut some seriously impressive London and houndstooth dovetails

Over the past three issues, I've taken a pretty detailed look at the process for hand-cutting a dovetail. The London and houndstooth variants (**photo 1**) are really very similar in principle with just a few detail differences, which will be the focus of this article. Those fine pins, tapering to just the width of the necessary saw-cut, really do make an impression. Add the tiny intermediate pins of the houndstooth version and it can be really rather a show-stopper.

### Tool talk

Mostly, we'll be using the same kit as for the basic dovetail. People often think I use a special saw for these versions, but I promise I really do use the same one for all my dovetailing. What will definitely be needed is a very narrow

chisel for the pin sockets. For the London dovetail I generally use a 3mm one, and for the tiniest sockets on the houndstooth a 1.5mm – both



**1** The London dovetail (left and rear) and the houndstooth (front right) are particularly elegant and decorative variants on the basic dovetail joint

bevel-edged (**photo 2**) – and in fact the 1.5 is useful for the London dovetail and indeed for many other tasks where some tight corners need a bit of a clean.

Although it's not essential, at this stage you might like to think of investing in a second and maybe even a third cutting gauge – for reasons you'll see overleaf.



**2** A 3mm bevel-edged chisel is essential for the London dovetail. The 1.5mm will be helpful in that work, and essential for the houndstooth version



**3** This Swann Morton No.26 scalpel blade in its No.4 handle will make scribing the pins much easier

And finally, if you previously used a marking knife for scribing the pins, you'll almost certainly find it's too thick to go into the finer sockets and you'll need the scalpel I mentioned in article 1 – a Swann Morton No.26 blade in their No.4 steel handle (**photo 3**). This longer blade will be even more beneficial if you should start to use thicker timber – as I found when making the much larger wall clock version (**see main photo**).

### Let's get started

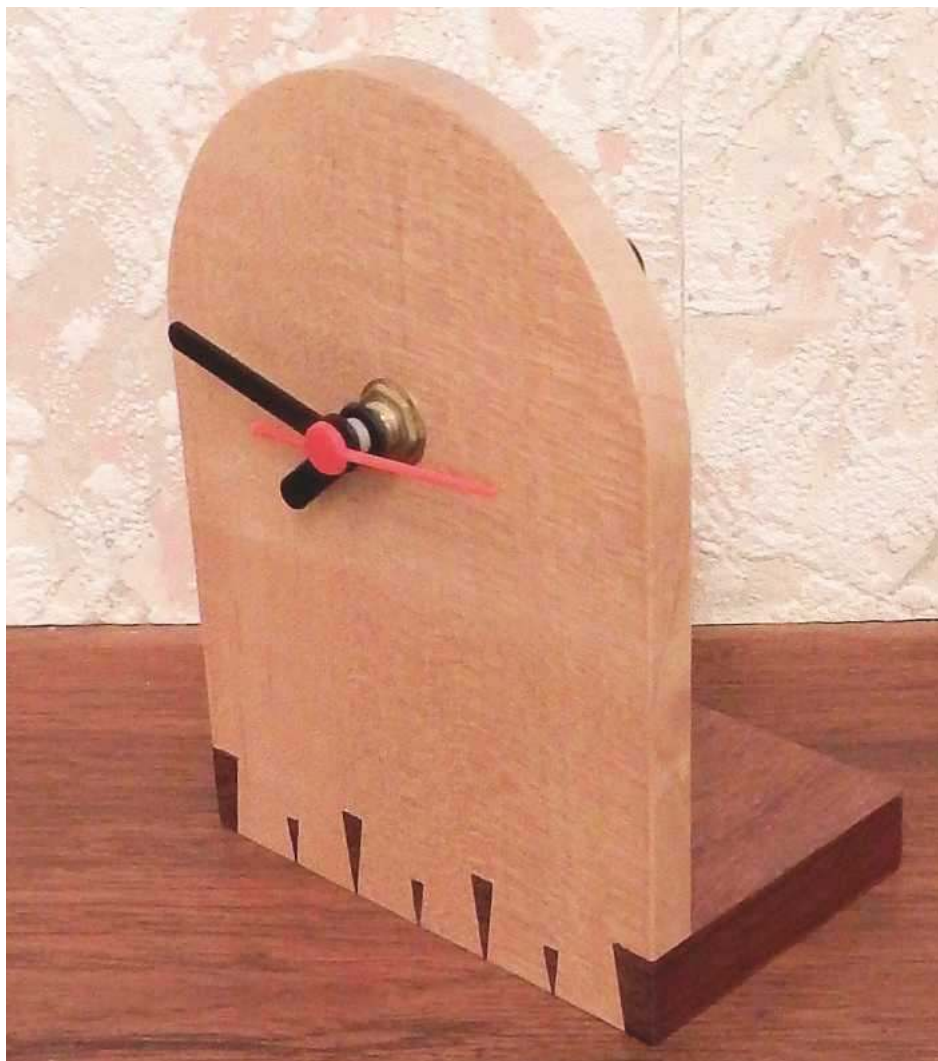
Essentially, the processes for London and houndstooth joints are in practical terms the same – the only difference is in the marking out and cutting of the extra pins in the houndstooth one. So I'm going to describe the setting out and cutting of the houndstooth version, and readers that want to start with the simpler London pattern can simply miss out the unnecessary stages. That will make the processes clear without needlessly padding out the article.



**5** I've marked the shoulders as usual, but I'm making a houndstooth joint, so I've added an additional shoulder line on the face of the tail board...



**6** ... and the end of the pin board



**4** The little clock's proportions are greatly improved by thinning down the face board and thickening the base

### Dimensions

The first difference I make when working on London or houndstooth dovetails is to increase the thickness of the pin board to 15mm or a tad more. As will already have been discovered, we need a little wiggle room for the chisel when chopping out sockets between tails. A thicker pin board means longer tails, which broadens the base of the sockets, the better to accommodate the chisels. If all that's as clear as mud, don't worry – it will all become sparkingly obvious when you actually do the work!

However, making the tail board the same thickness would look very chunky, so we'll be working with two different thicknesses

of timber. As we're doing so, why not thin the tail piece down to about 6mm? This will considerably lighten the appearance and give more pleasing proportions to the finished clock (**photo 4**).

### Marking up

So, we'll need to use different gauge settings for the shoulder lines on the tail and pin pieces. The choice then is whether to manage by re-setting the gauge between tail and pin board, or to invest in an extra gauge or two. Like most makers, I prefer to leave gauges set up until the job is complete – just in case something has been forgotten, or a line needs to be re-emphasised, or perhaps an error results in a new piece having



**7** To do this, I set a gauge to about half the thickness of the pin board...



**8** Set the dividers by trial and error until the three steps bring the point precisely onto the opposite half-pin mark



**9** Mark the tails as before – pencil in the divider mark, slide the template into contact and then mark the end and face lines

to be cut and marked up. I personally commend this approach, and so have several gauges in my kit – but it's an individual choice.

**Here we go, then**

Marking the shoulders is the same as for a standard dovetail. However, if like me you're opting to make the houndstooth version you'll need a second shoulder line on each board (**photos 5 & 6**) for the houndstooth pins. To achieve this, set another gauge to about half the thickness of the pin board (**photo 7**).

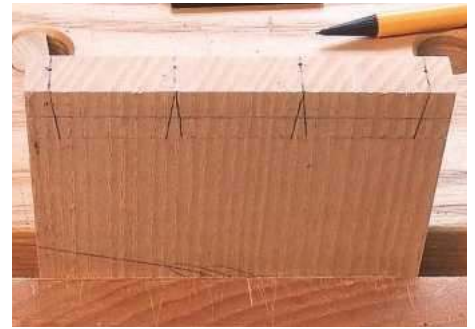
The houndstooth shoulder line is run across both sides of the tail board with the gauge against the end, and across the end-grain of the pin board with the gauge against the face (under) side of the board.

As before, I emphasise the gauge lines by running a pencil along them. Don't worry if the pencil strays out of the cut and makes a fuzzy line – just run an eraser over it and all the surface marks will disappear leaving a fine, clear line of graphite in the cut.

Now to mark up the tails – which is where the difference from a basic dovetail really shows.

Set the dividers by trial and error as for an ordinary dovetail, except that when stepped across they should land precisely on the opposite half-pin mark rather than just beyond it (**photo 8**). Then mark the tails in the same way as before using the same divider mark for both sides of each pin (**photo 9**).

We now have the tails marked out for a London dovetail (**photo 10**). To make a houndstooth, we need to divide these tails in half – so either reset



**10** The three main tails marked up. For the London joint, this completes the marking out



**11** If making a houndstooth joint, divide each tail into two

the dividers or use another pair (**photo 11**). We could, of course, have simply set the dividers in the first place for twice the number of tails, but I find this approach easier – the main tails are marked first, down to the furthest shoulder line, and then the intermediate ones added, just down to the first. This gives complete clarity as to where the various cuts end (**photo 12**).

In the marking, all the same processes apply as for a standard dovetail: feel the pencil tip into



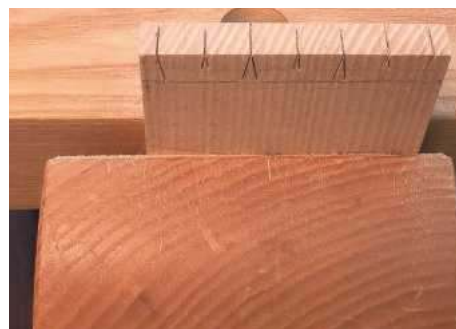
**12** The extra markings added for the houndstooth joint. Note that the lines stop precisely on the appropriate shoulder line, to assist accurate cutting



**13** Cut the tail cheeks in the usual way



**14** The first saw cut of each pair assists the placing of the saw for the second



**15** Cut all the cheeks, being careful to stop at the appropriate shoulder line



**16** Use the fret saw to remove most of the waste – this will provide some space for the waste coming off the chisel



**17** Chisel out the waste

the divider mark, slide the template up until it touches, and mark the end and face lines in one operation.

### Cut those tails

Cutting the tails is just like the earlier joint, except that it's paradoxically easier! That's because having cut one side of a pin socket (photo 13) the saw is then started off in the previous saw-kerf but sloped the other way (photo 14), which gives a tactile reference and steadies the saw for the second cut.

Cutting then proceeds using a dovetail saw



**20** Scribe the pins from the tails in the same way as an ordinary dovetail



**21** Cut the pins in exactly the same way as for a standard joint



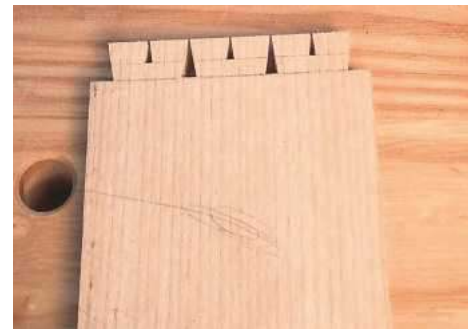
**18** You'll need the 1.5mm chisel for the houndstooth sockets

and fret saw, in a similar way to the earlier joint we made (photos 15-19), but you may find cleaning the corners of the sockets a bit on the fiddly side. Patience is the only answer here – but the difference that getting nice crisp corners makes is especially pronounced in this version of the joint. Sawing the shoulders proceeds exactly as for an ordinary dovetail.

### Scribing the pins

This is just the same as for the earlier joint, but as mentioned earlier, you'll really need a scalpel rather than a marking knife. Also, you'll be relying very much on 'feel' because there's no real visibility into the socket (photo 20).

Once scribed the pins can be cut (photo 21), and the sockets cleared, in essentially the same way as earlier. This will initially produce (in the case of a three-tail joint) six half-size sockets. What we need to do now is to reduce every other pin to a 'houndstooth'. And here's where a lot of care is needed to prevent it from all going horribly pear-shaped!



**19** All the tails are now cut

To begin with, I pencil mark the waste on the backs of the houndstooth pins – to help ensure I cut away the correct ones! I really want a clean shoulder here to give me a nice crisp inside corner to the joint. So firstly I'll place the pin board face-down on the bench and, with a sharp chisel, just re-emphasise and slightly deepen the gauge line by gently tapping it with a mallet (photo 22). Then, carefully pare away a slope down to the shoulder (photo 23). Repeat this a few times until there is a clearly-defined shoulder, and then it's time to slice away the back of the pin completely. Work slice by slice (photo 24), occasionally returning to chopping the shoulder. Gentle taps are the order of the day here – I have on one occasion chopped the pin off completely! When I get close to the gauge line on the end-grain, I feel the chisel tip into the line and gently but firmly push forward to slice the back of the pin cleanly to the line.

There's no alternative here to chiselling with the grain – not a practice that's usually encouraged. However, if the back of the pin



**22** Carefully deepen the shoulder line at the base of each houndstooth pin...



**23** ... then relieve the back of the pin to create a clean shoulder



**24** Repeat this chopping and paring process to cut the pin down to size



**25** Chamfer the undersides of the tails, being careful not to touch the end of the tail

does become slightly undercut it won't be of any consequence as it will be hidden within the joint and the houndstooth pins don't really contribute to the overall strength.

### Assembly

This follows the same process as for the basic dovetail, beginning by chamfering the undersides of the tail cheeks (**photo 25**). This should enable you to feel the tails into position on the ends of the pins, and as you gently begin to tap the board down (**photo 26**) you'll feel a kind of 'click' as the tails positively locate in the sockets.

As before, wipe off excess glue, check the squareness of the joint and leave for a while to go off before cleaning up with a sharp plane. Whichever joint you've chosen to cut, this can

be a very satisfying moment.

It may be that you've done a very good joint first time – in which case, congratulations. More likely there will be some imperfections clearly visible, representing a learning opportunity (or several). Obviously, we're looking for gaps where the tails meet the pins, or at the outside shoulders. Look also at the corners of the pins – are they crisp and well-defined? If not, it's probably because the sockets weren't fully cleared and the tiny protrusions left in there have compressed the pins during assembly.

The most important things with dovetailing are practice and persistence. It's worth remembering that, in historical terms, it's not so long since jobbing joiners in a hurry were knocking out hand-made dovetailed furniture day in day out,



**26** Tap the joint together using a metal hammer and a narrow block of wood

which is still admired today for the precision of craftsmanship.

So keep at it, and when it all comes together (which it will) in something you want to show off, turn one into a clock or a letter rack, put it on the mantelpiece (**photo 27**) and have fun watching visitors' jaws drop. ✂



**27** If all has gone well, why not put it on show?

### SUPPLIERS

Some of the kit will be available at local DIY outlets, and you might find it well worthwhile looking at craft markets – something like a vintage cutting gauge, for example, might well be a bargain buy there. For the more specialist kit, you should be well catered for by any of the following (far from an exhaustive list, but all very much recommended):

**Axminster Tools & Machinery** – [www.axminster.co.uk](http://www.axminster.co.uk) – a vast range of hand and power kit, good returns policy and customer service

**Workshop Heaven** – [www.workshopheaven.com](http://www.workshopheaven.com)

**Classic Hand Tools** – [www.classichandtools.com](http://www.classichandtools.com)

**Woodworkers Workshop** – [www.woodworkersworkshop.co.uk](http://www.woodworkersworkshop.co.uk)

So there you have it: four great sources of kit, all run by craftspeople with a passion for woodworking and a solid base in skills, experience and enthusiasm. Happy hunting!

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DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£109.00	£130.80
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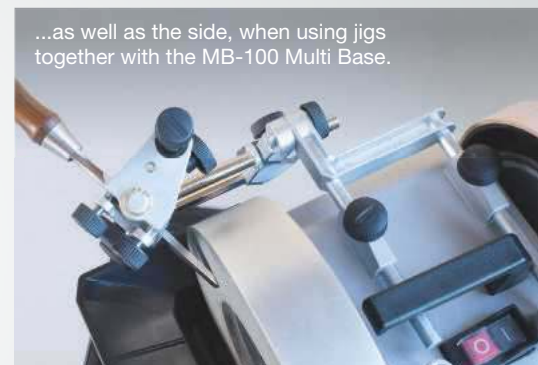
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## TORMEK VISIT PETER SEFTON AT HIS FURNITURE SCHOOL

**Peter has more than 30 years' experience in woodworking and has devoted almost 20 years of his professional career to teaching and mentoring. Last November we visited Peter at his school and workshop just outside Upton-upon-Severn to chat about his story, his courses and sharpening.**

"I started off my teaching in further education in design and make courses and honed my teaching skills. But I decided I wanted to leap outside that cosy environment of the college. So it was quite a big decision for me and the family that I would go from a very secure job into starting a business afresh. The drive really was to see if I could give the students as much as I could in a short time. We may have students straight from school at the age of 18, looking for a career in furniture making. They may be mature students who have been in another job, which perhaps hasn't fulfilled them, or others who are retiring and want to do something in their shed at home, which they actually get immense pleasure out of.

"I have a good range of grinders within the workshop including an old, fast grinder, which I show the students how to use. Then I show them my choice of grinder, which really is the Tormek system. For some students that's a brand-new machine. Others are quite familiar because they've had them in their own workshops for years. We're sharpening every day and re-grinding every week, so we're going back to the Tormek on a very regular basis. And it's nice that it's so repeatable. We're not grinding away anywhere near as much steel as I used to with my old, fast bench grinder. We're now taking minimal steel away and keeping the tools in tip-top condition all of the time.

"The thing I really like about Tormek is that they innovate; they're doing R&D, and come up with the best jigs and how they can improve our sharpening and grinding processes all the time. I have three Tormeks in the workshop for the eight students. I'm always looking to make sure we have the best technology for the students to use and Tormek really forms part of that. It's very safe for the students, it's very safe for the tools and, with all the jigs we have available, we know we can repeat the grinding time and time again. And if you're new to woodworking, holding a chisel on a fast bench grinder and trying to get repeatable results is really quite tricky. We're not serving six-year apprenticeships any more. We've got to get in here, get as quick and efficient as we possibly can, do the sharpening, do the grinding which is critical, but get on with the woodworking, which is the bit we really do enjoy." For more of this interview, visit [www.tormek.com](http://www.tormek.com).



The Furniture School is set in the grounds of a 17th century farmstead near Upton-upon-Severn



Peter has been woodworking for over 30 years

# TURNING WITH CARBIDE INSERTS

John English shows that turning with carbide tools is an approachable method for any turner and here he makes a number of legs for a foot stool

**W**oodturning is currently experiencing a revolution every bit as profound as the one that brought mechanisation to the lathe. Traditional cutters have changed little

in hundreds of years, but now a new generation of carbide-insert tools makes turning more accessible than it has ever been, especially for furniture makers and others who are not full-time turners.



The correct stance for flat insert tools



The original foot stool

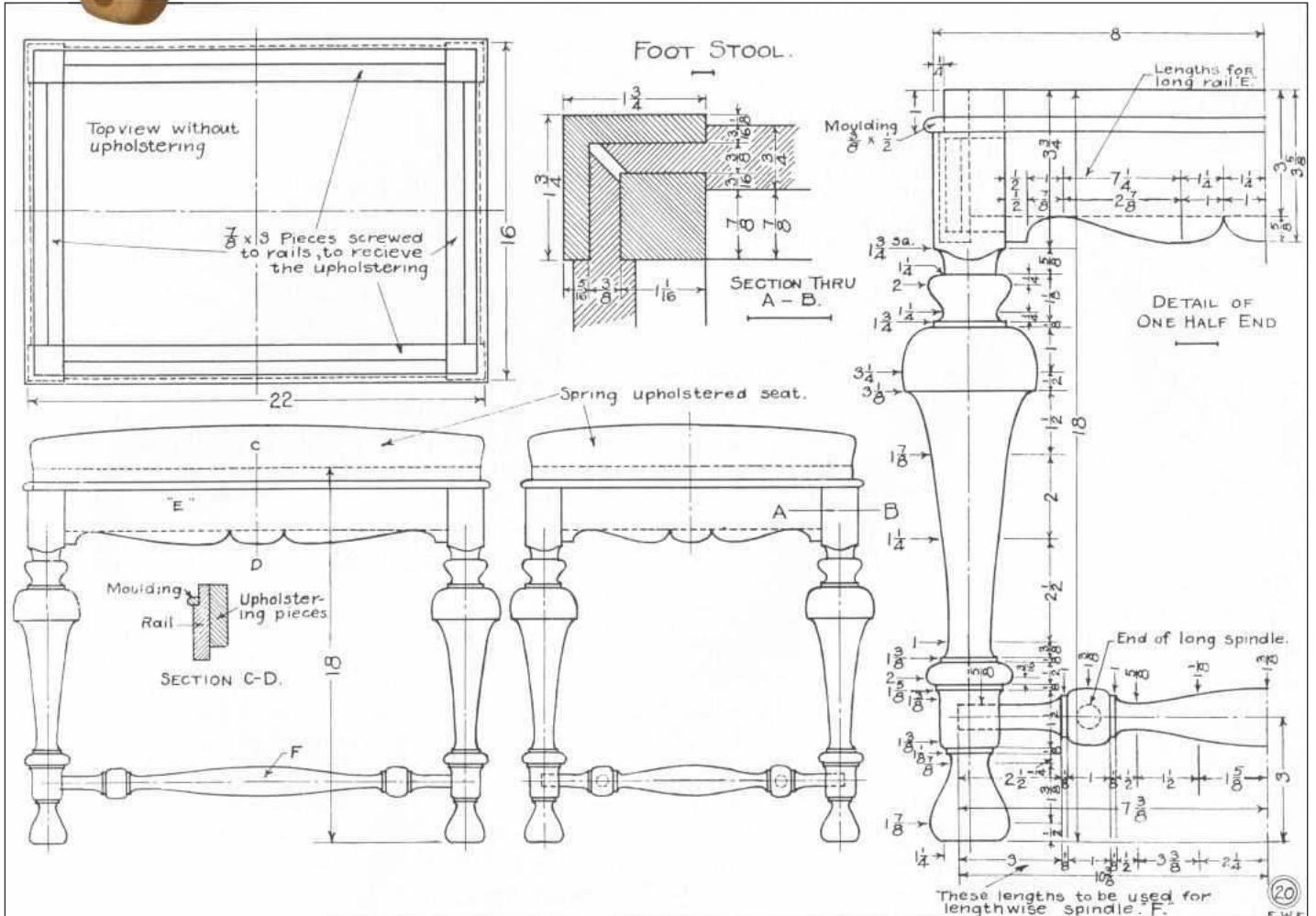


Fig.1 Foot stool plan





1 Mount the blank between centres

While it doesn't apply to this exercise, one should always lay out and chop any mortises in the square section before a leg is turned. By doing so when the stock is still square, it won't roll or tip on the table of a mortising machine, and if hand tools are to be used, it will be easier to clamp in a bench vice. Next, use a photocopying machine to make a full-size copy of the leg, and glue this to some 6mm sheet stock – plywood or hardboard both work well. Rip it down the middle, discarding the right half (your original still has any relevant dimensions).

If you ever turn legs to repair or reproduce a piece of antique furniture, be aware that a lot of early craftsmen would just eyeball the pattern. There can be some notable differences between the patterns of the four legs on a table or chest. In that case, measure more than one leg, so you can make minor adjustments as you turn. In repairs, that will allow old tenons to fit into new mortises.

### Let's turn

Start by marking diagonal lines across the ends of the blank, to establish centres. Use a 3mm bit to drill a 6mm deep pilot hole at the crosshairs. Unplug the lathe and tap the square end of the leg onto a drive spur that has been chucked in the headstock. This is the business end of the lathe (on your left), which houses the drive belt,



2 Start rounding the blank

then draw up and engage the tailstock. Apply enough pressure to sink the outer circle of the tailstock's live centre into the wood (**photo 1**).

Locate the toolrest so that it is about 12mm away from the widest part of the blank. When resting on the toolrest, the carbide insert's cutting edge should be absolutely centred (up and down) on the work when the handle is parallel to the floor. Adjust the toolrest up or down to achieve this. If you are very tall, you may want to raise the lathe by placing a board under each end. If you are of short stature, common practice is to place a thick fatigue mat on the floor.

Set the speed to about 1,000rpm (if your lathe doesn't offer this speed, choose one slightly lower). Rotate the work by hand to make sure it revolves freely and won't catch on the toolrest. Plug in the lathe.

I never turn without a face shield, and won't permit my employees, students or instructors to do so, either. Basic shields retail for about the price of a nice lunch and they are available at most hardware and big box home stores. Our school has a strict policy against long sleeves and loose, long hair, and we also ask students to remove all jewellery when using any power tools, including a lathe. Work gloves are dangerous: they can catch on a chuck or spinning part, and drag your hand into the danger zone. Put a small piece



3 Turning the top of the leg

of blue masking tape on the bottom of the square section, just to remind yourself that it isn't round. As it spins, those corners become invisible, and they really smart if you touch them. Or so I hear...

If you're satisfied that the blank is secure, don your mask and switch on the lathe. Let it run for 30 seconds or so, turn it off, and snug up the tailstock. This usually picks up a little slack. Now you're ready to turn.

Reduce the square blank to a cylinder. This reduction is done with the square tool, in very small increments at first. Place your index finger in the groove at the back of the toolrest, lay the tool near the left end of the rest (making sure it doesn't yet engage the wood), place your thumb firmly on top of the shaft (**photo 2**), keep the tool parallel to the floor, and very slowly ease it forward until it makes contact. Your other hand should be tucking the back end of the handle against your hip. Initial contact is intermittent: as the wood spins, the tool engages a corner, then rides some empty space, and then engages the next corner. With traditional tools, the practice was to reduce corners on the table saw before mounting a blank on the lathe, but these new tools rarely catch, so that step is now largely skipped. Gently move the tool forward until about half of the cutter insert enters the wood, and then withdraw it. Move about half a tool



4 Removing wood using the detailer



5 Establishing the widest point



6 Measuring using callipers



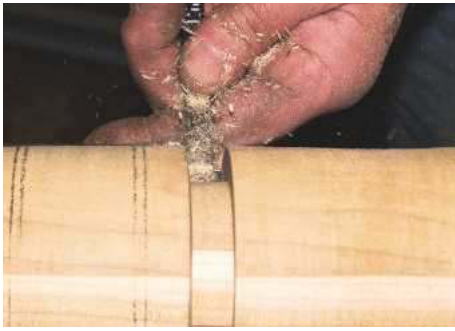
7 Start at the top of the leg



8 Clean up the shoulder with a detailer



9 Establish the widest point



10 Establish the bottom parameter

width to your right and repeat the process until you have knocked off the leading edges all the way across the blank. Turn off the lathe.

Move the rest in until it is again about 12mm from the work. This time after the cutter enters the work, slowly slide the tool across the rest, to your right, not allowing it to go any deeper. Keep the tool handle at 90° to the lathe bed as you slide it along. Then repeat the action on your way back, this time going in another 6mm or so (photo 3). Repeat these cuts until the section of the blank in front of the toolrest is round, then turn off the lathe, move the toolrest to the right, turn the lathe on and repeat the process until the entire blank is cylindrical.

### Shaping

Once the blank is round, shut off the power and hold your pattern against it (photo 4). Mark all of the transitions, making your pencil lines strong enough to see when the work is spinning. Remove the pattern, turn on the lathe, and rest a pencil on the toolrest to extend the lines around the blank (photo 5). You'll need to slide the toolrest along the ways to reach all of your lines.

I used to cut out the pattern on the bandsaw, creating a negative profile with the intention of holding that against the piece until enough of the blank has been removed to allow it to fit perfectly.



13 A round cutter here offers a little more control



16 Creating the small curve at the end of the taper



11 Make the cut 3mm wider, to avoid binding

It doesn't work. The problem is that you must remove all of the waste to check the pattern. Now, I allow the pencil marks to tell me where the transitions lie, and I use a pair of callipers to gauge the diameter at each transition. That is, I measure everywhere the diameter changes. I keep the pattern in view (on most lathes, you can lay it on the ways – and use a steel rule rather than a tape measure to set the callipers because steel rules don't bend.

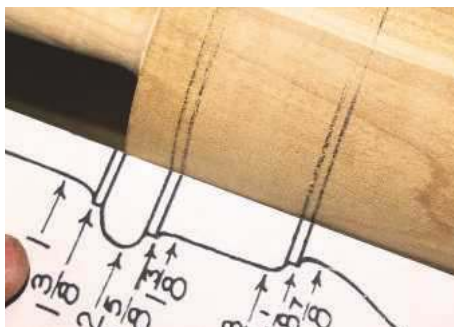
Start shaping at the widest diameter. Turn it down using the square tool until the callipers (set to 82mm) can slip over it (photo 6), then switch to a round cutter and form the onion-shaped top of the leg and the large shoulder below it. Leave a small square bead at the bottom of the onion. I like to use the round tool to remove most of the waste on a large outside corner (photo 7), and then clean up with the square tool. At this stage, ignore the area above the onion: we'll address that last.

Clean up the top of the large shoulder with a detailer (photo 8), using the side rather than the point of the tool. This removes any slight tear-out left by the larger, more aggressive round insert. Use the detailer to fine-tune the inside curve at the bottom of the onion, too.

The large shoulder tapers in a little bit, just



14 Making a concave cut



17 Checking the work against the pattern



12 Set your callipers to 35mm

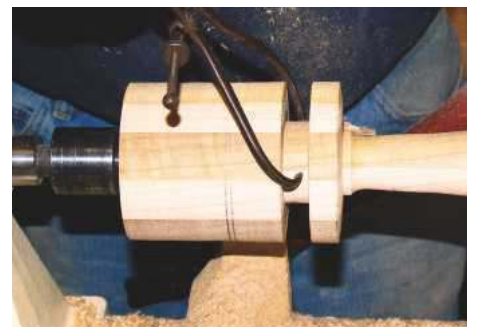
below its apex (widest point). Cut this with a square tool (photo 9), and use the same cutter to blend it into the curve.

The next 150mm or so of the pattern describes a gently arched taper. There is a 35mm square bead at the lower end of the taper, and this provides a convenient way to establish the bottom parameter. Cut it with the square tool (photo 10), with the right-hand edge of the tool riding the right-hand layout line of the bead (this, of course, removes the left-hand layout line). As this is a fairly deep cut, make it 3mm wider than the cutter width, to avoid binding (photo 11). Keep your callipers handy, set to 35mm (photo 12).

Once the ends of the taper have been established, it can be revealed using either a round or square tool. The advantage to using the round cutter here (photo 13) is that it has a little less contact with the wood, so it slides from side to side easier and thus provides a little more control. It's not as fast as the square cutter, but this is an inside curve so you'll need to switch to the round one eventually, anyway. This is especially true at the top of the taper, right below the large shoulder (photo 14). When almost all of the waste has been removed, take a few very light passes with the round tool, to clean up (photo 15). If you go slowly enough here, you'll essentially eliminate the need to sand. ▶



15 Complete the taper



18 Cut the square bead first



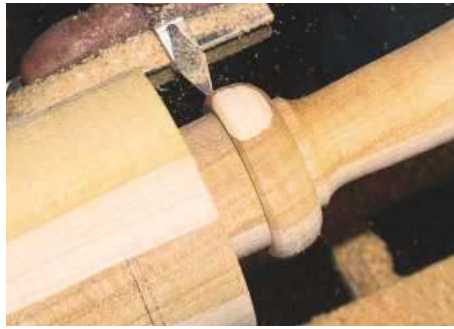
19 Paring the large round bead

The manufacturer suggests keeping a separate cutter on hand for these light passes, so that they are always made with a seriously sharp edge.

Switch to the point of the detailer to create the small curve at the end of the taper where it meets the square bead (photo 16). Note that this is not a very acute point: carbide is very hard but also brittle, and a super-fine point would very quickly shatter. For this reason, I keep an old-fashioned skew chisel handy for those occasions when I need to create a very fine line.

### Detailing

Hold the pattern against the work (photo 17) and note that the next part of the profile is a large round bead with a square one below. Cut the square bead first (photo 18), noting that its diameter is 6mm larger than the square above the round bead. The pattern gets narrower just below here, and this is convenient as it allows you to use the 12mm wide square cutter without removing anything vital at the right side of the cut. When you reach the correct depth (again, making the groove wide enough to avoid binding), stay with the square tool to pare the large round bead to its final diameter (photo 19), then use the detailer to round it over. Start each detail cut at the side of the bead and pull the cutter out as it



20 Detail the large bead

travels towards the middle of the arc (photo 20). This will give you more control than you would have pushing it in and trying to control the depth and direction at the same time. Try it, and you'll instantly feel how much more control you have.

There's another square bead to cut right above the foot, and this can be formed now with the square tool (photo 21). Right above this is an 38mm long cylinder, most of which is revealed with the square cutter (photo 22). The top and bottom of the cylinder are cut with the point of the detailer (photo 23), and then the square tool can be used to reduce the foot to its largest diameter (photo 24). Stay with this cutter to form the outside curve on the bottom of the foot (photo 25), and then wrap up with a round cutter (photo 26).

Address any slightly rough areas along the turning by taking a few extremely light, slow-moving passes, and there will be almost no need for sanding. However, I do like to use abrasives to create one small last detail, and that's the bottom of the square section at the very top of the leg, right above the onion. When I'm making spindles that have a square to round transition, I normally mark that line with a pencil and then use my gentleman's backsaw to cut a 12mm deep (or thereabouts) kerf on each of the corners.



21 Use the square tool to cut another square bead

This prevents the lathe tool from creating slivers that run into the square section.

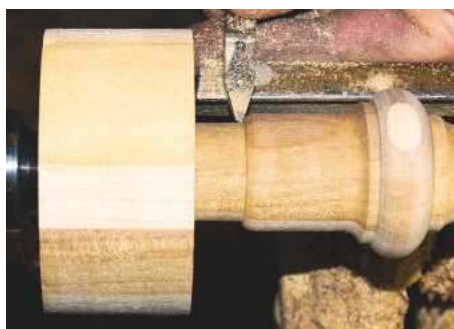
When the transition line isn't completely square (this one dips down at the four centres so the end looks like a miniature version of the top of a cathedral-style cabinet door panel), I like to use the cylindrical sleeves from an oscillation drum sander to form the transition (photo 27). It's quicker (no saw required), and it offers a lot more control than trying to form this delicate area with a round carbide cutter or an old-fashioned gouge. Work through the grits until this area is as smooth as the rest of the turning, and then sand or use card scrapers to clean up the four faces of the square section.

You have now completed an exercise that used all three of the insert shapes to make convex and concave cuts, and complete a number of small details. And you did it without ever sharpening a tool.

One final note: the man in the photos is my buddy Roger, who owns the local glass shop. This was the first time that he had ever turned anything on a lathe. That fact is a dramatic demonstration of the short learning curve of flat carbide inserts, and it reveals how much these tools are fundamentally changing the way we turn wood. ✂



22 Use a square cutter to cut a 38mm long cylinder



23 Cut the top and bottom using the point of the detailer



24 Reduce the foot to a cylinder



25 Start rounding the foot



26 Complete the foot



27 Form the cathedral



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Hand-made: a dusting of talc offers a glimpse of how an engraving's contrasting areas will look in the final print

## QUIET, BUT INTENSE

The magic of **Bob Guy**'s wood engravings conjures colour from a palette of black and white, and texture from blankness of a wooden block, says **Dave Roberts**



Silent art: turning the block on its supporting sandbag under the tool affords the finest control over the cut

“It doesn't have to be loud,” says Bob Guy, finishing the last of his coffee, “but it does have to be intense.”

Though it's actually the saxophone that Bob's talking about (as part of Cafe Lola, he's another of the borderlands' jazz players), it's a maxim with universal appeal: can you think of any endeavour – and especially any creative endeavour – to which it might not also apply? Take Bob's wood engraving, for example: by his measure, these leaded lines of chattering type could probably stop here, and leave the page to the quiet of the white paper and the ink-black intensity of his prints' fine detail and striking perspectives. Except, of course, in at least one very important sense, the white in his prints is far from silent.

### Relief printing

Like woodcuts, wood engraving is another species of relief printing: it is the raised portions of the engraved block that carry the ink, and which, in making their mark on the cotton-rag paper, appear 'positive'; the low areas, meanwhile, go untouched by the inking roller and, in allowing the paper to show through, appear 'negative'. It is in those white spaces, however, that the engraver

does all his work; far from being 'absences', their finely judged presence determines what the blackness says. “That's the art of it, really,” says Bob, “finding the right kind of white line – keeping the whole thing interesting and lively, and saying what you want to say through it.” And the subtlety with which it can be made to speak is remarkable.

Unlike woodcuts, which are made on the long grain, a wood engraving is made on the end-grain. It's a technique that came to prominence in the late 18th century, when it began to be used to illustrate books; its most celebrated practitioner, perhaps, is Thomas Bewick, who combined printing blocks made of hard, dense woods such as box, pear or maple, with fine-tipped metal-engraving tools. The results were wood engravings whose detail and crispness could rival that of lithographic illustrations (which were made using copper plates), but which could be easily incorporated with moveable type to simplify the printing process.

### Long apprenticeship

Though he has always been an artist – “when I haven't been doing a bit of building work to earn money, that is” – Bob hasn't always been an engraver: from a background as a painter he's lived an almost journeyman kind of life: “I've done a lot of awful commission work: sign-writing; model-making for casting, some for white metal, but most for resin – cheap tat, really, but it paid enough to buy myself a couple of weeks to do some painting.” And it was sculpting these casting masters that led first to carving woodcuts – “I knew woodworkers with spare bits of sycamore and pear, and cherry” – before he moved on to



Through the loupe: Bob's latest engraving packs incredible detail onto a block measuring just 4x5in

wood engraving and boxwood.

From there, it has – by Bob's reckoning – been a long apprenticeship: "After 20 years," he says, "I consider myself to be only halfway there when I look at other people's work." To put this modest self-appraisal in some sort of context, however, bear in mind that when Bob admits that, "of all the work I've ever made, my wood engravings have been the most successful," he's speaking as someone who has just sold three of his beautifully crafted, hand-bound books of drawings, silkscreen images and wood engravings to the British Library. And his work isn't about quantity, of course – after all, each edition of prints runs to just 30 impressions – but about a certain quality, and in this he is receiving the recognition of his peers, too: 'Apple pressing', for example, won a prize from the Society of Wood Engravers (SWE), whose current exhibition (5–24 February 2019) at the Bankside Gallery, London, includes two more of Bob's prints.

As in other branches of art, reputation is a type of currency, though not necessarily one that pays the bills. If there's money to be had in wood engraving, Bob explains, it's in creating book covers, especially for exclusive publications such as those from the Folio Society. "But I'm not quite in that league yet," he claims. "The people who are have 'RE' after their name; they're in the Royal Society of Etchers and Engravers. I've talked to some people who are REs, and they've said, 'Get your best work together and send it to [the society]'. But" – and it's a 'but' many will recognise – "I'm scared of being assessed by my peers."

#### "Beautiful and inspiring"

In the meantime, appreciation of Bob's work isn't limited to the wood-engraving cognoscenti: what eye could help but be led by the lines of his landscapes, and drawn through the detail that fills them from foreground to their distant



The printing process is slow and ritualistic – and all the more fascinating for it



Though his laptop has a part to play in preparing his drawings, Bob's engraving is essentially an 18th century craft



First impressions: "If you're producing an edition, every print should be the same. I throw a lot away; they come out too dark, too light, then detail is lost or the tones are different"

vanishing points? Those familiar with the Cain and Tanat valleys can enjoy the extra pleasure of recognition: for more than 40 years these borderlands have been home to Bob. He regards their landscape as both 'beautiful and inspiring', and elements of its hills and towns, its houses and trees, its life and people – many of them with autobiographical associations – are assembled 'in a pleasing way', as he puts it, within the distinctive perspective that is the style on which he has slowly built his oeuvre.

And 'slowly' is the operative word: from first drawings through to pressing ink onto paper, each engraving represents a couple of months' work in a process that begins with photographs and sketches, and progresses through the digital assembly and editing of the images, to a final drawing that is printed to the size of the block. And from there on, it's pre-digital technology almost all the way...



Bob Guy: wood engraving is about, "finding the right kind of white line – keeping the whole thing interesting and lively, and saying what you want to say through it"

### The trouble with tradition

The blocks themselves are usually made of European boxwood, or its southern counterpart, lemonwood. In order to apply a consistent pressure across their surface in the press, and so deliver a uniform tone across the final print, it's essential that the blocks are not only dead flat but that the end-grain of the printing face is mirror-polished, so that the inked surfaces produce solid colour uninterrupted by the presence of visible grain. As Bob says, in a wood engraving, "the only texture [should be] the texture that you make yourself."

There are disadvantages in using wooden media, of course, even ones as dense as these. The first is that, because they're crosscut from slow-growing species, one-piece engraving blocks tend to be quite modest in size; jointing blocks only adds to the risk that movement of the timber will spoil their flatness, which requires that the blocks are kept in conditions of stable temperature and humidity. Even so, Bob maintains, on occasions the heat of his work-light and hands, and the moisture the wood absorbs while being handled, has been enough to warp

a block. The problem could be avoided by using a modern resin block, of course, "but cutting into plastic," says Bob, "is never as nice as cutting into wood." It's also harder to achieve a clean cut because, where an incised sliver of box or lemonwood will break away on one of the fine lines of grain at the end of the cut, plastic's homogenous quality means that the paring can remain attached, and slicing it away risks altering the cut's shape. Despite its drawbacks, then, Bob favours wood: it's traditional and, perhaps because it was used for the master-works of Thomas Bewick, it also has connotations of quality – "and I am trying to up my game," Bob grins archly.

Onto this perfectly blank canvas, then, Bob transfers the outline of his design using duplicate paper, then adds in the detail first using pencil followed by pen; a grey wash of Indian ink over areas that will print black helps him to judge the contrast in the design, and to refine it where necessary. Then it's time to start cutting, which further concentrates the mind: "When you've paid 80 quid for a block, you've got to make a success of it!"



Heavy metal: the iron press' platen is lowered on its wrist-thick thread with a characteristic sweep of the bar



A block in the press, inked and ready to print

### Dots & dashes; black & white

The solid white areas and the simple shapes are the first to go; after that comes the decision making. The soft tones that can be achieved with lithography are impossible with engraving, Bob explains; with a palette of just black and white you have to use a vocabulary of different marks to define the details, the shading, the textures. This lexicon is something the engraver builds up over the years, "and again," says Bob modestly, "I'm not really there yet." Yet it's astonishing how – with a language comprising dots and lines, a palette that's as binary as Morse code – he is able, with tools that look like instruments for eye surgery, to create the illusion of colour, to conjure from the block's blankness the impression of a



'Apple Pressing' (2015) – this print was made from a lemonwood block 20 x 15cm to celebrate the annual apple pressing day at Y Dolydd, the former workhouse in Llanfyllin where Bob had a studio for a time



Message in a Space Bottle: hand-made bindings, boxes and sleeves make objects d'art out of Bob's limited editions of prints

tree's soft leafiness, say, or the solidity of stone. Is this how he sees? Does he visualise a scene in terms of tone rather than colour? "I think so. I do landscape as an engraving but not as a painting; I used to paint, but now I'm a bit scared of colour..."

His latest work, which is taking shape on a block just 4x5in, "is of a flamenco guitarist that we saw at our favourite venue." Bob's photo shows the musician giving a flamboyant flourish at the end of a piece, and the resulting engraving will form the centrepiece in a triptych: the blocks on either side will create a narrative, showing first the empty stage and the expectant audience, and finally the audience applauding after the guitarist has left the stage. "I like telling stories in the prints; it introduces a literary element, telling stories through pictures."

### The silent art

When the pictures are in the making, though – with the block on its supporting sandbag, and being slowly turned under the tool so as to exercise the finest control over the cut – engraving is a silent art: "I'll consider for hours how to place a mark; looking at an eye, say, or an



'A Legend of Pennant' (2014) – 'the shifting perspective of this piece derives from a small painting I made in the '70s. It also has text by my neighbour and bard, Robin Hughes. The ancient tale of Melangell and the hare intrigued me as I was living close to Pennant Melangell at that time'

ear or brow – they're the tiniest of cuts, but they have to be there." And yet, for all the deliberation, for all that he might try to ensure success through the painstaking preparation of his drawings, the process of engraving itself, "still leaves room for improvisation. It's like playing jazz: you have a structure, but you're free within that structure; the freedom here is in the marks you make to shape the illusion that you want to create. When you come to it, you're improvising, making decisions as you go along; being free to improvise is really important, otherwise it becomes a bit dead." The trick to this, he maintains, "is to be conscious but not too self-conscious because then it all goes wrong. Don't think too much, be intuitive; it's about confidence." And while it is possible to remedy a mistake using shellac, repairs are never perfect; as can often be the case in making, part of the creative process is in making mistakes.

### Living connection

Though Bob demonstrates the printing process, and its rituals – rolling ink onto the block, laying on the paper, positioning them under the platen that's lowered on its wrist-thick iron thread with a characteristic sweep of the press' bar, then carefully checking the single resulting impression – are fascinating, there's almost more magic in the way he checks his work while the engraving's being cut. Bob dusts the block with talc, and the powder's whiteness lodges in the incised shapes, offering a glimpse of how they'll contrast with the solid areas in the final print.

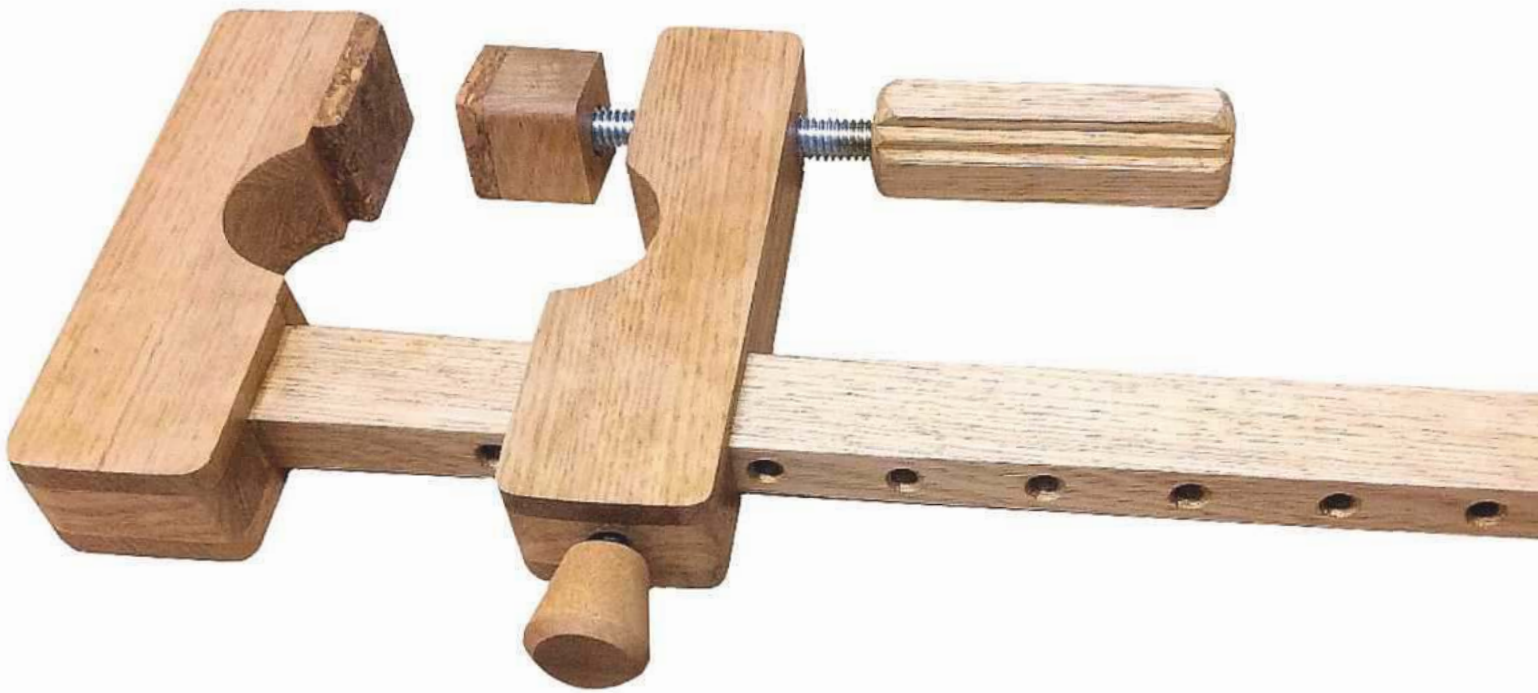
As the surplus is brushed away, the image springs to life under Bob's hand in a way that's also a reminder of the value of the hand-made in an age of digital replication. Even if wood engraving is a specialist field and, for most, not a lucrative one, its products have a tremendous value nonetheless: they're tangible things that offer – right down to the way that the act of printing embosses the paper – a direct connection to the maker and the means of production. "Hand-made objects," says Bob, "have a certain quality," and the skills by which they're made, he believes, "have to be kept alive; if we don't make them, the skills are just going to die out." ✕

### FURTHER INFORMATION

If you'd like to learn more about Bob's work, and the prints he has for sale, you can contact him at Ael y Bryn, Derwlwyn Lane, Llanfyllin SY22 5LB, tel: **01691 648 862**.

While wood engraving enjoyed its salad days during the 19th century, the Society of Wood Engravers is enjoying something of a renaissance: "It's more popular now," Bob reckons, than it has been for 50 years: "There are some younger [engravers] coming in, though most of us are older guys." You can find out more about the SWE at [www.woodengravers.co.uk](http://www.woodengravers.co.uk).

You'll also find some further reading on wood engraving blocks, tools, and the basics of printing on the website of blockmaker and engraver, Chris Daunt ([www.chrisdaunt.com/endgrain-wood-engraving-blocks](http://www.chrisdaunt.com/endgrain-wood-engraving-blocks))



1 The completed clamp

# CLAMPING DOWN

A woodworking workshop can never have enough small clamps. Here, Lance Winter shows you how to make your very own wooden version, using threaded rod and rare earth magnets

**A** woodworking workshop cannot have enough small clamps. Having realised this, I decided to make one of my own (photo 1). To make this clamp you will need a piece of hardwood timber measuring 65 × 18 × 500mm in length, a 1 × 120mm piece of 3/8in BSW or 10mm threaded rod, plus 10 × 3mm and 6 × 4mm rare earth magnets.

## Cutting components

On a circular saw and bandsaw cut the timber in the following way (Fig.2). The first step is to cut a 38mm wide strip, which will be used for the jaws (bandsaw). Next, cut the 26mm piece into 2 × 75mm and 1 × 26mm pieces (handle and shoe). You can then cut 265mm off the 38mm length; this can now be cut into 2 × 6mm thick

pieces and the other two pieces can be machined to 14mm thick. The next step is to cut the 6mm thick pieces into 4 × 130mm, and the 38 × 14mm cut into 2 × 90mm lengths, and the remainder into 2 × 38 × 17mm lengths.

When you have finished cutting you should have the following pieces:

- A** – 26 × 14 – 1 × 310mm (bar)
- B** – 38 × 6 – 4 × 130mm  
(2 for fixed jaw and 2 for moveable jaw)
- C** – 38 × 14 – 2 × 90mm  
(1 for fixed jaw and 1 for moveable jaw)
- D** – 17 × 14 – 2 × 38mm  
(1 for fixed jaw and 1 for moveable jaw)
- E** – 26 × 14 – 1 × 26mm (shoe)
- F** – 26 × 18 – 2 × 75mm (handle)

If you have many small scraps of timber in your workshop, you may want to use some of them to cut out the various components of the clamp. You might also like to vary the sizes of the pieces to make the clamp larger or smaller to suit your needs. The processes in the making of the clamp will not vary.

## Drilling the holes in the bar & part 'D'

The next thing to do is to make a jig to mark out and drill the holes in the edge of the bar. Take a piece of timber measuring 45 × 26 × 14mm and glue it to two pieces of timber or 45 × 40 × 3mm plywood and glue them together as shown in Fig.3. A completed jig is shown in photo 2. Mark a large 'X' on one side.

Take the 315 × 26 × 14 piece ('A') and square a position 70mm from one end. Place the jig over it with the edge and the line as one. Clamp this into a machine vice and drill two 5mm holes about halfway through. Release the pressure on the jig and move it so that you can insert a 4.5mm pin in one of the holes. Retighten the vice and drill

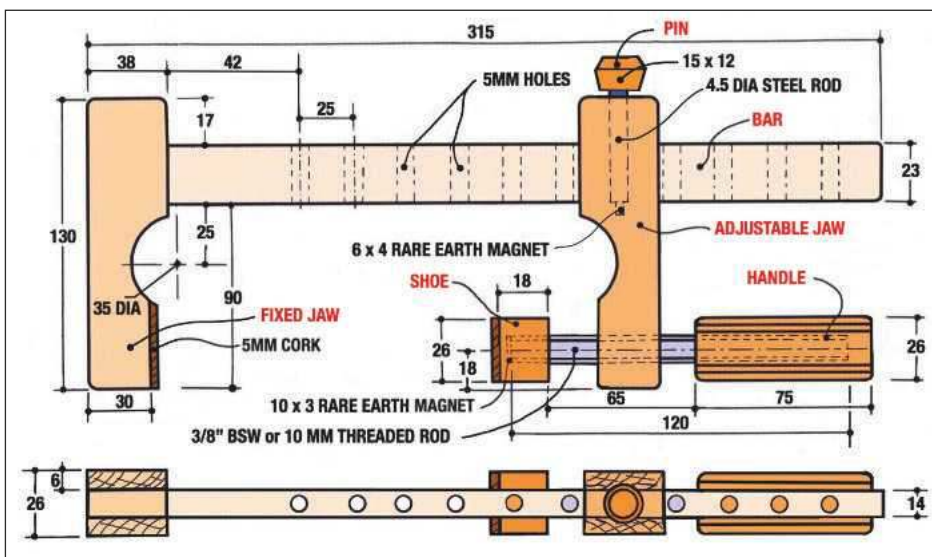


Fig.1 Bar clamp dimensions

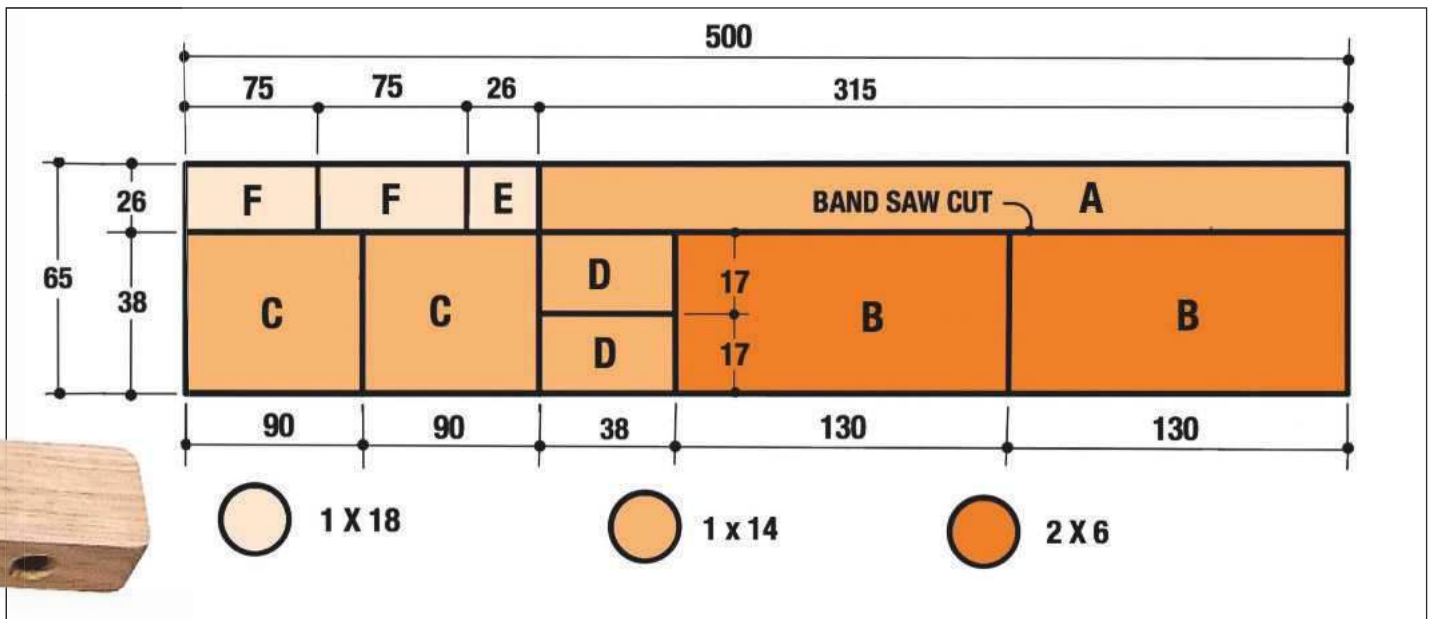


Fig.2 Cutting details

another hole. Continue in this fashion until you reach the end. Mark an 'X' to correspond with the one on the jig. Re-drill the holes completely through the piece (photos 3 & 4).

Saw piece 'A' to a width of 23mm. Take piece 'D' and mark 9mm from one end and set it in the jig with this line matched up with the edge of the jig. Drill a 4.5mm hole in this piece and mark the side with an 'X'.

### Making the fixed & adjustable jaw

Take part 'D' – with the hole in it – and glue it to part 'B' as shown in photo 5. On the end of part 'C' mark the centre and drill a 4mm hole 6mm deep, then insert a 6 × 4mm rare earth magnet into the hole (photo 5). Using the bar ('A') glue 'C' in place onto 'B' using it to give you

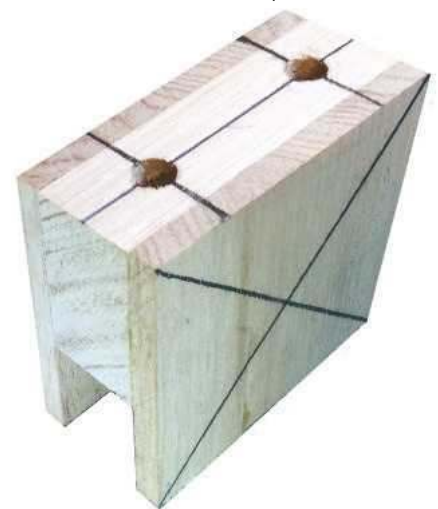
the spacing. The bar should fit snugly and slide with a little resistance. A little sanding later will enable it to slide as required.

You can then glue the other part 'D' onto 'B' and when cured, 'A' onto 'B', checking that it's fixed at 90°, and finally 'C' onto 'B'. When all pieces are cured, the remaining part 'C's can be attached to the jaws. Photos 5 and 6 show the jaws ready to have piece 'B' glued onto them. Photos 7 and 8 show the fixed and adjustable jaws once completely assembled.

### Making the handle

While these are curing, the handle can now be made. Take parts 'F' and cut a groove to suit the type of threaded rod you are using: 10mm wide and 5mm deep for 10mm metric

and 9 × 4.5mm for 3/8in BSW. These are cut into the 26mm surface of part 'F'.



2 The completed jig

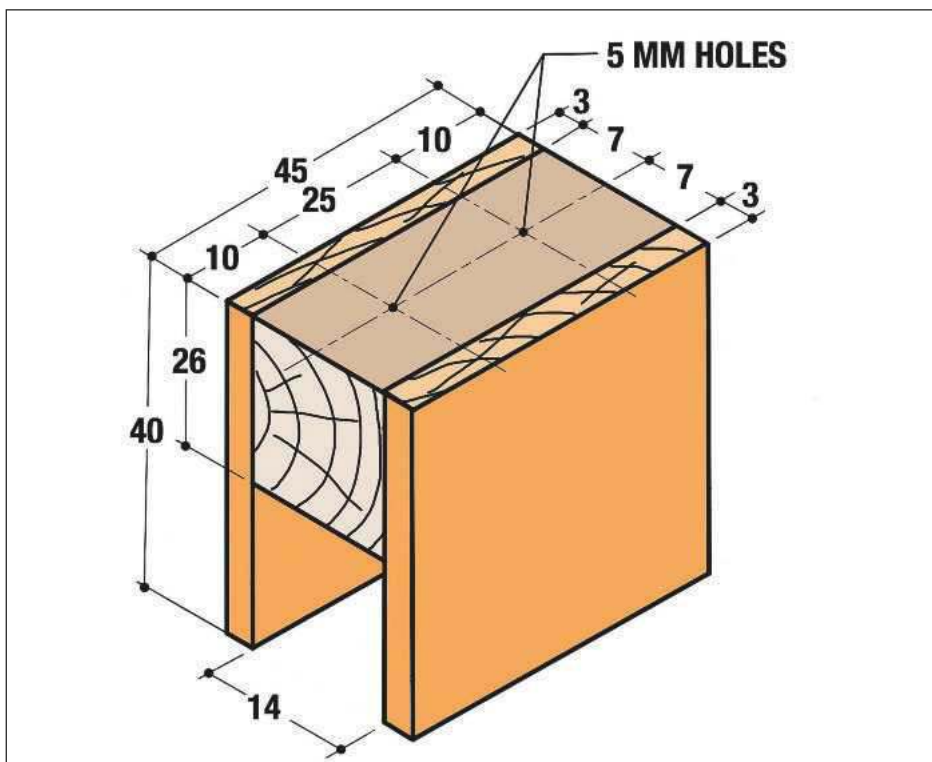


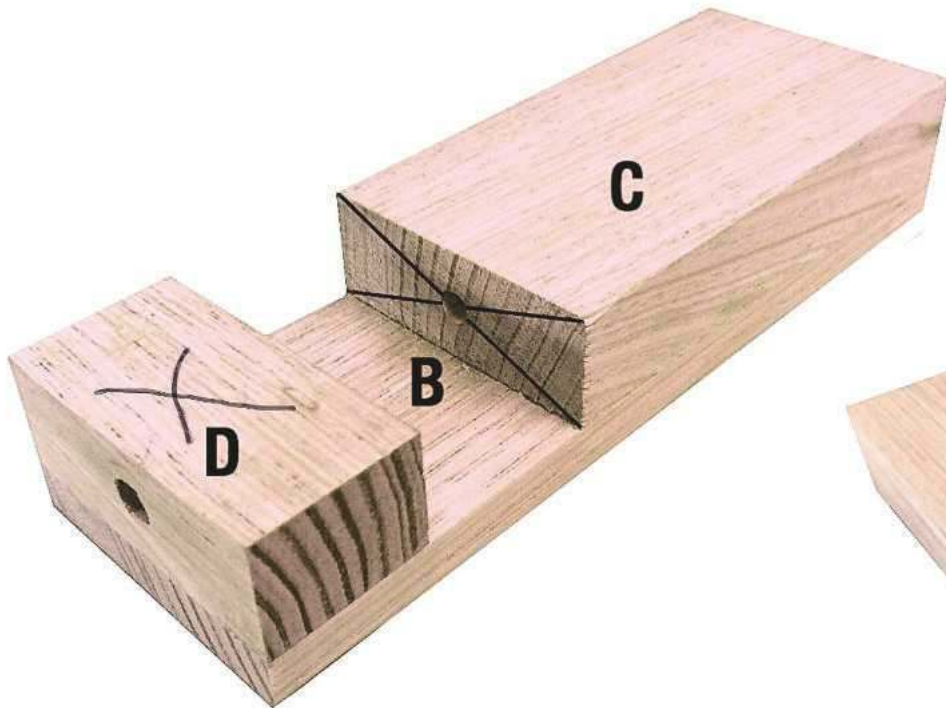
Fig.3 Jig details



3 Holes being glued in the bar using the jig – note the 'X's



4 Finished holes in bar and adjustable bar top

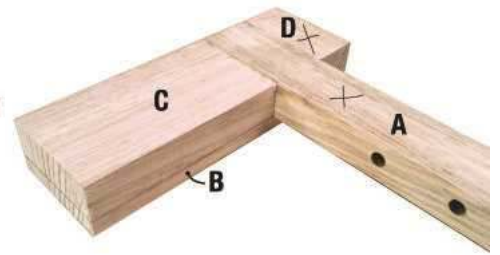


5 Adjustable jaw

Part 'F' can now be ripped to 13mm thick. The reason I don't do it earlier is that if I make an error in cutting the trenches, I still have another 26mm surface I can use. Next, cut out your threaded rod to a length of 120mm and use masking tape to mark 65mm from the end. Now place the rod in the groove and mark where it is to go (photo 9). Glue a piece of 9 × 9mm, or 10 × 10mm into the end of the groove. Glue together using five-minute epoxy resin, putting some in the groove and on the other contact surfaces and cramping them in a vice. Photo 10 shows the finished result. The tape, as well as marking 65mm, will prevent squeezed out glue from fouling up the threads.

You are now able to shape the handle to make it more comfortable to use. There are several options for this as shown in Figs.4, 5 and 6.

I will explain how to cut the Fig.6 option as I find it to be the most effective. Sand the four surfaces so that they are perfectly square, then set your circular saw to a height of 7mm and the saw fence, so you make a 24mm cut from the outside of the handle. Make a cut on each



6 Fixed jaw. Note that the 'X' surfaces are all on the same side



7 Fixed jaw

side and then another from the opposite direction. Keep moving the fence in small distances until you have your desired shape and grip. It might be a good idea to practice on a piece of 26 × 26mm scrap timber to check your settings. To complete the handle, round off the ends. The handle is now finished (photo 11).

We can now go back to the pieces we glued up earlier. Check that the blade 'A' will slide through it. If not, a small amount will have to be either filed or sanded off.

#### Making the shoe

You can now make the shoe. Take piece 'E' and find the centre of the 26 × 26mm surface and drill a 10mm blind hole approximately 15mm deep. Into this hole glue a 10 × 3mm rare earth magnet or similar. This will hold the shoe to the handle and prevent it being lost.

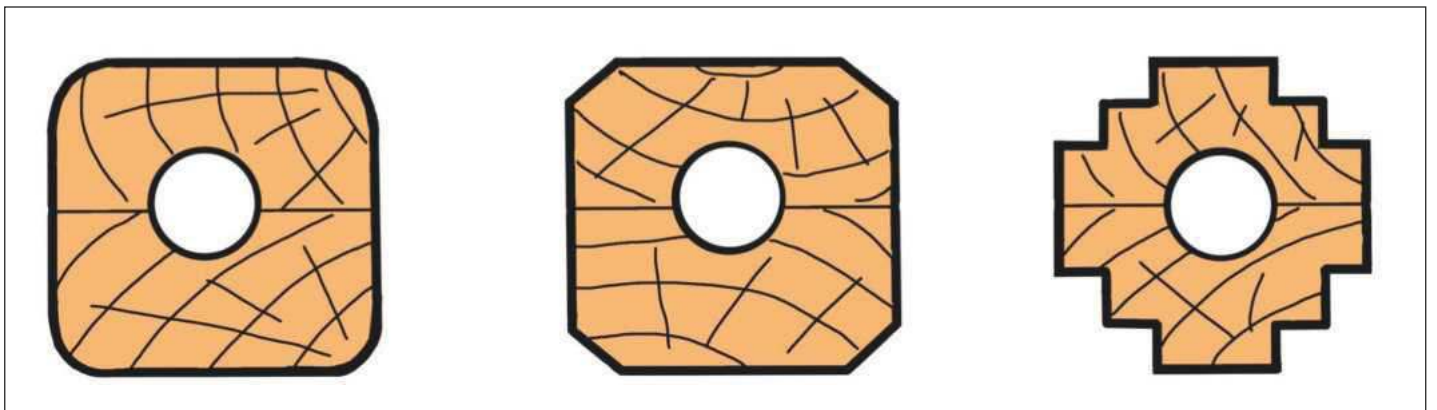
#### Decorating the jaws

We can now assemble the jaws and mark 25mm down from the edge of the bar. Cramp

them together in a machine vice. You then have to drill a 35mm hole through the pieces from both sides (photo 12). I drill about three quarters of the way through from one side and drill a small 2mm locating hole through the centre so as to give a locating position when I drill from the other side. This operation is principally for decoration only. Now is the time to cut the top sections of the clamp to 30mm wide; this is best done using a bandsaw (Fig.1).

#### Fitting the handle to the adjustable jaw

You are now ready to mark out, drill and thread the adjusting jaw to take the handle. Firstly slide the two jaws together and trim a little off each end. Measure 18mm from the 30mm end and square all the way round. Find and mark the centre on the 18mm surfaces and centre punch the spot. Drill an 8mm ( $\frac{3}{16}$ in BSW) or 8.5mm (10mm metric) hole partway through from both sides. I do this to ensure that the drill bores a hole parallel to the sides of the piece. I use a smaller drill first so as to make a pilot hole.



Figs.4, 5 &amp; 6



8 Adjustable jaw



9 Handle components ready for gluing

This hole can now be tapped out with a  $\frac{3}{8}$ in BSW or 10mm metric tap.

**Making the pin**

Cut a piece of 4.5 metal rod to a length of 55mm – a 100mm nail is the right diameter. Also cut a 20mm diameter wooden rod to a length of 20mm.



12 Drilling the jaw decoration

Drill a 4.5mm hole into the end and glue in the metal rod, then turn or sand the timber end to the desired shape.

**Finishing the clamp**

Glue 5mm cork to the shoe and the bearing surface on the fixed jaw. Smooth all the flat

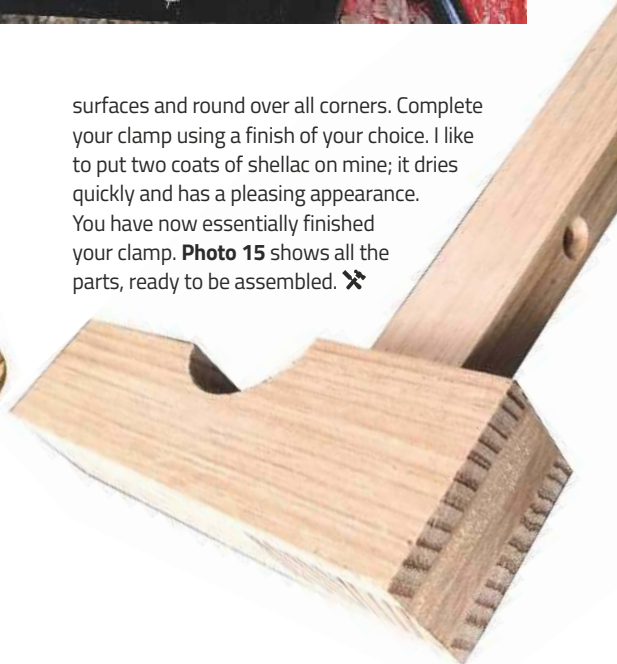
surfaces and round over all corners. Complete your clamp using a finish of your choice. I like to put two coats of shellac on mine; it dries quickly and has a pleasing appearance. You have now essentially finished your clamp. **Photo 15** shows all the parts, ready to be assembled. ✂



10 Glued handle



11 Finished handle



13 Finished fixed jaw



14 Finished adjustable jaw



15 The clamp components, ready to be assembled

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# INSPIRED BY YOU

**Anselm Fraser, principal of The Chippendale International School of Furniture, suggests a range of ways in which we can seek inspiration to further our woodworking endeavours**

**I**nspiration can be defined as finding a new or better way of answering a question, solving a problem or, for us woodworkers, coming up with a better design for a piece of furniture. But finding inspiration can be a hard task. So how do you find it? Well, the first thing is not to think negatively. There's no point in thinking "I don't know how to do this..." or "I am entirely out of ideas." Thinking like that only creates more negativity and a mindset in which failure becomes self-fulfilling. Change your mindset to think "I will find the inspiration to solve this." Some wise words from the Anglo-Indian actor Roy Deep: "Inspiration comes from within yourself. One has to be positive. When you're positive, good things happen."



John Robertson with his 'Time Table'

## Return to nature

Even better, take some exercise. Physical activity helps to stimulate good brain chemicals, which can influence positive thought patterns. So, if you can, go for a long walk in the countryside. Wynn Bullock, the famous photographer, said: "Whenever I have found myself stuck... I return to nature. It is my principal teacher, and I try to open my whole being to what it has to say." Or talk to those whose opinions matter to you. Sometimes talking about your creative problem can be the most important part of solving it.



## First ideas

Another good idea is to read about what you want to achieve. If *The Woodworker & Good Woodworking* can't throw up any ideas, search around the internet. See how others have come up with

the kind of creative designs you're looking to achieve. Most of all, don't be too hard on yourself if those elusive ideas just don't come. We all have bad creative days – so just accept it! Or do what novelists do: break down their proposed book into bite-sized chunks and then come up with bite-sized bits of inspiration.

It would be impossible to dream up the entirety of a complex book in one burst of inspiration.

Rather, come up with a first idea, which will lead onto another idea...

## Learning with pleasure

For me, inspiration takes me back to my childhood when I would watch joiners and carpenters working on a house my father had bought. That started me on woodworking as a hobby and I can still remember making a balsa model of a tall ship. However inspiration finds you, it's a very important part of the woodworker's craft – that little piece of magic that turns a mundane

piece of furniture into something special.

And when you do have an idea, write it down. Simply, an idea forgotten is an idea lost. But it's a process of inquisitive search that should also be fun. As we constantly say to our students, anything learned with pleasure is likely to last a lifetime.

## Other talents

But inspiration is also about making use of the other talents that you have. For example, we regularly have students with architectural qualifications. They are able to use their professional training to make furniture that employs both architectural and woodworking skills – wonderfully complex pieces that benefit from their previous experience. So what else are you good at? It needn't be something acquired at college or university, just skills or interest that you naturally have. For example, one of our students last year also had a passion for watches and watch-making.

One of the pieces he made was a 'time-table' – a simple coffee table with pieces of old watches embedded in resin on the top. A quirky and inspired idea that turned a mundane piece of furniture into a talking point. The lesson to finding inspiration is also straightforward: keep looking for it, and keep looking in both usual and unusual places. The more you look, the easier it is to find.

Or, as Bob Dylan puts it: "Inspiration is hard to come by. You have to take it where you find it." ✂

## FURTHER INFORMATION

To find out more about courses offered by The Chippendale International School of Furniture, see [www.chippendaleschool.com](http://www.chippendaleschool.com)

# SHAPE SHIFTER

Edward Hopkins draws with birch ply

## Holy Mountain

Birch-faced ply is a lovely material – clean, sharp, pale, instantly available (if a bit pricey), and one that releases you from the constraints of grain strength and shrinkage. It has little to say about the beauty of timber, but a lot about the clarity and purity of the shapes it affords. Most of the

work then is in design. The difference between a good piece of work and one less so will be in the fine balance of bulk, space and line. Perhaps a drawing board gives you more freedom and the advantage of working large, but a computer is more convenient. Either way, a thing like this Holy Mountain has to be drawn out.

Firstly it has to be sketched. It doesn't matter how bad your freehand is as long as you get the idea. Rough scribbles can often capture the essence of the piece. When you know you've got it, hang on to it and refer back to it, for the vagaries of design can sometimes veer you away from what you intended. Then check out the construction. Again, rough exploded diagrams will do, but you must know that it will work. Perhaps, then, a better representation can be made on squared paper, paying attention to likely dimensions. Now you have enough to go on, and a proper drawing is in order.

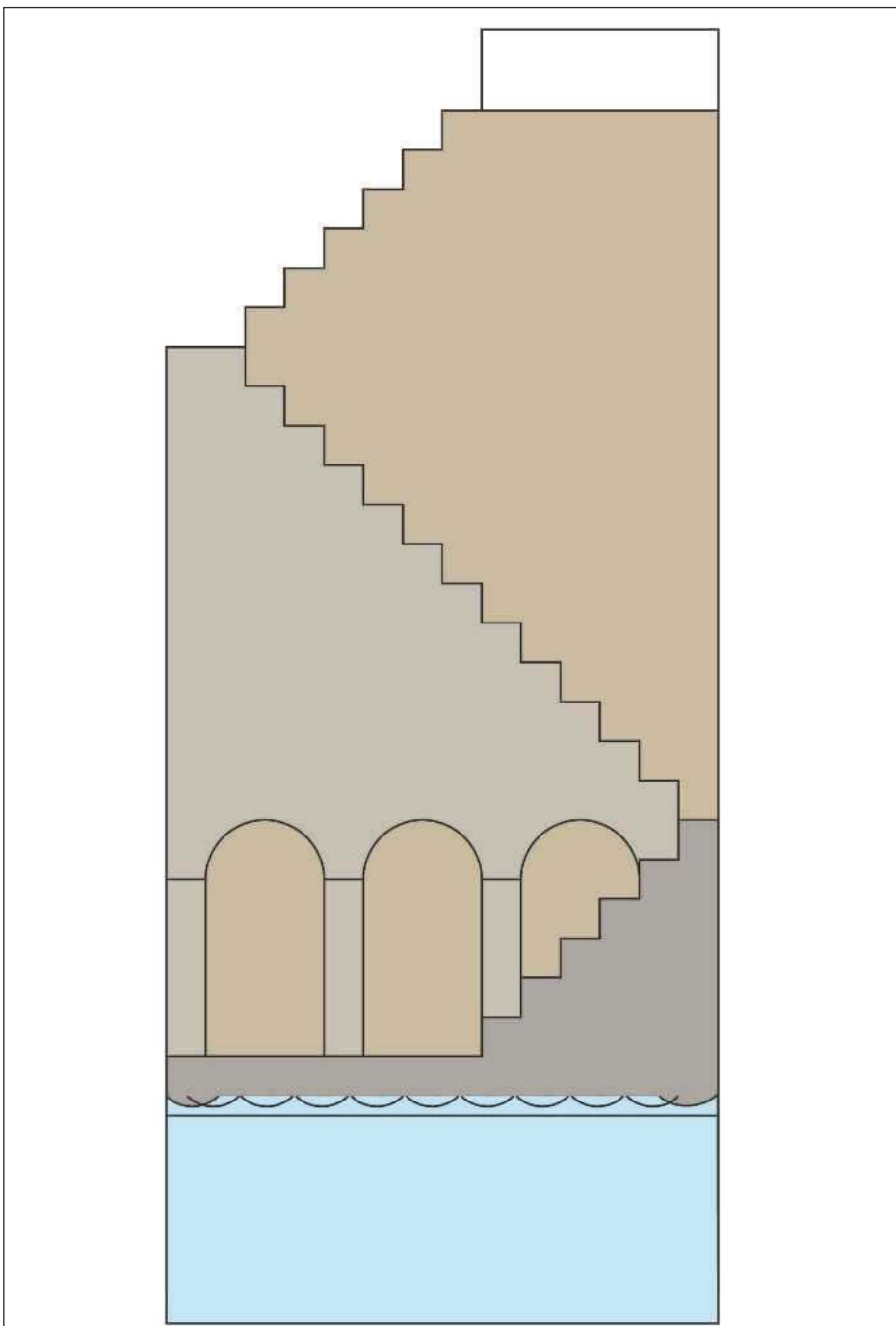
Two dimensions will never represent three, and although computer programs can fly you round and through your drawing, I've not acquired that skill. James encourages me to use SketchUp; he says it's easy, and appropriate to the work I do, but I don't spend the time learning how to use it.

I've had a couple of holidays in Greece. I love the little chapels – they call them monasteries – with their white cubic bodies and sky blue domes. Inside a simple exterior is often an explosion of ornate decoration in painted panels and metalwork in contrast to the often barren landscape outside. (With our cluttered, noisy, insistent culture, we do the opposite, and find peace in minimalist décor.) Monasteries represent what goes on inside us. It can be difficult to access this knowledge, and this is what my Holy Mountain is about.

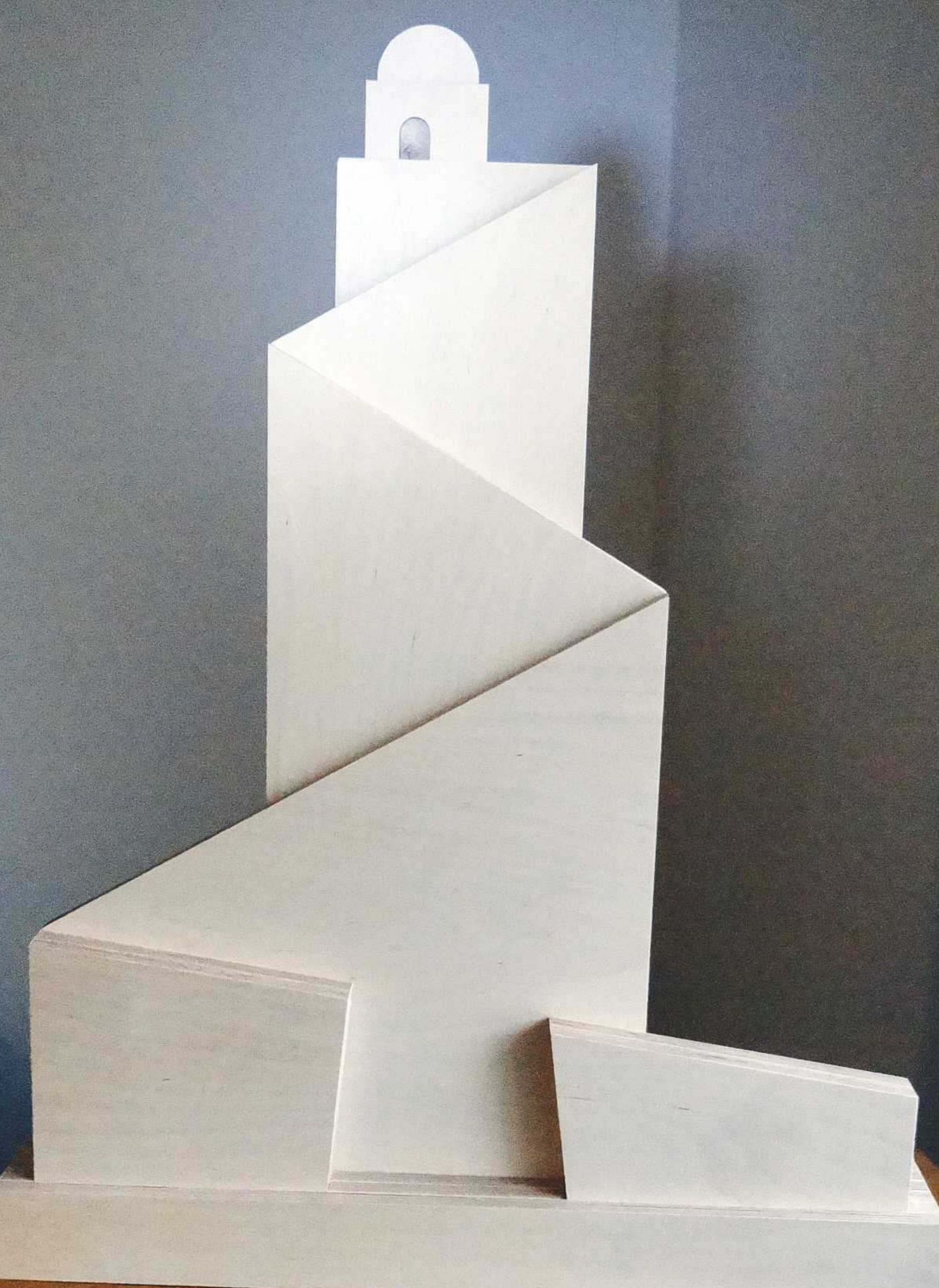
I don't really want to elaborate. I rarely read the writing beside a piece of art in a gallery because the whole point of art is to say what cannot be said in words. It is to leave the viewer with their own reaction and therefore interpretation. As with almost everything, we will see what we want to see and expect to see including, paradoxically, what surprises us.

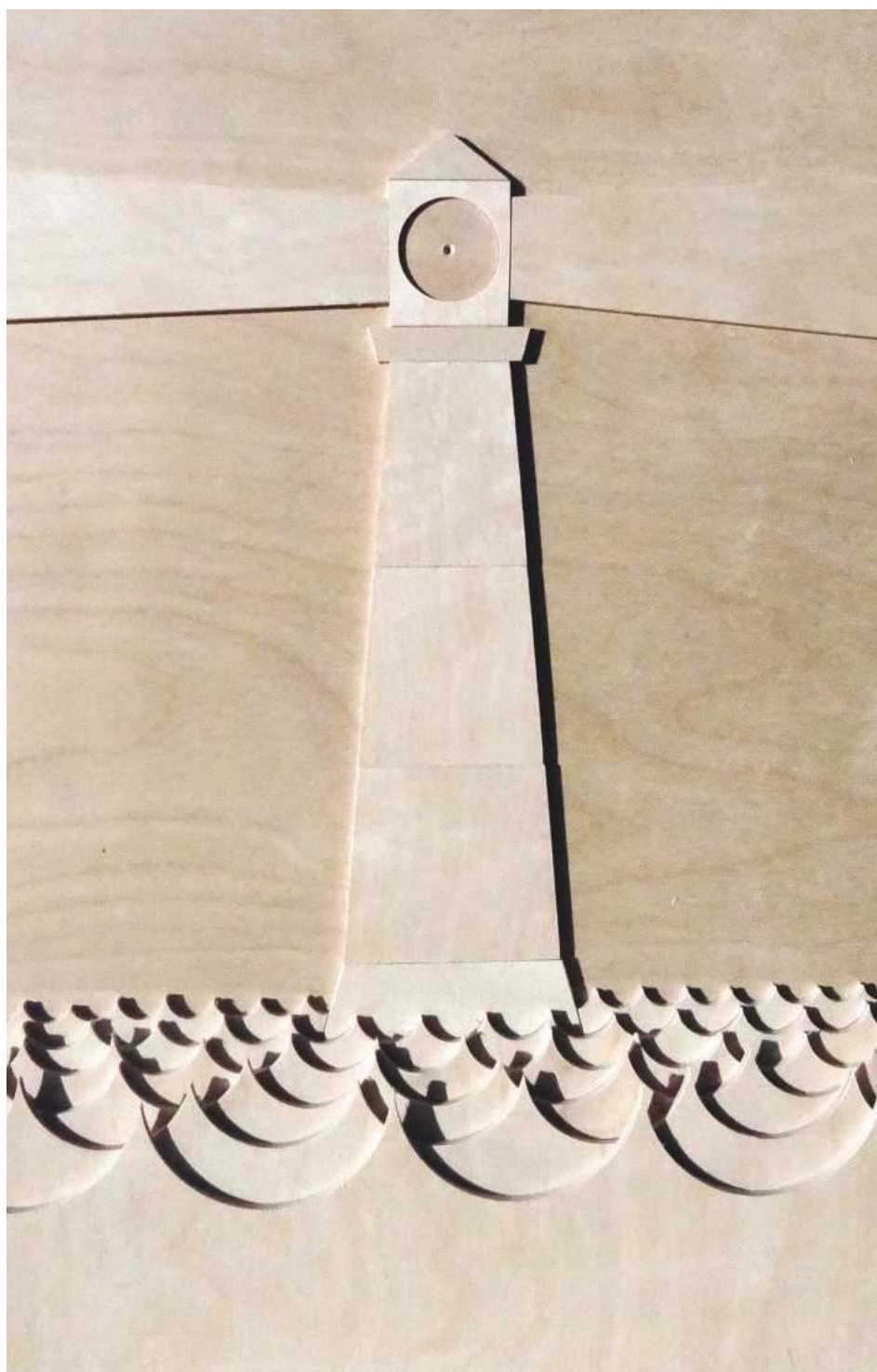
When I look at the Holy Mountain, my eye travels up and around and down to where the pathway is disrupted. There is a contradiction here. The doorway in the chapel gives the scale: you're never going to jump that chasm. Nevertheless, it is crossable because the chapel has been built. It's a reciprocal can/can't, is/isn't dynamic that doesn't rest.

My initial sketches came up with shapes so near equilateral triangles that I had to make them so. The top triangle therefore becomes a 3-4-5 triangle. Both these shapes have irrefutable geometric purity. The lower, easier slope was arbitrary; the chasm deliberately asymmetric and undercut so as to emphasise the impossibility of crossing. The plinth (which is a constructional gift) is also flared. These slanting lines refer up



1 Cistern sketch





2 A second attempt at a lighthouse

to the top, and tie the piece together. The chapel and the chasm are equivalent: the piece needs both. The doorway is offcentre. It suggests that the monastery might stand at an angle. And it says that however you've made your arduous journey up this zig-zag track, you are not the centre of attention. There is something going on inside that little building on the mountain that is more important than you.

**Cistern**

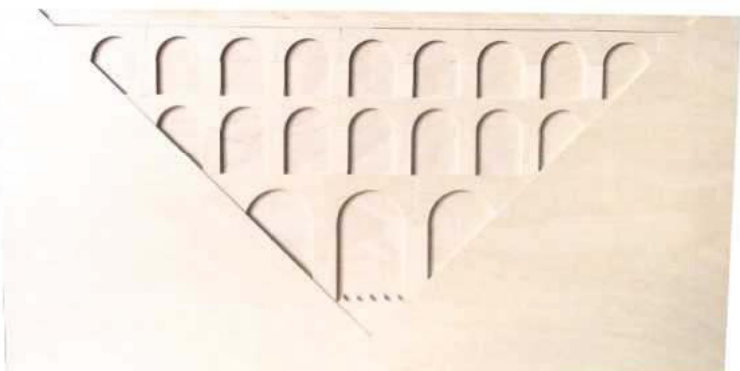
The next piece is cistern (photo 1). Having coloured it for clarity, I rather like it. Mmm. The water isn't drawn accurately. I anticipate three layers of 4mm ply: the first slightly rippled, the middle gently waved and the front one flat. The white (sunlit) wall is on a separate 12mm layer. The wall might not be quite right, but the rest of it I find pleasing. The steps will have to be straight from the bandsaw. I feel a homemade jig coming on...

**Lighthouse**

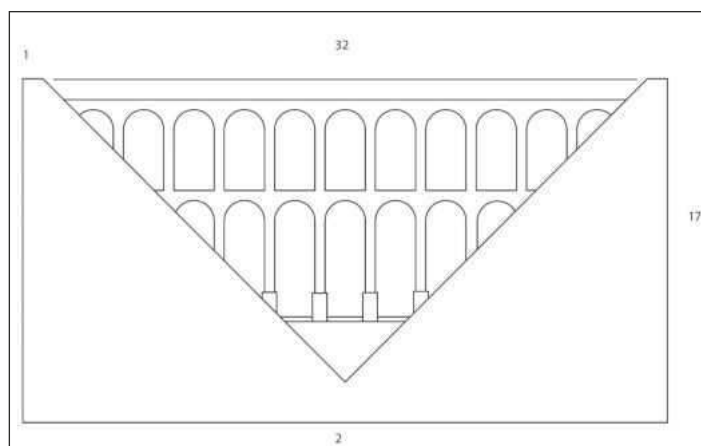
A second attempt at a lighthouse (photo 2), using 4mm ply on a 12mm backboard, employing all five sanding bobbins and the wide end of the belt (see opposite on the Triton sander). The crazily choppy sea has verticality: the eye travels up the lighthouse and out sideways in a reassuring, dominant, unbroken, horizontal beam. The lighthouse is segmented to represent a paint scheme (typically red and white). I had initially thought to colour each layer of ply but apart from the technical issues involved, that would introduce a level of complexity in what is essentially a very simple design. Leaving the ply uncoloured emphasises the stark significance of the shapes.

**Aqueduct**

Not everything works. I had high hopes for this aqueduct, but I wasn't happy with it (photo 3). It is meant to contrast a left-to-right water channel, with the front to back valley (as well as glorying in majestic architecture), but the water in the valley makes it look like a ditch. The arches are heavy – more Roman than Victorian. That shouldn't matter but somehow it does. It just misses the mark and I don't know why. Its salvation (if it has one) might be several coats of white emulsion to make it look like an old plaster panel. ✘



3 I had high hopes for this aqueduct, but I wasn't happy with it



4 Maybe I should have stuck to the drawing? (Dimensions in inches)

# TRITON OSCILLATING BOBBIN & BELT SANDER

Tricky things, curves. They're tricky to design and tricky to execute. Most woodworking tools like to go in a straight line, and so do I: it's so much easier. Straight lines, however, are rigid and can be cold. A bit of a swirl here and a swish there can make all the difference. It can add warmth and life. Too much, overdone or poorly produced, can, however, destroy a piece, turning it into the design equivalent of porridge, without form, delineation or very much taste.

I steer clear of freehand curves because I'm no artist, and I don't trust myself. I do trust geometry as long as it is balanced. You can't argue with an equilateral triangle, or a well-proportioned Roman ogee. You might have a thing against ovals (I do) but it counts as nothing compared to amorphous, indistinct, sloppy, characterless curves that are seen typically on the pediments of careless reproduction Welsh dressers and settles. When you don't know what you're doing, it's easy to do the wrong thing.

Roughing out a curve of any persuasion is not the problem. A bandsaw, scrollsaw, fret saw and jigsaw – a coping saw if you must – will each do its duty. The difficulty comes in finishing. I discount finishing by hand – wrapping abrasive paper round a fat dowel and twizzling it back and forth till your wrists ache, not only because it takes for ever, but because slippage creeps in. Rounding over. Irregularity, due to differing grain resistance. It just isn't right.

## Bigger & better

The first machine I bought was a Sears Craftsman radial arm machine to which, if I took off the blade, and slung the motor over, I could affix a sanding drum. It's helped me out of dozens of corners. Trouble is: no oscillation. Press too hard and a part of the abrasive surface clogs up with dust.



Next thing, it'll scorch and burn irremovable black lines into the workpiece. The only way to avoid this is with little darting movements so that the workpiece is gone before the sanding drum knows it's there. Nowadays I find the right size sanding sleeves to be unavailable, so this, my initial solution, is doubly defunct.

It becomes a design restriction. There's no point designing something you can't make, or can't make well. Every time an arc was called for, I had to stand up tall, look over

to the now dusty radial arm saw (it has been superseded by several other saws) and hope for the best, meaning that if I could avoid the hassle, I would. I've known for a long time that what I really want is an oscillating bobbin sander. Well, I ask you: who wouldn't?

Now I have one. Joy! A Triton oscillating bobbin



I was glad to see that the no-volt switch is a standard unit with no fiddly safety devices. It is recessed, which means that you have to feel for it rather than slapping your hand out in times of emergency, but again that is a small point, especially as I don't anticipate emergencies. The drums are  $\frac{1}{2}$ ,  $\frac{3}{8}$ , 1,  $\frac{1}{2}$  and 2in in diameter. It's a good range, opening up many possibilities. The belt attachment is of 3in diameter at one end and 1 $\frac{1}{2}$ in at the other making me think that the designers missed a trick. Why not make the small belt end 1 $\frac{1}{4}$ in to complete the range? The spindle oscillates over  $\frac{1}{2}$ in or so



The table tilts. This would be most useful when using the belt rather than the spindle (inset: you wouldn't would you?), but it would be good to have some sort of accommodation for guides and fences built into the table. The most common requirement would be for a right angle fence. Even a few threaded holes and a packet of bolts would be helpful. A pre-drilled strip of angled metal even more so. This sort of limitation is by no means unique to Triton

and belt sander. The first surprise was its size. I know the catalogue gives dimensions but I'd paid little attention to them and the photograph had no indication of scale, so I assumed it to be of a family with the neighbouring photograph of a portable model. Wrong. It is reassuringly large. It has a cast aluminium table (with angling facility) supported by a lot of Triton orange plastic, but here that is no bad thing. Sanding is not a heavy-duty operation but a gentle one, and



Dust extraction is essential, and the port is very efficient. I didn't notice any airborne particles, though almost inevitably, dust as fine as talcum powder collected in various quarters. The slots in the casing accommodate the collars required for the different sizes of drum



Another niggle, but a small one. So small you can hardly see it. On the left of the knob, below the black strap, a sliver of silver metal. This is the clip that locates in the pre-set notches for the tilting table – 45, 30, 22½ and 15° – but it is almost inaccessible. Using the nasty spanner to move the horrible clip does however work quite well so despite what my mother used to say, two wrongs can make a right. Wouldn't it be better to have a fully calibrated guide? I might want to sand at 16½° one day

I see no reason for cast-iron tables and steel substructures (unless, of course, you run a commercial joinery workshop and, if you're careful, not even then). The body of the sander is supplied with slots and beds for

all the accessories you're not using. It is said to be designed to be bench-mounted, but for me that would have been far too high for comfort. I sat mine on a convenient little chest of drawers. I could have fixed it on through the mounting holes provided, but there was no vibration when in use, and so no need.

It has two modes of operation. The spindle takes one of several drums fitted with an abrasive sleeve. Or it takes the belt attachment. Switching



An end stop. I suppose so, but I took it off and put it in a drawer. There might be occasions when it would be useful, but I wasn't going to use it on this project. I'd want to move my workpieces (like the little monastery or the lighthouse elements) minutely from side to side so as to meet a line, and this was best done unrestricted

from one to the other is quick and easy, though because the top of the spindle is faceted, locating the nut without crossing threads is fiddly. And the spanner that comes with it is a nasty pressed cranked thing that, in my hand, kept flipping off. Minor points. I've found far fewer bad points than good ones.

### Solid & no vibration

I hooked up my little dust extractor to the port under the table; checked that I hadn't done anything stupid, and switched it on. It's a beast with a roar! It comes with 80 grit abrasives that would take your fingertips off as soon as look at them (150 and 240 grit abrasives are available separately). I was planning some delicate work. Mmm. Wouldn't it be nice to have variable-speed? Perhaps a soft start? I'm being picky now: I will adapt. I'd rather it was meaty than weedy. It's not a quiet machine, but neither is it ear-defender loud. It is solid and does not vibrate in use. A few little things could be improved, but overall it is an excellent machine. I feel liberated! Curves are no longer beyond me! Now that I can sand all but internal corners, I might progress to producing French curves! Good heavens! Whatever next? ✂

### SPECIFICATION

No load speed: 2,000rpm  
 Oscillations per minute: 580pm  
 Power: 450W  
 L x W x H: 390 x 330 x 450mm  
 Weight: 12.9kg  
 Sleeve height: 115mm  
 Sleeve quantity: 6  
 Sleeve range: 13-76mm  
 Safety power switch: Yes  
 Sound power (LW): 89dB  
 Sound pressure (LP): 76dB  
 Table size: 370 x 295mm

Typical price: ~£180  
 Web: www.tritontools.com

TONY WILSON



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#### WHAT YOU'LL NEED

- A piece of wood
- Pencil
- Ruler
- Dremel 4300 or a similar multi-tool (RRP £139.99)
- Plunge router attachment (335) (RRP £34.91)
- Router bit (652) (RRP £8.65)
- EZ SpeedClic mandrel (SC402) (RRP £10.90)
- EZ SpeedClic sanding disc (SC413) (RRP £5.50)
- EZ SpeedClic: finishing abrasive buff 320 grit (5125) (RRP £6.04)
- Router bit (655) (RRP £18.12)
- Beeswax or lacquer
- Screws
- Plugs
- Drill
- Spirit level
- Safety gloves
- Dust mask
- Ear protection

#### FURTHER INFORMATION

If you're looking for more inspiration to get your creative juices flowing, then take a look at Dremel's website – [www.dremeleurope.com](http://www.dremeleurope.com) – full of projects and inspiration or follow Dremel on Facebook – [www.facebook.com/UKDremel](http://www.facebook.com/UKDremel) – for regular hints, tips and competitions

## ON THE SHELF

Follow this step-by-step guide from **Dremel**, which allows you to easily create your own floating shelf using a multi-tool and a range of accessories

**N**othing compares to the feeling of accomplishment when you've built something with your own hands, so why not have a go at creating your very own floating shelf? From routing the edges to treating the wood, follow this simple step-by-step guide from Dremel and you'll have your floating ledge ready in no time. ✂



**1** If you're keeping your floating shelf natural, choose a piece of wood with a nice grain. However, if you're planning to paint the ledge, opt for a sturdy piece of MDF instead. For this tutorial, we've chosen oak. The beautifully patterned grain gives a luxurious finish, but make sure you take your time when you rout and don't press too hard as this type of wood may burn. Another option is fir; a readily available and reasonably priced European wood. It's softer, which means it's easier to work with, but more prone to chipping



**2** The placement of the groove depends on how big the shelf is, but also what you plan to put on it. If you want to display photo frames, measure the width of your largest frame so the groove will be wide enough. We've chosen a width of about 4cm. Once you've decided where you want the groove to be, it's time to get drawing. Hold a ruler a few centimetres away from the edge. Next, take your pencil and move it simultaneously with your ruler to get a straight line along the length of the wood. You can slide your hand along as a guide for the ruler. Repeat 4cm away from the original line, and then connect the two lines for a clear outline. Now you're ready to pick up your router



**3** Clamp the shelf to the workbench. Insert the router bit 652 into your Dremel multi-tool and attach the plunge router. To guarantee the neatest result, use the edge guide that comes with the plunge router. Set the edge guide at the correct distance, and then set the depth of the plunge router to 3mm. For example, if you want a depth of 1cm, you'll have to rout the surface three times. For this project, the groove has a total depth of 0.5cm. When you first start with the router, hold the tool at a slight angle. Move slowly and wear the correct safety gear



**4** Now the outside edges are routed to the desired depth (let's call them the 'border'), it's time to remove the remaining wood. Remove the edge guide from the plunge router, and move freely, using the routed border as your guide. Move your tool in the same direction that it's rotating in; this way, you'll remove more wood than if you were to go in the other direction. Tip: moving in this direction also means the sawdust will end up behind (not in front of) where you want to rout



**5** Once you've finished routing the groove, it's time to sand the edges. Remove the router bit and insert the EZ SpeedClic mandrel (SC402) and an EZ SpeedClic sanding disc (SC413) into your Dremel multi-tool. The sanding disc lets you reach the bottom surface of the groove, and ensures you achieve a smooth finish. Next, switch to the EZ SpeedClic finishing abrasive buff 320 grit (5125) to sand the sides of the groove. Now, you've got a splinter-free surface on which to lean your picture frames against



**6** Now let's turn our attention to fixing the shelf to the wall. It's called a floating shelf, or a floating ledge, because, unlike traditional shelves, there are no brackets holding it to the wall. In place of brackets, you'll use a hand-held router to create keyhole-shaped grooves in the back of the shelf. These grooves then hook neatly over screws in the wall. If your shelf is a metre in length, four keyholes are best. Mark a hole 3cm from each end of the shelf, then mark a hole 28cm from each end. Use a ruler and draw lines where you'll soon be cutting the holes



**7** Set the depth to mirror the length of the whole working part of the bit. In order to slot the keyhole over the wall screws, the shape of the keyhole should face downwards. Start by routing a small circle – this will be the top of your keyhole. Due to the limited space, you won't be able to angle your router tool like in **photo 3**. Instead, make very small circular movements, and slowly rout through the wood. Once you've routed the entire depth of the circle, start routing the straight line towards the outer edge of the shelf (and away from yourself). This straight line will create the keyhole shape



**8** Now it's time to finish your handiwork with a topcoat of beeswax or lacquer. Beeswax is a natural product and sinks deeper into the wood to really bring out the timber's grain. Lacquer results in a hard topcoat, protecting the wood against UV light. This is a great choice if your floating ledge is in a sunny spot. With beeswax, you can use a paper towel or a piece of scrap fabric, while lacquer should be applied with a brush. The beeswax finish is matte, while lacquer gives a shine, so the treatment method really depends on the look you're after



**9** Before you fix your floating ledge to the wall, mark its position with a piece of masking tape. That way, you can stand back at a distance and see if the height works for you. Once you've decided on a height, hold the picture ledge against the wall and use a spirit level to make sure it's straight. Draw lines where the screws should go, drill the holes, put in the plugs, then the screws. Attach your floating shelf to the wall by pushing the keyholes down over the screws, so the shelf fastens firmly against the wall



**10** Congratulations! You've followed all the steps for this DIY project and your handmade floating shelf is up on the wall. You can put some nice frames or books on it – and you're all finished! All that's needed now is to stand back and admire your handiwork



A-Z

# WOODWORKER'S ENCYCLOPAEDIA PART 2

In this second instalment, **Peter Bishop** looks at everyday terms and phrases used within and about the timber industry

**A**wls, badgers and baulks' are a few of the fascinating bits of kit which can be found in many woodworker's workshops. I wrote a book all about small bandsaws a number of years ago, so, as you'll see, there's quite a lot about them, but hopefully that won't detract from the other interesting things described in this article.

### Architrave

These wood mouldings run up each side and across the top of a door frame to finish it off. They're part of the 'second-fix', along with other trims, when refurbishing or in a new build. An architrave can be made from one piece or built up from several. They're designed to cover any gaps between the door frame and the adjacent



Rounded and chamfered wooden architrave



Softwood bull-nosed architrave



Paul Sellers uses a bull-nose plane to remove the inside arris from a corner

plasterwork or other wall finishing. Some clever systems will include hidden channels for services to run in.

### Arris

An arris is the sharp corner where two faces come together. In general woodworking terms we often say 'with arris removed', meaning that the sharp corner edge has its point taken off. A slightly less sharp corner makes it easier to wrap paint round, for example, or simply make it feel smoother.

### Arris rail

If an arris is a corner you can see how this then applies to an arris rail, which is a triangular rail used in fencing. In most cases the arris rail is produced by cutting a square section diagonally



3.6m arris rail

through. You'll see these on fancy board fences where they are used as the rails. The wider, flat surface is the one onto which the boards or rails are attached. There are two main reasons for using an arris rail as opposed to a square or rectangular section. The first is that it is more economical and makes your wood go further, and the second is that it helps with shedding moisture; rain water should fall off the angled, top face.



Astragal moulding

### Astragal

Traditionally this is a plain or fancy, small moulding that is used as a shutting joint for cabinet doors. The astragal is fitted centrally to the second closing door and overlaps the first, thus covering any gaps. With most timbers used in cabinet work being dryer we tend to not use these mouldings so much. That's because there is less likelihood of shrinking, which could create a wide, unseemly joint. Larger astragal mouldings are sometimes planted onto a flat surface to simulate the impressing of panels.

### Auger

Any longish twist bit, for use in a powered tool or by hand, is generally called an auger. Larger hand



Antique 'T' handle auger hand drill



Simple awls for woodworking

boring tools with a 'T' handle fitted to the top of the bit are also called augers. These are generally used for site work when the holes can't be pre-drilled in the workshop. You can also find purpose-made powered tools that will bore larger holes in the ground for posts and some real belters that can be used on tractors, etc.

### Awl

A sharp pointed tool, just like a bradawl, for boring small holes in wood or leather and similar materials. A 'scratch' awl can be used like a knife to mark a timber surface.



Stanley FatMax 14in back saw

### Back saw

The most common of these will be the hand tenon saw, which has a strengthening rib along the top edge of the blade. The rib is there because the blade should be fairly thin and might flex in use. A thin blade should equal a narrower cut, more accuracy and less waste. You'll find there are other back saws in your kit bag apart from the tenon saw.

### Badger plane

A large rebate plane very similar to a Jack plane but the blade is the same width as the body so that you can cut into a rebate. The blade is usually set into the body like this to one side only, but not always. Badger planes come in wood or metal body variants. A useful bit of kit that can still be purchased today.

### Balk or baulk

A balk of wood is a large, squared off trunk. Imagine cutting the rounded sections off a log to create a square, big lump of wood. Hand-hewn baulks are usually referred to as this when they have faces that are larger than 230mm across. When cut in a sawmill this can be lowered to around 150cm. Logs may simply be balk cut to create posts for gates, beams for buildings, or any other heavy-duty structure.



A quantity of timber baulks and beams

### Balusters

These are the small section, vertical pieces that support the hand rail in a set of stairs. When they are turned from wood we tend to call them spindles these days. They don't have to be round; they can be square, flat or whatever shape you might make. They don't have to be timber, either; any suitable material will do.

### Balustrade

When the balusters are assembled and connect to the stair hand rail, the whole lot is so called. There are certain regulations applied when

spacing out the stair balusters to make a balustrade. The key point is that a child should not be able to get his or her head through. If you're making one, check with your local building regs department. Balustrades don't have to run up the side of a stairs; they can be a similar arrangement across an open landing, balcony, on a patio, or along the edge of some decking and made from a single or mixed set of materials. ▶



A. Mathieson & Son skewed badger plane



A selection of wooden stair balusters

**Bandings**

These are the narrow, decorative inlays in cabinet work. On antique furniture most of these would have been made from individual pieces of different coloured woods. Today there is a multitude of choice. A quick search online will throw up a range of bandings that are simple through to the most complicated. Used around the edge of a top or drawer they add a bit of style and enhance the overall appearance of any woodworking project.



Applying a thin veneer edgeworking

**Bandsaws**

This is a generic term for saws that have a flat, metal blade made in a continuous loop that runs around two or more pulleys. The bandsaw blade is manufactured from a strip of purpose-made steel that has been rolled in such a way that it will ride, under tension, on the crown of the pulley wheels without coming off. There's a 'black art' to achieving this that 'saw doctors' know all about!

The construction of the sawing rig may have two or possibly three pulley wheels. The pulley wheels are generally the same size but not always. One pulley wheel will be adjustable to tighten and help maintain the tension in the saw blade. Depending on the use that the machine will be put to these wheels can range from as little as, say, 30cm right through to some giants over 150+cm. A three-wheeled bandsaw will generally have two pulleys in line, vertically, and one offset. Two-wheeled bandsaws will have their pulleys in line vertically or horizontally.

The blades themselves will be joined in a length that fit over the pulley configuration and then allow for further tightening and tensioning. The strips of steel that the bandsaw blades are made from will vary in width and thickness. The first will provide strength for the appropriate use



A wooden balustrade

on a specific machine and the second to enable an efficient cut to take place. The timber business I joined, when I was 15, had a huge saw rig that ran blades of around 12m long and up to 40cm wide. It was a beast but, boy, could it cut some big logs!

Small bandsaws, with pulley wheels up to around 46cm or so, are ideal for any workshop making stuff from wood. You can also get metal and plastic cutting blades. Bandsaws are really versatile machines that will be able to cut and shape all sorts of different sizes of timber, etc. and, probably, one of the safest when you know how to use it.

**Bandsaw blades**

As we know, bandsaws come in all sorts of sizes and configurations but the ones we're most likely to be interested in are what are classified as 'small'. My definition of small is a bandsaw that uses a blade that is 25mm or less in width. Generally these will also equate to the pulley wheels being 24in or less, say 60cm, in diameter.

The blades you use for every day cutting will be made from a single type of steel with the teeth cut and sharpened ready for use. Some blades will be 'bi-metal'. This means that they have a harder front edge, where the teeth are shaped and cut. This harder leading edge will maintain the sharpness of the saw teeth for

longer. The blade length will be determined by the distance around the two or three pulley wheels your machine has. It's important to only fit blades of the correct length. They can then be tensioned and tracked correctly to run and cut efficiently.

The range of blades, their different teeth shapes and uses, are extensive. General purpose blades will do for most work but if you are cutting abrasive hardwoods you might consider those with hardened tips. Buy the blades to suit your budget and use. I tend to run a fairly wide saw all the time on my machine, probably a 3/4in one (18mm), but I'll switch this for intricate or stuff outside the norm.

If you are cutting curves and shapes, then one of the other key factors is the width of the saw blade in relationship to the size of arc. The set on your saw blade cuts each side of the body to create the clearance that allows it to move through, continue cutting and turn when required. With a wide blade on the saw you can only cut a big curve before the blade binds. Obviously you may make some relief cuts but this will not give you such a smooth, uniform surface. So for tight, intricate work you will need some narrower blades. These, of course, will break a lot easier so take care when using them. When you do break a blade in use it makes an awful noise but comes to a stop quickly and shouldn't cause a problem; just switch the saw off as quickly as you can! ✂



An assortment of bandsaw blades



Axminster Hobby Series HBS200N bandsaw

**NEXT MONTH**  
In the next issue, Peter looks at a variety of woodworking terms, from barge board to bench hook



Hammer N3800 14in bandsaw

# WIN! 1 OF 10 DICKIES DENNISON T-SHIRTS – WORTH £21.50 EACH



To celebrate the recent launch of their 'Hard Working Since 1922' range, Dickies Workwear is giving 10 lucky readers the chance to win one of their Dennison T-shirts

Global workwear brand Dickies has recently unveiled a new product range aimed at younger tradespeople, inspired by its 96-year history.

Launched under the banner 'Hard Working Since 1922' – the year in which Dickies was first established – the collection includes T-shirts and

beanies, plus a puffa jacket, fleece and sweatshirt. Design details used in the range include the classic Dickies horseshoe logo and colours influenced by the company's branding from previous decades.

"This latest collection celebrates our proud heritage as a workwear provider, while

incorporating a style that's very much of the moment," said James Whitaker, Marketing Director. "As such, we're expecting strong demand from younger tradespeople and those who take a trend-driven approach to their workwear – who don't just want to be fashionable at the weekend.

"While each item in the range naturally works well as a leisurewear option, all products have been created to our very high standards of quality, ensuring they provide the comfort and durability needed to support tradespeople at work."

The T-shirts are available in a number of colour-ways (black, navy blue, royal blue, grey and orange) and further information about the range can be found by visiting the website – [www.dickiesworkwear.com](http://www.dickiesworkwear.com).

#### SPECIFICATION

- Made from 100% cotton, giving the T-shirt a rich & comfortable feel
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- Crew neck
- Fabric: 100% cotton, 180gm<sup>2</sup>

#### HOW TO ENTER

To be in with a chance of winning 1 of 10 Dickies Dennison T-shirts, just visit [www.getwoodworking.com/competitions](http://www.getwoodworking.com/competitions) and answer this simple question:

**QUESTION:** Name one of the colour-ways the Dennison T-shirt is available in

The winners will be randomly drawn from all correct entries. The closing date for the competition is **5 April 2019**

Only one entry per person; multiple entries will be discarded. Employees of MyTimeMedia Ltd, Dickies Workwear and saintnicks are not eligible to enter this competition



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# ME AND MY WORKSHOP

Tony Bryant



Tony working on one of his restoration projects

Retired head gardener Tony Bryant's spare bedroom workshop contains all he needs to continue his woodworking journey

**1. What is it – and where is it?**

It's the spare bedroom in our bungalow in Worcestershire.

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

Having just retired I can go in and enjoy my hobby with no time limits.

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

The size, as it can get a bit cramped if I'm working on large items.

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

Very, it's where I can create projects from drawing through to seeing the finished item.

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

I restore old writing slopes and tea caddies, but I also make wooden toys for my family.

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

Always clear up. As space is tight, I do this after every stage of a project.

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

My bandsaw, as I use it all the time.

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

My dovetail saw. It's old but still cuts as good as the day it was made.

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

Ignoring my own advice and not clearing up and getting sawdust on new French polish.

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

A rocking horse for my grandson.

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

I made a hanging basket for my gran when I was about seven and it fell apart when it was hung up, but she still said she loved it!

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

Take your time, have a cup of tea and go through every stage in your mind before starting it. Also, always ensure to measure twice before cutting.

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

An extension. ✂

**NEXT MONTH**

In the next issue, we step inside the workshop of Cornish furniture maker, Carl Austin. We'd love to hear about your workshops too, so do feel free to send in a photo of your beloved workspace, and please answer the same questions as shown here – just email [tegan.foley@mytimemedia.com](mailto:tegan.foley@mytimemedia.com)

# MILLWRIGHTING

## THERE'S MORE TO IT THAN A DAY'S WORK

**John Greeves** talks to **Malcolm Cooper** about his work as a millwright with particular focus on the Bursledon Windmill restoration

**M**alcolm Cooper grew up in Calne but has lived in Melksham for the last 35 years. At an early age he always had a passion for mills and old machinery. After leaving school he took an engineering degree. He initially worked for a museum consultancy based in Derbyshire and Bristol, and he also worked at Blacklands Mill in Calne for 20 years, a watermill which produced 30 tons of flour a week. After his first son was born in 1985, he decided to form his own business, Carom Water Crafts. One of his first clients was the proprietor of Blacklands Mill where Malcolm restored the ancient turbine to working order.

The business grew and now Malcolm has restored, built or maintained up to 200 mills (both water and windmills) in addition to undertaking various other projects in the last 40 years. Two of his sons have also joined the team. As well as private owners and trusts, Malcolm and his team have undertaken works for National Trust, The Society for the Protection of Ancient Buildings and other projects in conjunction with English Heritage and other interested bodies.



1 Bursledon Tower Mill, Hampshire

Photographs and diagrams courtesy of Hampshire Cultural Trust, unless otherwise stated



Malcolm covers a range of trades from 'dressing' or re-cutting millstones, fabricating timber parts, getting casting done, undertaking machinery work and design. His versatility ranges from making anything new like a waterwheel, to cast-iron working and fabricating timber using traditional skills. At the other end of the spectrum, he can also undertake the modern installation of a hydroelectric turbine.

There's always the unexpected in his work; while repairing a waterwheel at the Gower Heritage Centre, he was asked to replace some of the mill timbers, then to repair a traditional apple press followed by a request to sort out a Lister Engine after several people had tinkered with it and failed to get it running. It's all part of a day's work and there's no reaching for an off-the-shelf manual to solve these challenges.

As a traditional millwright and a member of The Society for the Protection of Ancient Buildings (founded by William Morris in 1870), Malcolm subscribes to the importance for the proper repair, conservation and maintenance of historic machinery, windmills and water mills, which combine well-proven principles in the conservation and maintenance of these historic buildings.

### Bursledon Windmill – Hampshire

The Bursledon Mill restoration carried out in 2014 encapsulates many of the demands placed on a millwright to ensure good practice (**photo 1**). Woodworking here is often on a mega scale and the ingenuity and expertise needed to fit these huge timbers often comes with an expertise honed over many years. Work of this nature involves planning, working with different bodies, both at a local and sometimes national level, as well as always ensuring a high standard of workmanship. As an outsider, it's hard to imagine the sheer size and scale of the timber used in some of these projects.

Take the Bursledon mill in Hampshire, which was built between 1813 to 1814. It's one of the many restoration projects Malcolm has encountered in the past with its own unique challenges. The mill is a rare surviving example of a traditional tower mill with a five-storey circular brick tower with tapering sides. Around the first floor level of the windmill is the reefing stage (**photo 2**); a circular platform accessed from the millstone floor level.

From here the miller would be able to pull the brake rope, adjust the sails and also operate the endless chain gear to position the cap so that



**2** Reefing stage to adjust the sail. Sail cloths open to catch the wind

**3** Unique cedar cap that looks like an inverted hull

working windmill in England that retains a complete wooden windshaft (others often having a cast-iron poll end and a timbered shaft).

The milling process at Bursledon is typical of English flour mills built before 1870. The mill had a relatively short working life and eventually became derelict in 1907. The original cap, sails, chain gear and gallery disappeared but were later restored by the Hampshire Building Preservation Trust between 1978 and 1991. What really saved the mill was a flat roof put on over the remains of the old cap, which preserved the interior for several decades, including the original wooden windshaft.

In 2012, a major two-year restoration to the windmill began, supported by a Heritage Lottery Fund grant with Malcolm being involved in the second phase. The historic significance of the mill had been recognised in 1983 when it was awarded a Grade II listing. This meant the building was more than special interest and had a higher level of protection than a Grade II.

The decay discovered in the mill's wooden windshaft led to a decision to remove the sail frames for safety, leaving just the stocks in place. This was carried out by Ian Clark Restoration (photos 4-6).

The second phase didn't take place until 2014 when the work was undertaken by Carom Water Crafts and led by Malcolm Cooper. The remit involved removal and renewal of the windshaft, refitting the stocks and making and fitting new

sails. Timber for the windshaft was to be sourced from S.C Soffe & Sons Ltd of Cadnam in the New Forest. The Windmill restoration was managed by a number of interested bodies. The newly formed Hampshire Cultural Trust took ownership of the mill with joint management arrangements involving Eastleigh Borough Council and Bursledon Parish Council, which defined the core purpose to be that of a working mill, which operated both as a visitor attraction and an educational resource.

### Overview & preparation for removing the old windshaft

The windshaft is the central shaft, which projects externally through the tower and through which the stocks (heavy timbers) are fitted at right angles to one another (Fig.2 – A). These carry the lattice frameworks of four 'common sails', which have canvas covering them. The massive windshaft is integral to the mechanism within the mill and carries a wooden brake wheel that rotates as the sails turn outside the mill (Fig.2 – B). The brake wheel engages with the wallover on top of the main shaft, which extends down three floors to drive the millstones (Fig.1).

Malcolm had contemplated using a cherry picker to remove the old windshaft but a better alternative was provided by Hampshire County Council maintenance team contractors who provided the scaffolding. "At a stroke I didn't have to worry about a cherry picker and that lack

the sails face into the wind. The five floors of the mill include the ground floor, the hurst floor, the stone floor (containing the mill stones), the bin floor and dust floor. Above this is the cap where the windshaft and brake wheel lie within.

The mill retains a complete set of wooden machinery, some of it original and some of it replicated in new timber. The mill displays many unique features including a cedar cap, which looks like an inverted hull of a boat (photo 3); this is manually turned to face into the wind instead of using the later-adopted automatic fantail. Bursledon mill is also believed to be the only



**4** Removing the sails  
Photographs courtesy of Ian Clark Restoration



**5** Here a cherry picker is used to carry out 'operation cherry picker'



**6** Sail supported as it is removed from the stock

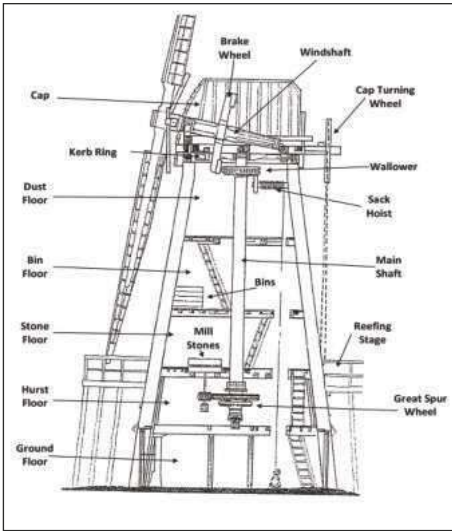


Fig.1 Key components of the windmill

of space," said Malcolm. Scaffolding was better as it provided accessibility to both sides of the sails. The sails had already been removed leaving the stocks (the large timbers passing through the poll end to which the sails are bolted) behind. Scaffolding was also erected inside the cap of the mill to give lifting points for the removal and replacement of the new windshaft.

During this time, Malcolm met with the Winchester architects and the skilled operators to select an oak timber for the new windshaft. Initially, one trunk was chosen but was rejected by them as being too small. A second trunk proved to be suitable and was cut by a long bed



9 The new windshaft is worked on the lathe poll end – bearing and tapering clearly visible  
Photograph courtesy of **Carom Water Crafts**



7 Where the stocks are fitted at right angles to one another  
Photograph courtesy of **Luke Bonwick**

programmable saw. The block weighed around a ton and was transported back to Wiltshire where Malcolm and his team set up a special lathe where they could "turn the windshaft around and work it from any position. We referenced all the dimensions from the old one, then we machined it in various ways," continues Malcolm. The timber was green but as Malcolm explained: "It's a catch 22 situation: if you use it too dry, it absorbs moisture, expands and creates vast stresses."

**Shaping & fitting the windshaft**

The shaft has distinctively shaped sections running along it. At the poll end (front) there is a square section that protrudes externally out of the tower. Into this are cut the 12in square mortises at right angles to each other, through which the stocks that hold the sails will later be inserted (photo 7), then comes the round section



10 The old shaft stripped of its metal straps, etc. Tail bearing cut out  
Photograph courtesy of **Luke Bonwick**



8 How the windshaft will be shaped using the old one as a pattern  
Photograph courtesy of **Luke Bonwick**

with steel shaped strips set in for the bearing, then there's octagonal tapering, tapered to another square section for the brake wheel to be wedged on. This is followed by the last shaped section to the tail bearing (Fig.2 – A). Various tools were used during the making of the windshaft, including chainsaws, routers to cut the slots for the metal bearing strips, a chain mortise chisel to cut the holes for the stocks to go through and power planes for extra finishing, as well as belt sanders to remove the final plane marks.

"It was a very good shape and matched in all areas," Malcolm tells me. "It involved very careful measurements and I was really pleased with the outcome. The timber shaping work had taken about a week including the re-fitting of metal components, which had been removed from the old windshaft." These included the metal clamping at the poll end, iron bars fixed into the shaft for the main bearing, the tail bearing (a 3in diameter shaft), with rings to hold this in place and several other smaller metal components.

Installing a new windshaft involves lifting and manoeuvring an object of about a ton, so it's properly aligned within the exact manner as the former windshaft. Using block and pulley, the team was able to support the brake wheel while they lifted the old windshaft out with the crane. They then installed the new windshaft. The process is the reverse of taking the old shaft out with the crane lifting while two team members work on the outside and two members inside, using pulley and block to carefully guide the new shaft into position. The brake wheel is wedged

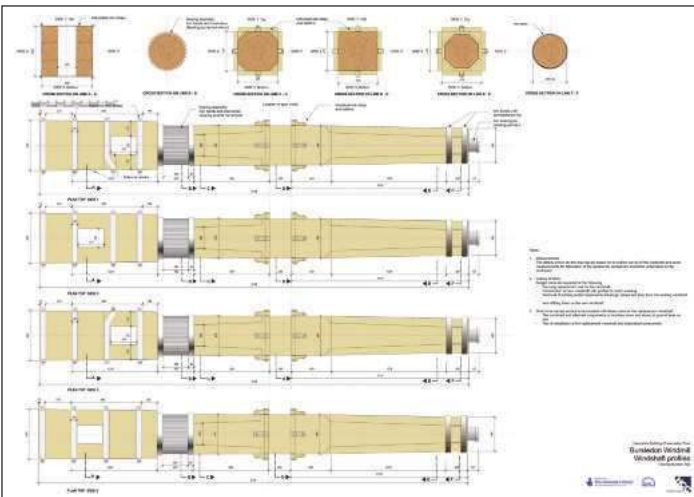


Fig.2 – A Drawing of the windshaft

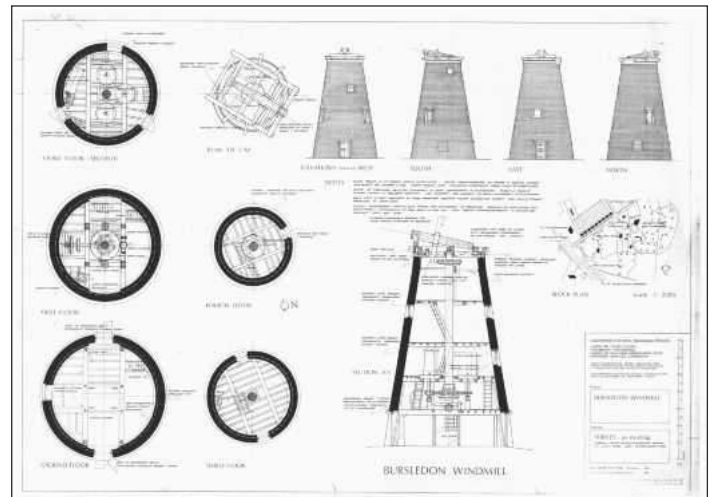


Fig.2 – C Internal and external features of the windmill



**11** Here you can see the lattice work on the sail, with sailbars, uplongs and windbar with triangular backstays just visible

back on and wedged into position. The alignment is critical. Malcolm used a series of small homemade jacks to accurately adjust the brake wheel. As he explains: "These specially made jacks helped us to move it to the exact position." Once the windshaft was in place the crane lifted up the reused stocks. These comprised of two long lengths of timber, which passed through the mortises set at right angles to one another. The stocks were then wedged and clamped.

### The sails – overview & construction

Each sail frame is made up of a lattice work of timber and needed to be replaced because they had rotted (**photo 11**). Pine is used rather than oak, which is lighter and more functional for the purpose. The lattice work is made of a series of members. The whip is the principal longitudinal member of a sail. The sail bars are timbers set at right angles, which are mortised through the whip and then carry through to be bolted to the windboard whose function is to bring the wind on to the sail. The Uplongs are the longitudinal timbers bracing the sail bar members, which are bolted to the sail bars. The backstays triangulate the back frame to the rear of the stock to give the sail rigidity. The Bursledon mill has four 'sail cloths' made from canvas, which run on a little bar (like a curtain rail) so they can be altered by the miller from the reefing stage according to the wind strength.



**12** Scaffold tower in front and scaffolding behind so you have good access when fitting the sails  
Photograph courtesy of **Luke Bonwick**

Malcolm recounts how the sail frames were built: "We painted all the components before cutting and assembly, we then cut all the mortises using a chain mortiser, which are often used by oak framers producing their frames; these are made at changing angles to produce the twist or weather in the sail. We then fitted all the sail bars, uplongs and wind board onto the whip. The four completed sails were hoisted in turn onto the two stocks and attached with bolts and 'U' bolts. Both the stocks and sails were all fitted in one day with a crane" (**photos 12-14**).

Malcolm along with the Carom Water Craft's team completed the whole restoration in a matter of 12 weeks. Over the summer I saw a person wearing a T-shirt with a logo that read 'On the 8th day God Created Millwrights.' Not such an idle boast when you delve into the world of Millwrights and look at the many projects they undertake. It's only then you really appreciate the multiplicity of skills involved, along with the expertise and dedication given by these craftspeople in keeping alive a working heritage that stretches back through the aeons of time. ✂



**13** Crane lifting up sails to be attached  
Photograph courtesy of **Luke Bonwick**



**14** Finally finished as evening draws in to complete the sails  
Photograph courtesy of **Luke Bonwick**

### FURTHER INFORMATION

#### Malcolm Cooper Master Millwright

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Email: carolac71@msn.com

#### Ian Clark Restoration

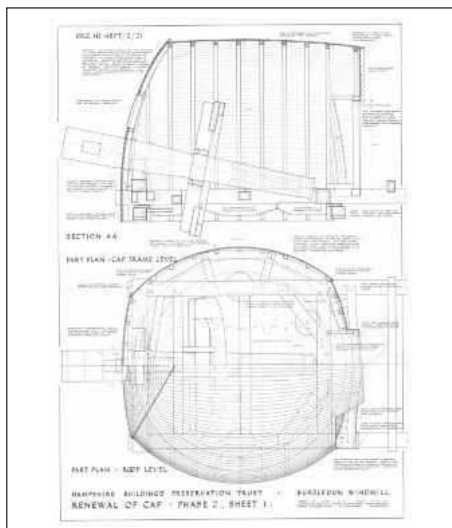
Web: [www.ianclarkrestoration.com](http://www.ianclarkrestoration.com)

#### Luke Bonwick

(Bonwick Milling Heritage Consultancy)  
Web: [www.bonwick.co.uk](http://www.bonwick.co.uk)

#### Bursledon Windmill –

Hampshire Cultural Trust  
Web: [www.hampshireculture.org.uk/bursledon-windmill](http://www.hampshireculture.org.uk/bursledon-windmill)



**Fig.2 – B** Drawing of cedar cap showing the massive windshaft, which carries a wooden brake wheel



**15** The wind shaft fully fitted inside the mill

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## AROUND THE HOUSE WITH PHIL DAVY



Whatever happened to good old customer care? Having stored a brand-new fridge freezer in its packaging until ready for installation in my new kitchen, I was shocked to discover a corner badly dented when unpacked. On contacting the retailer I was told nothing could be done as it was outside their 30 day terms and conditions limit. Checking the Consumer Rights Act, there's actually six months to report a problem. Eventually I was informed a new fridge freezer had been ordered for delivery in early January. Up until this point it had been a real battle to get anywhere with the retailer, who never offered an apology. Their Customer Care(less!) department was really unhelpful, accusing me of being rude and undermining them when I asked if they were aware of the 2015 Act! Thankfully, the replacement appliance is now up and running. I can think of one or two unhelpful woodworking retailers historically, but hopefully this is now a thing of the past in our industry.

### BOOK REVIEW THE SURFBOARD



Subtitled *How Using My Hands Helped Unlock My Mind*, this is not a woodworking book as such. In fact, you may be disappointed if you're hoping for a blow-by-blow account of building a surfboard. The author is not a woodworker and freely admits at the start that he owns no tools and is incapable of making anything. A brave confession to make, but then as CEO and co-founder of crowdfunding book publisher Unbound, he's already achieved more than many of us.

He sets himself the challenge of building a 7ft surfboard at the Cornish workshop of James Otter (see 'Me & my workshop' Oct 2018). Anyone subjecting themselves to any five-day

practical course will probably explain just how intense the experience can be, particularly if they rate their practical skills as almost zero.

'Just wood, my hands, a teacher and me,' Kieran says about the task ahead as he journeys westward to Cornwall. Over the following five days he describes the skills he rapidly acquires during the making of the board. As a non-woodworker Kieran becomes totally immersed in the process, which becomes life changing in a sense for him. Actually, there's a good deal about this very specialised form of woodwork, from getting to grips with a hand plane to using a Japanese saw and gluing up. He describes the sanding procedure as joyful, which I found amusing!

#### A quirky book well worth a read

There are a handful of black and white photos dotted about, showing the board's progress in the workshop. Nothing glossy or cheesy, just appropriate. So, a quirky book that's well worth a read. It may change your

perspective next time you're considering a project that initially seems daunting. And if you're familiar with the north Cornish coast you'll be aware of just how miserable the weather can be in mid summer, even more so when camping!

#### THE VERDICT

Dan Kieran,  
published by Unbound

Price: £9.99

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

Rating: 4 out of 5

### Q&A: FLOOR FINISH



**Q:** After reading the March issue, I'm considering laying an oak floor but would prefer to use bare, untreated timber. Can you suggest a suitable finish for this, please?

**M Stannard**, via email

**A:** I'm assuming you'll be using engineered oak boards, rather than solid timber. The two main options for sanded floors are oil and lacquer, or varnish when applying by brush. It really depends on the room where the floor is to be installed. In high use areas, such as a kitchen, a varnish will be more durable and able to withstand water spillages better. On the downside, once varnish becomes scratched or damaged it's not so easy to repair. An acrylic, water-based finish will dry quickly, though brush marks are more likely than with a solvent-based varnish. Both gloss, satin and matt finishes are available, though even a matt varnish will leave a slight sheen.

If you're after a more natural, matt appearance then an oil finish is recommended. Oil sinks into the timber, rather than sitting on the surface as lacquer or varnish does. Although not as durable as varnish, it's easier to refinish small damaged areas. When a lacquered or varnish floor starts looking tired, you'll need to re-sand it before refinishing.

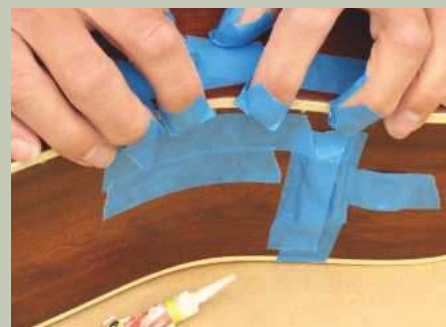
For either type of finish you obviously need to make sure the floor is sanded, down to about 150 grit. There's no need to go finer than this. Vacuum the area thoroughly before applying the finish. And don't forget to allow yourself an escape route when brushing, rather than working yourself into a corner!

# TOO MANY CRAMPS?

Whether you call them cramps or clamps, it would be hard to think of a workshop without them. Some woodworkers would suggest these tools seem to breed, with their tendency to multiply. Some workshops are teeming with them and with such a wide range of cramp formats on the market, there must be one for virtually any job you could think of. It's hard to imagine working without them. Except that sometimes you should. Or at least they become secondary tools, the support act, if you like. So what are some of the alternatives?

## Masking tape

Let me fly the flag here for masking tape. It's pretty handy stuff, but how good is it when it comes to gluing up and holding things tightly together? Luthiers, box makers and cabinetmakers have been using tape since time began, and for certain jobs it can't easily be replaced by cramps. Cheap, lightweight and surprisingly strong, it does vary in quality, though I've found the blue tape seems to be slightly more durable than the traditional white stuff. To be honest, I've not noticed which brand I buy. You probably get what you pay for, though. For musical instruments such as the acoustic



Using CA adhesive when fitting plastic bindings into rebates around a guitar body means you really don't want the stuff on your fingertips



Even lightweight cam cramps (ideal for many tasks) have a habit of sliding about

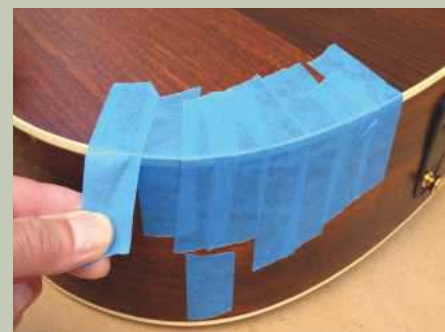
guitar family, curved surfaces and contoured edges are the norm. Body repairs can be tricky, especially if the instrument has been dropped. At times it's downright impossible to steady a cramp in position, let alone tighten it adequately. Even lightweight cam cramps (ideal for many tasks) have a habit of sliding about, and when you can prevent this happening there's a danger that too much pressure will harm the structure as you tighten up. Although a guitar's soundbox is surprisingly sturdy, it can be damaged if you're too heavy-handed with cramps.

Masking tape is often the answer for such tasks. Pulling strips tightly around a glued edge will often provide just enough pressure. Overlapping strips are perfect when gluing binding or purfling into routed rebates, whether this is on instruments, boxes or fine furniture.

Tape is useful for holding shaped cauls temporarily in place while positioning a cramp, too. I've even used masking tape to protect my fingers when disposable gloves were unavailable. Using CA adhesive when fitting plastic bindings into rebates around a guitar body means you really don't want the stuff on your fingertips.

## Wedged tenons

It's not just tape that can be indispensable. Joinery items such as doors and gates are traditionally constructed with wedged mortise & tenon joints. Although commercially produced joinery may take short cuts with dowels and suchlike, these joints have stood the test of time on exterior woodwork.



Overlapping strips are perfect when gluing binding or purfling into routed rebates, whether this is on instruments, boxes or fine furniture



Tape is useful for holding shaped cauls temporarily in place while positioning a cramp, too

Not only are they straightforward to make, but you don't necessarily need heavy steel sash cramps across the framework while the glue dries.

On occasions I've used homemade cramps that pull frame joints together tightly and quite adequately. You do need substantial timber for this, but blocks screwed across the sections at right angles enable you to tap in wedges to pull the rails and stiles up tight. Then you can drive wedges into your prepared mortises while the glue dries. Simply saw off the excess tenons and wedges and clean up with a plane.

I'm the first to use a cramp when necessary, but perhaps we take them for granted. Maybe we don't actually need as many as we think...



Joinery items such as doors and gates are traditionally constructed with wedged mortise & tenon joints



Simply saw off the excess tenons and wedges and clean up with a plane



## WINTER PROJECT WINDOW MIRROR

**Takes:** One weekend

**Tools you'll need:** Circular saw, drill/driver, router and bits, jigsaw, sander, drill stand, bench planes, pocket-hole jig

# OPTICAL ILLUSION

With some cunning fakery Phil Davy conjures up an extra view

A small room can often benefit from having a mirror hanging on the wall to reflect the light and make the space seem bigger. Not everyone is comfortable with mirrors as such, so an unusual alternative is to create the illusion of having another window in the room. This is easily achieved by building a frame, using mirrored glass with fake glazing bars planted on. One or two pot plants on a shelf at the bottom will add interest and give a hint of the outdoors.

Mirror glass is quite expensive if you order it to a specific size, though I found several good-sized offcuts at my local glass merchant. For a couple of quid a piece this seemed a pretty good deal. At 6mm thick it's heavy stuff, so the frame must be solidly built. Instead of biscuits I decided to use pocket-hole screws, using PVA glue on the joints as well. It's essential that inner edges of the stiles are planed dead square before assembly, otherwise the frame will be distorted.

Don't assume that edges of new PAR timber will be exactly at 90°! I made the frame from 100 x 25mm PAR softwood, while the bottom rail is wider to allow for the plant shelf.

### Planting ideas

I found some small galvanised steel plant pots in IKEA, though you could use traditional terracotta versions if you can find some small enough. The smallest pots I sourced were about 75mm in diameter.

The shelf needs to be sturdy enough to support these when filled with soil and plants. If you intend using real plants it's best to drill a few small holes in the bottom of each pot to allow for drainage, otherwise they will become waterlogged. You would need to adapt the design so that the pots actually sat on a tray beneath, so preventing water dripping onto the floor. Alternatively you could simply use artificial silk plants or

flowers, which can look pretty convincing these days. Use a suitable glazing sealant for fixing the mirror securely into the rebate. Make the glazing bars a tight fit and there's actually no need to stick them to the glass. If they're loose, though, add a few dabs of sealant to the back or even use hot-melt glue. It's easier to paint the frame before adding the glass. I used a favourite indoor finish – General Finishes Milk Paints (Millstone).

### Garden feature

With some adaptation this mirror project could even be used as a feature in a small garden, but if so make sure the timber is treated with a suitable preservative first. You would also need to make the back of the frame weatherproof, otherwise the mirrored glass would probably deteriorate over time. One suggestion would be to clad the rear with exterior ply, then add lipping or moulding to cover the edges.



**1** Measure the mirror glass and decide how the glazing bars will best divide up the area



**2** Saw timber for the frame. Plane the ends of the top and bottom rails dead square on a shooting board



**3** Stiles and rails are joined with pocket-hole screws. Drill each rail using a dedicated jig



**4** Brush PVA glue onto adjoining surfaces and assemble the stiles and rails with pocket screws



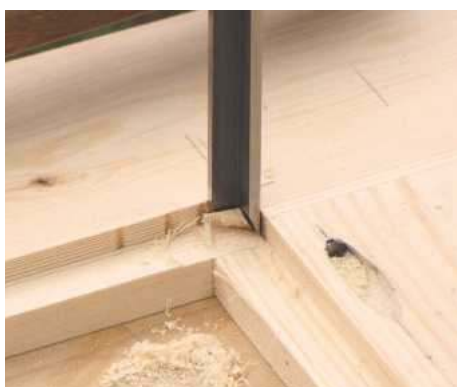
**5** When the glue has dried, saw off the horns and trim the end-grain flush with a bench plane



**6** Clean up the front of the frame, using a straight-edge to check surfaces are true



**7** Rout a 7mm-deep rebate around the inner edge of the frame, using a fence or guide rail



**8** Use a sharp chisel to square up rounded corners where rebates meet. A corner chisel is perfect



**9** Check that the mirror glass fits into the frame. There should be a slight gap to allow timber to move



**10** Make keyhole slots in the rear of stiles for screws. Use a Forstner bit, straight and dovetail router bits



**11** Before fitting the front shelf, sand the face of the frame ready for painting



**12** Check the spacing of plant pots, then cut the shelf to length and width and drill for pocket screws



**13** Mark circles with a compass and cut out carefully with your jigsaw, staying just inside the lines



**14** Check the container fits snugly, adjusting the hole diameter for the amount of projection



**15** With a sanding drum mounted in a drill stand, clean up the container holes



**16** Cut out two shelf supports with the jigsaw. Tape together and tidy up curves with the sanding drum



**17** Drill and counterbore holes for support brackets. Glue and screw, cramping to keep everything square



**18** Check the position of the shelf on the frame, then drill from the rear. Add glue, cramp and finally screw together



**19** Glue matching softwood plugs into pocket holes on the rear, plus counterbored holes on the shelf



**20** Cut off projecting plugs with a flush-cut saw when the glue is dry. Trim with a block plane



**21** Saw glazing bars to length and mark out the halving joint. Cut the joint and check bars fit together



**22** Brush on two coats of paint or suitable exterior finish, if using the mirror outdoors



**23** Run a bead of glazing sealant around the rebate and carefully bed the glass in place



**24** Drill and plug the wall for fixing screws. Hang the mirror in place and add plant pots



## LETTERS

## ★ LETTER OF THE MONTH



Geoff's version of Gilly the Giraffe

## GILLY THE GIRAFFE – MK.2

**Hi Tegan,**

We spoke briefly at the Harrogate Show and I said I would send you some photos of my version of Gilly the Giraffe. My granddaughter, Evie, who is two, loves it and insisted all the family had to have a go.

I used oak worktop for the body and solid beech for the rails. The beech came from a company listed in your timber directory, Tree Station, who are based in Manchester – a Social Enterprise who recycle trees from a 50 mile radius. I bought a slab of partly spalted beech – 10 x 2ft x 2in thick – for a lot less than I would have paid at a commercial timber supplier. This organisation would make an interesting candidate for a feature on using local timber and working with the community.

Please keep up the good work with the magazine; I like the variety and range of topics you cover.

Regards, **Geoff Ryan**

*Hi Geoff, thanks so much for your email and yes, I do remember meeting you at the show! It's great to see your version of Gilly – what a fantastic job you've done! I've passed your email on to the author, Grace Silverwood, who I'm sure would love to see how you've interpreted her original design.*

*Thank you again for your kind comments regarding the magazine and I hope we can continue to entertain you with our range of articles.*

*Best wishes, Tegan*



We love the routed details on the rockers, which help to add personalisation to the design

## ERRATA

Apologies to any readers confused by errors in part 3 of Michael Forster's 'The joy of dovetails' article in the March 2019 edition. On page 42, the caption to **photo 1** refers to setting the tail piece in the vice. This should be the pin piece. The error is repeated in the text referring to that image. Apologies for this error

## VALUING OLD TOOLS

**Dear Sir,**

I enclose here a photo of some old tools – a metal jack plane, one other small, a big heavy, solid metal plane at least 100 years old, wheel measure and cart and coach wheels, plus one other plane for making windows and old doors.

For insurance purposes would you be able to give me an idea of their value?

Yours sincerely, **John L Webster**



John Webster's collection of old tools, including an iron smoother and some wheelwright's travellers and old doors.

*Dear John, the large Stanley plane is worth between £30-50 depending on condition. The older style iron smoother could be worth £50, again depending on condition. The two circular devices are called wheelwright's travellers and are worth between £10-20 each. The wooden plough is worth £20. The three smaller planes have very little value. I hope this is helpful.*

*Kind regards, Tony Murland*

Please note that the next auction held by Tony Murland Antique Tools will be on 4 September – see [www.antiquetools.co.uk](http://www.antiquetools.co.uk) for further information.



Ironbridge in Shropshire, showing, among others, the use of dovetail joints

## WOODWORKING TECHNIQUES THROUGH THE AGES

**Dear Tegan,**

I really enjoyed the article about the use of woodworking techniques and joints in the construction of Stonehenge (Edward Hopkins' 'End-grain', Dec 2018 issue). Many centuries later, they again used the same logic in the making of the Ironbridge in Shropshire. You can clearly see, among others, dovetail joints being used. So it's true, woodworkers do get everywhere!

Best wishes, **Chris Meredith**

*Hi Chris, thanks for your email. I have also passed this on to Edward as I'm sure he'd be interested in your observations. As you say, ancient techniques appear in all kinds of places and although becoming refined over time, the age-old methods still hold true. Thanks again for taking the time to write in.*

*Best wishes, Tegan*

## READERS' HINTS & TIPS

For the next 11 issues, in conjunction with Veritas and BriMarc Tools & Machinery, we're giving one lucky reader per month the chance to get their hands on a fantastic low-angle jack plane, worth over £250! Ideal for shooting mitres, working end-grain and initial smoothing, this must-have hand tool also features a combined feed and lateral adjustment knob for fast, accurate changes to depth of cut. To be in with a chance of winning this fantastic piece of kit, just email your top workshop hint or tip to [tegan.foley@mytimemedia.com](mailto:tegan.foley@mytimemedia.com), and if you can, please also attach a photo illustrating your tip in action. Good luck! To find out more about Veritas tools, see [www.brimarc.com](http://www.brimarc.com)

### UTILISING RECLAIMED TIMBER



Graham's table makes excellent use of reclaimed hardwood surrounds, which are often discarded by double glazing companies



This smaller table is another lovely example



As Graham rightly says, the grain figuring on the top of the smaller table is amazing

Hi Tegan,

Good hardwood timber is so expensive these days. I asked two double glazing companies what they did with the hardwood surrounds that they took out from old double glazing, and the answer was to skip or burn it – what a waste! They now deliver it to me; the old mastic needs cleaning off and you have to watch the nails and screws. If I find a difficult one, I use a plug cutter to go round it and fill at a later date if needed. I also take the old doors and cut them down. Some of the timber has been fantastic: old mahogany, teak, oak and ironwood. I think this is a great way to recycle the reclaimed timber and it's all free. Attached are a couple of photos showing a few tables that I made using the reclaimed timber. The only wood I bought was the ash to lighten the finish of the top. I think the grain in the small table is amazing.

Kind regards, **Graham Horton**

## COPYING FINGERS

Hello Tegan,

I enjoy the magazine, which is so tastefully produced. My current interest in woodturning is not only candlesticks but spindles for old furniture, which invariably have parts missing. Les Thorne's article on turning matching candlesticks (Feb 2019) was most helpful. The problem I have, because of my eyesight, is turning matching articles by eye, but copying fingers would solve my problem a great deal. My question is where can I lay my hands on one of these simple but efficient pieces of equipment, or is there a plan I can use to make one? Financially I could not afford a copying lathe. Regards, **Frank Winter**

Hi Frank, thanks for the kind words regarding my article on copy turning.

The fingers are available from Paul Howard Woodturning – [www.paulhowardwoodturner.co.uk](http://www.paulhowardwoodturner.co.uk) – and the design for the candlestick comes from Classic Forms, written by Stuart E. Dyas.

I hope this helps.

Best wishes, **Les Thorne**



Paul Howard copying fingers mounted on a lathe

## NEW FLEXIBLE CURVE ROUTING GUIDE TEMPLATE ACCESSORY

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## WRITE & WIN!

We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about the magazine's features, so do drop us a line – you never know, you might win our great 'Letter of the Month' prize, currently the new Trend 3/4in 30-piece Router Cutter Set, worth over £100. Simply email [tegan.foley@mytimemedia.com](mailto:tegan.foley@mytimemedia.com) for a chance to get your hands on this fantastic prize – good luck!





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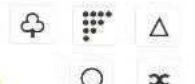
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## TOOLS YOU'LL NEED

- Spindle roughing gouge
- 6 & 9mm gouge
- 3 & 6mm parting tool
- Detail gouge
- Screw chuck
- Faceplate
- 6 & 12mm drill

# MINIATURE DOMED TEMPLE PART 2

This month, **Dave Roberts** completes his classically inspired miniature folly

**L**ast month, we made the dome of our temple, and this month, we'll turn our attention to the base, starting with the columns, which will give you a chance to practise your copying skills in ensuring that all eight come out the same size.

## The columns

Bearing in mind that the columns have a square top and bottom, you'll save yourself some work if you're able to prepare the timber on a planer/thicknesser. Otherwise, you'll have to cut them on a circular saw or even a bandsaw, and then sand the squares by hand. Even

more important, however, is the length of the columns: if one of them is out by even 1mm it will be very noticeable, so, measure twice and cut once, as the saying goes.

Start, then, by cutting the columns to length including an allowance for the spigots, which are marked off before being turned with a parting tool. After checking the column blank is the right size, mark off the square sections at either end and turn them with the parting tool, which, if it's freshly sharpened and the lathe's running at around 2,000rpm, will cut them cleanly. Turn the column to the finished diameter, remembering that the column tapers towards the top. Although there isn't a lot of detail on the

columns, what there is very fine so getting all eight to match is a challenge. As long as you measure everything and take your time, though, it should work out fine: I used a parting tool to turn the fillet and a small detail gouge for the beads. Next, sand the columns by working through the different grades; final sanding is best done with the lathe stopped so that you can rub the abrasive up and down the grain to avoid leaving sanding marks. You can then seal and polish the columns.

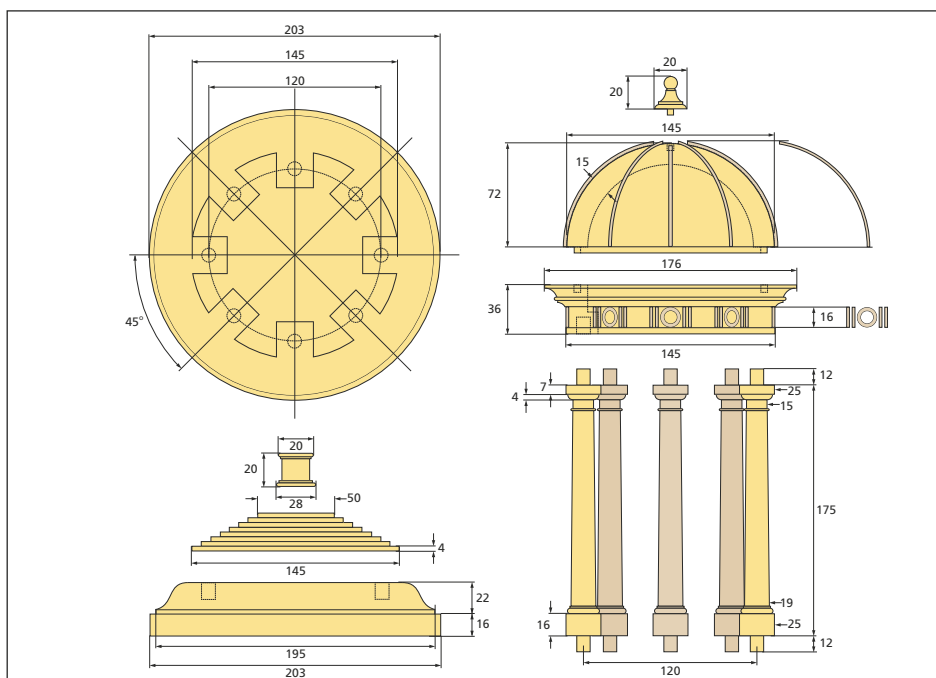


Fig.1 Temple components



**1** Mount the column blanks between centres and turn them to the finished diameter



**2** Use a parting tool and detail gouge to shape the columns



**3** Mount the base onto a glue chuck and turn it to the finished diameter

### The base

The base is turned from a single piece of Gonçalo alves, which is hard and tight-grained, making it perfect for turning. The only tools I needed to turn the base were a parting tool and a 9mm gouge, and it was a pleasure to see the fine shavings roll off the gouge from such a quality timber.

The first part of the base to tackle is the bottom. The easiest way to avoid spoiling it with screw holes and chuck marks is to fix a scrap piece of wood to a faceplate and then face it off flat so that you can mount the base onto it using hot glue.

Turn the bottom of the base flat, and check the finish by laying a steel rule across it. Removing the base is then just a matter of knocking it off with a rubber mallet. Face off the scrap wood again and reattach it to the base so that you can turn it to the finished diameter and thickness. Remove the base from the lathe, pick off any glue

left on the bottom, and sand it by wrapping a piece of abrasive around a cork block and working with the grain. Seal with sanding sealer.

### Drilling the base

When drilling the base for the columns, it's important to use the template that you made when drilling the holes in the architrave of the dome so that everything lines up.

The next step is to carefully centre the template on the base and tap in some panel pins to mark where the holes have to be drilled, then set the depth stop on your pillar drill so that you don't drill right through. I've done it more than once in the past and, believe me, it's gut-wrenching!

### The steps

The steps are turned in pau amarillo. Start by mounting the workpiece onto a screw chuck,

and facing it up to make sure it's flat. Then reverse the workpiece on the lathe, and turn it to the finished diameter and thickness. If you use a parting tool with a keen edge, the steps will be sharply defined, but be careful when you come to sand them as it's all too easy to sand away their sharp edges. When all the sanding is completed, seal the timber with sanding sealer before rubbing it back with '0000' wire wool so that it's ready for a coat of polish.

You can now make the square cut-outs into which the bases of the columns fit. To do this, make a new template to fit the steps and centre it on the template that you used to drill the holes in the architrave. Transfer the hole positions to the new template, and drill them to accept the spigots on the columns. Next, place the columns into the holes and mark around their bases using a fine pencil to produce an outline that you can carefully cut out on the bandsaw.



**4** Shape the outside of the base with the gouge and parting tool...



**5** ... then put the template on the base and use panel pins to mark the holes for the column



**6** Set your depth stop on the pillar drill and drill the holes for the spigots



**7** No quick step: use a parting tool to turn the steps, taking care to keep their definition crisp



**8** Make yourself a template for cut-outs in the steps...



**9** ... then mark out the squares and cut them out on the bandsaw using a fine blade



**10** If you want to put a figure inside the temple, turn a plinth to a suitable size

When this is done, lay the template on the underside of the steps and mark out the position of the squares. Then, summoning your full powers of concentration, cut out the squares. The bandsaw blade that I use for general cutting is  $\frac{1}{8}$ in 4tpi, but for a really clean cut I changed the blade to  $\frac{1}{8}$ in 10tpi. Remember, if you cut the squares too big, you'll have to turn the steps again, so be careful and take your time.

If you want to put a figure inside the temple as I did, this is the time to make a plinth from pau amarillo. Turn the plinth to suit the size of the figure, and form a spigot on the bottom so that it can be glued into the steps. If it's going to be too big to fit through the columns when they're in situ, then glue it to the steps before assembling the temple.

### Decorating the architrave

The decoration consists of a combination of rings and bars set above each column, which means making eight rings and 32 bars! The rings are made from Gonçalo alves, arranged so that they're turned from face-grain; end-grain would be too weak. Mount the workpiece on a screw chuck then slowly drill a 10mm hole – around 500rpm is fine. Then turn each ring to the finished diameter and round it off with the parting tool before sanding and parting it off.

Obviously, this will produce a ring with a flat back, so you'll need to create a slight curve to match the architrave. The easiest way to do this is to turn a piece of scrap wood to the same diameter as the architrave, then wrap abrasive around it and use it to shape the back of the rings.

Sticking the rings to architrave is simple enough: put a drop of PVA on the back and hold them down with masking tape. The bars are rather fiddly to make, and are cut from a strip of Gonçalo alves on a circular saw before being cut to length on the bandsaw using a fine blade. Each one then has to be sanded and sealed before being glued in place.

### The finial

The finishing touch is the finial, which is again turned from Gonçalo alves. I found that the best tool to turn the concave section was a scraper made from a 100mm masonry nail fitted into a homemade handle and ground to shape. When you've finished turning, sand and seal the finial, and glue it into place. ✂

### GLUING UP

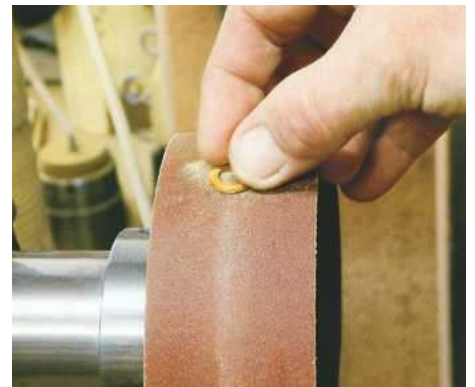
Using the columns to help keep everything in line, glue the steps to the base. Then cramp up the assembly and leave it to dry before attaching the columns by putting glue on their spigots and a little more into the holes. When it comes to clamping the columns, I used the lathe: fit a flat surface to the headstock to support the base, and then bring up the tailstock, line it up with the centre of the dome, and then wind it in. You can help everything along by using a few clamps, too, but don't forget to protect your work by using small steel rules or offcuts of timber



**11** Hold the plinth on a screw chuck while you turn it and don't forget the spigot



**12** The decorative rings are turned and shaped with a parting tool..



**13** ... and then with the lathe stopped, sand each ring to shape the back

### TIP

As we've seen in this project, a parting tool can do much more than just part off: I make a lot of use of my 6mm-wide parting tool to cut fillets, round off beads, and scrape. It's worth taking some time to experiment with one to see what you can do. You may be surprised just how versatile they are



**14** Put a little PVA glue on the rings and use masking tape to hold them in place



**15** The finial is small and delicate, so take your time, and keep it crisp and sharp

### NEXT MONTH

Dave's back at the lathe (where else?) and making this decorative wall bracket



# STORAGE SORTED

**Glen Scott** uses pieces of pre-dimensioned timber to make this effective bookshelf and storage solution

**I**n this article I'm going to make a rustic modern bookshelf. There is something very satisfying about creating your own piece of furniture. I'm excited to show you the steps

I took to create this bookshelf, which can also be used for storage. This project is designed to be broken down for easy transport. The nice two-tone finish quickly draws attention to the eye with lots of storage. This can be used for all sorts of applications – perhaps you want to show off your art, camera gear, etc. The choice is yours.

## MAKING THE CUT Shelves

When making the shelves (see cutting list), one thing to keep in mind is that the dimensions may

vary. I took the width of the smallest shelf then ripped the other shelves to match. You can use a table saw or a circular saw with an edge guide to rip the shelves. I only used four shelves but you can use more. This design is fairly easy to modify.

## Frames

Cut all the 2x2 pieces down to be the same length, then cut the bottom and top part to complete the frame. In order to keep the design clean, I used dowels. I have mixed feelings towards them, mainly because there is no room for error. ▶

## CUTTING LIST

Please note that as this is an American project, some names of finishes will be different here in the UK

- Shelves – 282 × 1,219 × 38mm – 4 off
- Frame – front back – 1,727 × 38 × 38mm – 4 off
- Frame – top & bottom – 286 × 38 × 38mm – 4 off
- Cross support – 1,702 × 38 × 38mm – 2 off





1 Check the timber for defects, then cut the shelves slightly oversize on a sliding mitre saw



2 Measure each board to find the narrowest. Rip others to width if necessary



3 Use a stop block to ensure each board is exactly the same length



4 Mark end-grain centres on each short frame section, then drill for the dowel point



5 Lay out the sawn frame components to check for accuracy. Insert dowel points

6 Cramp short and long frame members together to enable the dowel points to work accurately



7 Glue dowels into holes on the short pieces, then glue and cramp the frame together



8 Place the shelves inside the two frames to mark their positions on the uprights

For me, I find that a dowel centre works great, especially where you cannot get a dowel jig to work. After drilling the holes you can then glue up the parts, before adding wood glue and clamps.

#### MAKING THE CROSS SUPPORT

To create the cross support, I temporarily laid out the shelf as it would be completed. I took a piece of 2x2 timber and placed it diagonally across the back. With this piece in place, I then marked where it intersected the two frames, before cutting it at that mark. Next, I used this piece of cross support to mark the location of the others.

#### MAKING THE CROSS

With both parts cut to size, set them in place as if they were installed, placing one on top of the other. Now, mark both parts, then label them. I used a top and bottom label.



**9** Lay a cross support across the back to mark the mitre needed at each end



**10** Adjust the mitre saw to the correct angle and cut mitres at each end



**11** Check the first cross support is a snug fit between the two uprights



**12** An angled offcut can be used to stop the cross member sliding before fixing



**13** Use a gauge to mark half the timber depth, then cut the shoulders



**14** A Japanese saw will give the finest cut. Stop at half the depth



**15** Carefully remove the waste from each edge with a wide chisel

### CUTTING THE HALF LAP JOINT

Note: If you don't plan to disassemble, then you can glue this joint. I like the idea of being able to break this down, however.

With both pieces marked from the previous step, use a hand saw to cut inside the line. Prior to cutting, make sure you mark the halfway point on both pieces, then, take a chisel and remove the unwanted areas. Put the cross support together then find the centre of the intersection. Next, drill a hole for the connecting bolt. Do not drill all the way through both pieces. With half of the material being removed, I had to modify the threaded insert, making it shorter.

### ATTACHING THE CROSS SUPPORT

Since the cross support is not bearing any weight and just providing stability, I felt this setup would be ideal. Threaded insert is one of my favourite



**16** Dry assemble the cross supports and drill for the connector bolt



**17** If the hex connector bolt is too long, cut to size with a hacksaw



**18** Check the bolt is a good fit through the cross support's lap joint



**19** Bolts are used to join the cross support to the frame. Cramp together while drilling



**20** Use a hex key to assemble the frame and cross supports together



**21** Remove each bolt from the timber before applying a finish



**22** Use a thicknesser to clean up the shelves, if necessary

hardware to use when connecting two parts. Driving a threaded insert into the end-grain is surprisingly strong. I was able to drive most of the inserting in at the correct angle. I did notice one of them was at the wrong angle, however, so I used a file to clean it up.

### SANDING & APPLYING A FINISH

Although I used a thickness planer for this project, you don't need one. My timber is not 100% flat, but my main goal was to minimise sanding by removing a few layers. Keeping the thick look was important to me. An orbital sander or a belt sander will work just as well. After sanding the shelves I then moved on to the frame. In terms of finish, for the shelves, I used a light walnut Danish oil and for the frame, Espresso 273.



**23** A portable sander will work almost as well



**24** I finished the shelves with a light walnut Danish oil

### ASSEMBLING THE FRAME

After allowing the stain to completely dry, you can assemble the frame, then add the cross support. Make sure all bolts are tightened. If you notice any wobble in the frame, the shelves should add weight and make the structure more stable. Next, apply a coat of protective finish – I used polyurethane.

### ADDING THE SHELVES

For spacing, I placed the first shelf 100mm from the very bottom. I then used a piece of wood as a template to space the shelves apart evenly. I spaced them at 406mm intervals but this is personal preference. After installing the brackets, take the frame to your desired location and then add the shelves. The bracket comes with screws, which will work, but I used longer screws to attach the shelves. The project is now complete and ready for you to add your personal belongings. ✂



**25** For contrast I used a darker (Espresso) oil on the frames



26 Assembling the frame with a hex key once the finish is dry



27 The completed frames are joined together by the rear cross support



28 You can spray a final coat of lacquer, though check this is compatible with the stain



29 Use an offcut to determine the position of the first shelf



30 Screw small brackets to the end frames to support each shelf



31 Make sure the screws are not too long for the frame members



32 The completed project, ready for you to add your personal belongings



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# RAY KEY TRIBUTE COLLABORATION

Paying homage to internationally acclaimed woodturner **Ray Key**, **Les Thorne** finishes one of his part-turned pieces and also makes a tribute box in his distinctive style

In the early autumn of 2018 we lost the internationally renowned woodturner, Ray Key. His involvement with the craft started in the 1960s, and he became a production turner in 1971 before specialising in bowls, platters and boxes in the early 1980s. He is rightly considered the father of British hobby turning. Ray became a driving force of the woodturning club and demonstrating scene that we take for granted nowadays. In 1987, this led to him starting the Association of Woodturners of Great Britain (AWGB) with Ray himself being the first chairman and then President in 1998, a position he held until he passed away. His greatest honour came in 2015 when he was awarded the British Empire Medal for services to woodturning. Ray was an incredibly hard-working woodturner, which has led to hundreds of part-turned pieces being left unfinished. This is where all us turners come in; we all owe something to Ray and to be asked to finish one of his bowls for an



1 I selected this piece from a photo and I must admit I thought it was larger. It's a beautiful piece of walnut burr with some fissures and bark inclusions

upcoming exhibition is truly humbling. The exhibition will take place from 2–21 July at Nature in Art near Gloucester and will feature 110 turners from five continents with the proceeds being shared between his family and the AWGB's training program. I don't often get nervous when turning, even when in front of an audience, but having this small bowl on the lathe put me under a fair bit of pressure. The bowl couldn't fill my usual five page article allocation, so I thought I would turn a tribute to Ray as well. The box that I decided to make is one of his signature square-topped pieces. ✕ ▶



**2** Ray used to fix these little pieces of plywood on the base of his small roughed-out bowls using CA adhesive. This piece of wood has dried down to 8% moisture content and only warped a small amount



**3** I thought I'd work on this bowl back to front, so I mounted the plywood base in my gripper jaws and got it running as true as possible. Normally I would work on the back of the bowl first



**4** Learning to sharpen your tools without a jig is not a necessity with so many good aids around nowadays, but it is a very satisfying skill to learn. This small bowl gouge is ground to a bevel angle of 40°



**5** Make sure you get the bevel at the correct angle before starting the cut, especially when working on an uneven blank. It's good practice to work as close to the centre of the toolrest as possible as it's strongest at that point



**6** It doesn't take long to get the inside shape of the bowl correct; I only had to resort to the stronger tool for the last little bit. I then power sanded the inside down to 400 grit



**7** Due to the holes, vacuum chucking the piece was impossible so I had to go 'old school' by making a small dolly that fitted on the bowl. I used a small amount of packing to minimise any damage to the inside sanded surface



**8** The tailstock was in the way of a push cut technique, so I switched to a pull cut utilising the left-hand wing of the tool. If you keep your right hand down, the tool will shear the timber, thus leaving a good finish



**9** I was unsure whether Ray had glued the middle of the plywood, so I was more than a little nervous when I got to this stage. I changed to a spindle gouge, which allowed me to get really close to the drive



**10** After finishing the last part by hand, I pyrographed both mine and Ray's names into the base. Leaving the bowl plain was a conscious decision as I never saw Ray use colour or texture on his work, so therefore wanted to keep true to his style



**11** Danish oil and walnut are a marriage made in heaven and you can see the richness of the timber's colour when the first coat is applied. When dry, I'll lightly cut it back and give it a another coat



The completed walnut bowl



**1** Ray used a lot of exotics during his turning career so I decided to follow in his footsteps and use a piece of olive wood for the base and a beautiful piece of Brazilian tulipwood (not to be confused with American poplar) for the lid



**2** I needed to hollow the box section, so after making it round, cut a spigot to suit the chuck that I decided to use. The smaller the spigot, the better the curve you can put on the work



**3** This isn't an easy cut to get right as it requires you to lift and traverse the tool through the shape at the correct feed rate. The bevel is in contact with the cut surface at all times; this gives a great finish which requires very little sanding



**4** It's the small details that can make or break a piece and you could often see Ray experimenting with direction changes, especially in his boxes. This detail is something I've never used but it definitely works on the top of the olive wood



**5** Due to the depth of the base, I decided to drill out just short of the finished depth. I like to use a twist drill for this as the shavings pack up behind a sawtooth or Forstner bit



**6** The initial hollowing is carried out using a signature gouge; the left wing of the tool is presented to the side-grain with the flute pointing at 11 o'clock. Make sure the tip of the tool doesn't come into contact with the surface as you will experience a catch



**7** Now I'd gone in about 60mm, I decided to change to the Simon Hope hollowing tool. This is a brilliant tool for removing timber with its combination of 6mm carbide cutter and large diameter shaft



**8** Ray was fantastic with a scraper, using a delicate touch required with tools such as these. I'm more ham-fisted so prefer to have a negative-rake on the tool, which affords me a little more control



**9** You usually need to use a scraper with the handle above the cutting edge, but the negative-rake ground on top of the tool means I can present it horizontally. I can't stress enough the light touch that's required in order to get the best from this tool



**10** My hand is far too big to get into the shape in order to sand it effectively. A soft interface sanding pad held in a pair of locking forceps allows you to sand through the different grades of abrasive right into the bottom



**11** Exotic timber is notorious for clogging up abrasives so to help with this I applied a little amount of paste wax to the inside; this acts as a lubricant and the solvent in the wax helps to break down the oiliness of the timber



**12** I didn't want to put any holes in the lid so I glued it to a waste block with my hot glue gun. The piece is the correct shape for the lid so I made sure that I centred it up perfectly



**13** The two important sizes are transferred onto the base of the lid; this is the diameter of the spigot required to fit into the base and the amount of overhang I need for the small bead



**14** The spigot is the first thing to be turned as everything is determined by this diameter. The 10mm skew is used as a parting tool. Only take tiny amounts off at a time, as it needs to be a tight fit



**15** Cutting this small detail at the top of the bead is not easy, but luckily I had a pointed tool on the rack that I made for a job a while ago. I needed to go carefully and ensure to only take small cuts



**16** I was really pleased with the shape I achieved; it's all about the crispness of the shape. Tulipwood can be prone to chipping out so check the surface carefully at each stage; this timber deserves to be turned perfectly



**17** The underside of the square will be shaped with a simple curve. I used a combination of pull and push cutting to ascertain which technique would give me the best finish. I used the bowl gouge for all of it except close to the bead where the spindle gouge fitted in better



**18** I jammed the lid onto the base in order to turn the top shape. Try to keep the tailstock in place for as long as possible as you will be cutting a fair amount of fresh air at the start, so it's best to keep the bevel pointing in the direction you want to go



**19** I put a small mark on the toolrest so I knew where the tool was going to come into contact with the edges. I really wanted to put a detail in the centre but I couldn't find any like this that Ray had done, so I chose to leave it plain



**20** The edges are around 5mm so they take no time at all to finish with a sanding block. It's much quicker to do this now rather than at the beginning. Use a block to make sure you keep the edges looking sharp



**21** I turned a pine jam chuck to allow me to hold the base, which meant that I could complete the shaping of the outside. I wanted a small base, which, I think, makes the box look more elegant



**22** Cut and polish works really well on these exotic timbers and quickly brings them to a soft sheen after they have been sanded. I finished the piece using some paste wax; Ray's work was rarely very shiny



**23** Even though it was a tight fit onto the jam chuck, for added security, I decided to tape the piece on. Keep the tailstock in place for as long as possible – you don't want to knock it off now



**24** Woodturners love a decorative groove on the bottom of their work; this shows that you've gone to the trouble of remounting the piece and turning it rather than just parting it off and sanding. The point of the skew used as a scraper is best for this



The completed tribute piece in olive wood and Brazilian tulipwood



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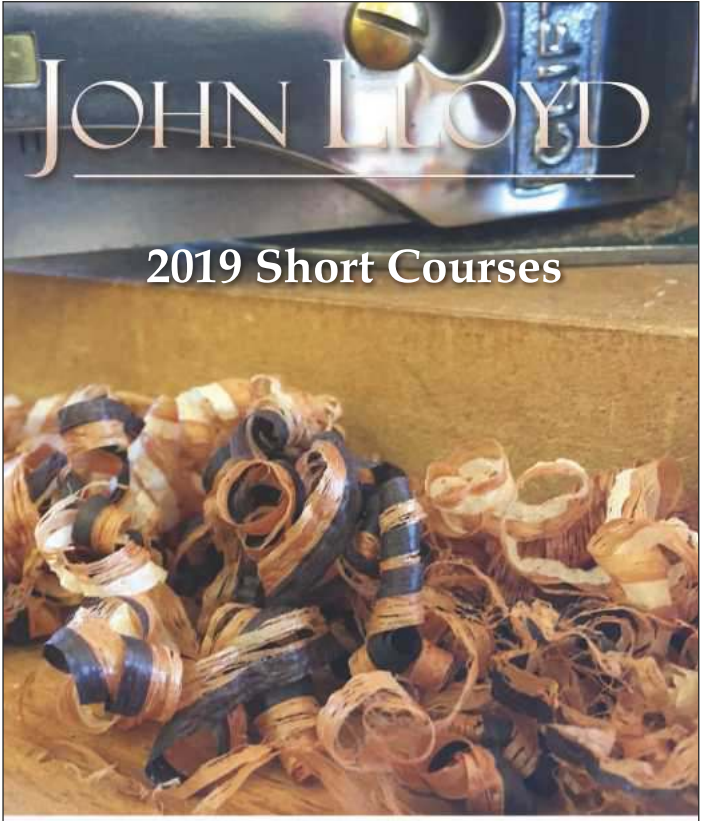
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# SEDUCTION

## on an industrial scale

If I had a hammer, and especially if I hammered in the morning and hammered in the evening as I did, working on a building site, it should properly be my hammer. I didn't have one. I had several, but none was appropriate. Some were too light; others ancient. Wooden hammers that break or work loose. A cheap metal hammer liable to buckle. Blacksmith's weapons. So I went to the builders' merchants and specifically bought one. I spent more than I'd expected because I was seduced. It was a beautiful hammer. Beautiful like a sculpture; a dolphin or a swan. I wanted it in its own right – nothing to do with nailing. It is an Estwing. Keep your eye on that, my boss cautioned: they tend to walk.

Not all tools are beautiful, but some are. I have a pair of long-handled pincers that make de-nailing a pleasure. They have an elegance suggesting that three different sizes could be hung on the wall like flying ducks (a little-known breed of bull-nosed duck). They'd have to be removable ducks, for a duck unable to quack is emasculated, and that is unkind.

Making a permanent exhibition of any tool is to contradict its usefulness and therefore its essence. Nevertheless, tools look that good. A combination plane packed away, fast asleep in its wooden box, is as satisfying as one assembled and ready to fly. The wooden handle of many a saw is a swirl of curves worthy of an ice-skater. A heavy old mortice chisel rings with Zen simplicity.

You see which way this is going. Hand tools. However useful and efficient many of my power tools are, they don't have the same appeal, the same lure. I wouldn't put an electric planer on the mantelpiece, or a router underneath a spotlight (though, to prove my point, I could easily imagine a hand router – 'an old woman's tooth' – decorously illuminated).

I don't want to be dogmatic. I was quite happy to admire my new mitre saw, and ceremoniously introduce it to visitors, before it joined my workshop; revving it up, and pulling it down without a piece of wood in sight. It was like having a working model of the *USS Enterprise* in my living room, not that it worked as such. Obviously. I wouldn't want it to vanish at warp speed. But just as beautiful. This is aesthetic as well as functional beauty. My table saw has the attraction of a loyal friend but is not particularly good looking. It was designed by an engineer, not an engineer/artist. Or maybe it's the nature of the beast?

### I'll have them, but what are they?

There's a car boot sale every summer Sunday morning on Great Torrington Common. One stall sells old tools, so I took a look. I saw them immediately. They were lovely, so refined and gracious; I wanted them. How much were they? Very reasonable. I'd have to have them. But maybe I ought to know what they are? They'd been hit on the head, but not heavily. Are they cold chisels, I asked? No, the man replied, that's

the one shown below. I'm not a Christian but I am infused with Christian imagery. I made a crucifixion scene! The cranked chisel is the crucifixee. On the right is an upstanding stalwart – a tall figure, presumably male. On the left, a little way off, two female chisels sob and hug each other in grief. The crucifixee is strong and proud – no slumping here. It seems to be a scene of victory, shock, resolve and sadness all at the same time.



A selection of caulking chisels, for filling the joints between planks of a ship's deck

what everyone thinks; I've only just found out myself. They have a groove along the tip of the blade, well, most of them do. They're caulking chisels, for filling the joints between planks of a ship's deck. Of course! Perfect sense. One of them was cranked, for getting close to an edge. I'll take them, I said, and handed him coins: though I don't know what I'm going to do with them – I don't have a ship. You'll put them in a cupboard, he said, knowing all too well what happens to collections.

I didn't do that. I laid them out on a table in my way to the workshop, and as I passed, I arranged them this way and that. The patterns settled into

The scene deserved a good backdrop so I joined an oak board and sanded it smooth. No decoration was needed. I drilled holes where required, and strapped the chisels to the oak with cable ties: if I do find myself with a ship, or if a needy sailor floats by, the chisels can easily be removed. The ratchet on the ties made tensioning simple – leather bootlaces, for instance, would have stretched. And that's it. It is what it is, without further explanation. ✕

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