

Issue 323 • October 2017

# Good

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- Phil Davy tests the brand-new Bosch FlexiClick 12V system
- Les Thorne turns a vase in English yew with an ebony insert

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Look inside to see some serious woodworking talent!

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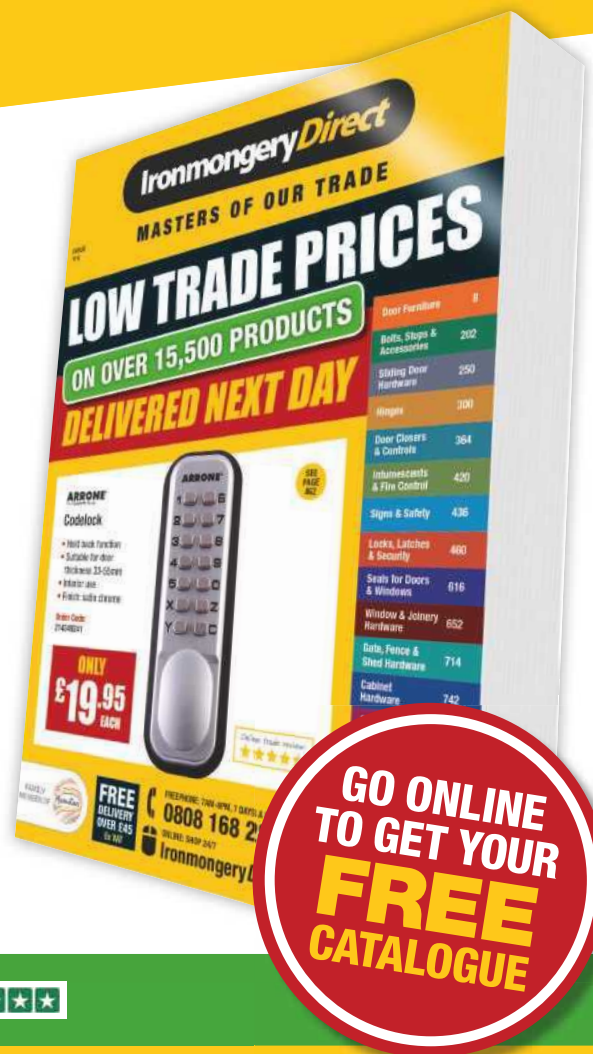
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# Welcome

## 'A snapshot of my Cornish holiday!'

Well, as an update to last month's writer's block scenario, I am glad to report that the feature I was struggling to pen is now written! Phew! I think I just had to wait until the mood took me, and until the necessary sentences formed in my brain, before I could finally put finger to keyboard and pull everything together into a (hopefully!) coherent whole. It happened after my holiday, and I'm not sure if the break had anything to do with my newfound inspiration, but it no doubt helped. So that's one more thing ticked off the seemingly never-ending list of projects to tackle.

### A garden of delights

Going back to my holiday, it was indeed great to get away, even if the Cornish weather was not quite as kind as it could have been. I suppose that is one of the risks you take when holidaying in Great Britain, but I know nowhere else with such stunning land and seascapes. My family also live there, so that was another major reason for choosing this particular destination. With grand plans for visiting such places as The Eden Project and The Lost Gardens of Heligan sadly scuppered due to an onslaught of wind and rain, much of the activities had to be moved indoors, which was a shame as I was particularly looking forward to seeing "Cornwall's only outdoor jungle garden" and marvelling at its delights. Luckily my mum's garden is a close second, and while not a jungle, it is home to some absolutely stunning long-established plants, including an enormous *Gunnera manicata*, otherwise known as Brazilian giant rhubarb. Growing to some 2.5m tall by 4m or more across, I took the opportunity to have a photo of myself taken standing inside this giant



beast, which you can see above along with a few others – Brownie points will be awarded to those who can identify any of the locations pictured!

### Keeping busy

Anyway, enough about my travels. I hope you've all enjoyed summer, even though it's been a bit of a mixed bag for many. I know a lot of you have been busy in your gardens too, building structures, sprucing up your green spaces, and also getting on with new and existing projects in your workshops. While the warmer months may sadly be drawing to a close, I hope what we've got in store for you over the coming autumn and winter months will inspire you to keep busy, or at least give you some ideas of what to make come next Spring! We hope you're as fond of our October issue as we are, and don't forget to keep in touch and let us know what you've been making as well as what you think of the mag.

Enjoy!

*Tegan*

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



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Matthew White takes inspiration from a vintage effect hall tree and creates his own walnut version that incorporates even more storage space – perfect for keeping your winter accessories tidy

## THE (HALL) TREE OF LIFE



**WIN!**

1 of 10 pairs of trousers from Dickies' brand-new Pro range – worth £75 (RRP) per pair! To find out how you can enter, see our competition on page 28 – good luck!



# Good Woodworking

October 323

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When small isn't beautiful

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<http://twitter.com/getwoodworking>

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

Published by MyTimeMedia Ltd.  
Suite 25, Eden House Enterprise Way,  
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BACK ISSUES & BINDERS  
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## **BIG BRANDS, BIG STANDS, LATEST PRODUCTS**

All the leading brands are represented, many with huge stands displaying the widest range of products, making this the premier showcase for power tools, hand tools, woodworking machinery, accessories and workwear. Several brands including Festool, Makita and Metabo will be using this opportunity to debut new products from their Autumn 2017 range for the first time at a UK exhibition.

## **LIVE DEMONSTRATIONS & FREE MASTERCLASSES**

Plenty of live demonstrations and masterclasses each day of the show make this a unique opportunity to see the products in action before you buy. Talk direct to the manufacturers and compare makes and models under one roof.

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## **RELAX & MAKE A DAY OF IT**

Visitors to the show have access to the spectacular Panoramic Restaurant & Bar where you can relax and enjoy an excellent value hot meal whilst admiring spectacular views across the racecourse. Alternately grab a quick snack or drink from the catering vans outside or the Costa Coffee bar on the ground floor.

For latest details visit our dedicated show website:

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## **'Woodworking Live'**

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**A brand new free event being held at 'The' Tool Show '17 for the first time this year.**

This exciting new event brings together some of the **UK's most well-respected and popular woodworkers** in one place for three days of inspiration, creativity & entertainment.

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# The Wood Awards: 2017 Shortlist announced

Established in 1971, the Wood Awards is the UK's premier competition for excellence in architecture and product design in the world's only naturally sustainable material. The Awards aim to recognise, encourage and promote outstanding design, craftsmanship and installation using wood.

The Awards are split into two main categories: Furniture & Product and Buildings. Within the Furniture & Product competition there are three subcategories: Bespoke, Production Made and Student Designer. A record of 14 furniture and product projects have been shortlisted for the Wood Awards 2017, and four bespoke designs, four production, and six student designs have been selected by the judges, led by Max Fraser, design curator and author. All the shortlisted projects will be on display at the London Design Fair from 21–24 September, at Old Truman Brewery, and the winners will be revealed by Wood Awards host Johanna Agerman Ross, Founder of *Disegno* magazine and Curator of Twentieth Century and Contemporary Furniture and Product Design at the V&A, at the annual ceremony at Carpenters' Hall on 21 November.

For more info, see [www.woodawards.com](http://www.woodawards.com), and be sure to look out for GW327 (January), which will feature a special article showcasing all the deserving winners.



Shortlisted within the Buildings Competition's 'Interiors' category, Nautilus is a spiral staircase developed as a dynamic design statement for a residential refurbishment



Shortlisted within the Furniture & Product Competition's 'Bespoke' category, Block Series is a new body of work from Gareth Neal that continues his research into digital crafting



Shortlisted within the Buildings Competition's 'Private' category, Woodsman's Treehouse is a two-person residential retreat at Crafty Camping & Woodland Workshop



Conceived as a habitable arc and shortlisted within the Buildings Competition's 'Small Projects' category, The Smile was a 3.5m high, 4.5m wide and 34m long curved timber tube that cantilevered 12m in two directions with viewing platforms at both ends



Shortlisted within the Furniture & Product Competition's 'Production Made' category, the Pero Shelving unit forms part of a range of solid oak storage and desking designed by Matthew Hilton for Ercol

Shortlisted within the Furniture & Product Competition's 'Student Designer' category, the inspiration for the Hex Drinks Cabinet comes from the colour and uniformity of a bees' nest found in the maker's garden

## BUILDINGS COMPETITION SHORTLIST

### COMMERCIAL & LEISURE

1. Command of the Oceans – Baynes and Mitchell Architects
2. The Gateway Buildings, Weald and Downland Living Museum – ABIR Architects
3. Hastings Pier – dRMM
4. Rievaulx Abbey Visitor Centre & Museum – Simpson & Brown

### EDUCATION & PUBLIC SECTOR

1. Cowan Court – 6a architects
2. The Glaxosmithkline Carbon Neutral Laboratories for Sustainable Chemistry – Fairhursts Design Group
3. Maggie's Oldham – dRMM
4. Wells Cathedral School – Eric Parry Architects

### INTERIORS

1. 1 New Burlington Place – Allford Hall Monaghan Morris
2. House in Devon – 6a architects
3. Nautilus – Hassan Nourbakhsh (Borheh)
4. Oak Lined House – Knox Bhavan Architects LLP

### PRIVATE

1. The Crow's Nest – AR Design Studio
2. Hampshire Passivhaus – Ruth Butler Architects
3. Stepping Stone House – Hamish and Lyons
4. Woodsman's Treehouse – Brownlie Ernst and Marks Limited

### SMALL PROJECTS

1. Belarusian Memorial Chapel – Spheron Architects
2. Feilden Fowles Studio – Feilden Fowles Architects
3. Saw-mill Shelter – Architectural Association Design and Make students
4. The Smile – Alison Brooks Architects

## FURNITURE & PRODUCT COMPETITION

### BESPOKE

1. Annie's Wood/Hundred Foot Stain. Three-panelled Screen by Wycliffe Stutchbury
2. Block Series by Gareth Neal Ltd
3. Communion Table by Stephen Owen
4. Time and Texture Installation ('A Landscape of Objects') by Eleanor Lakelin

### PRODUCTION MADE

1. Foresso by Conor Taylor Ltd
2. Kitchen Series for Case by Gareth Neal Ltd
3. Narin Chair by David Irwin
4. Pero Shelving by Matthew Hilton

### STUDENT DESIGNER

1. Hex Drinks Cabinet by Damian Robinson (BlytheHart Made)
2. Hinny by Harriet Speed
3. Rustic Stool 1.0 by Mark Laban
4. Split by Jack Green
5. Tri by Rowena Edwards
6. Why by Archie Will



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**FESTOOL**

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# Ryobi launches new set of brushless power tools

Leading power and gardening tool manufacturer Ryobi has recently announced details of its latest product innovations, including a new set of power tools designed to utilise brushless motor technology. The retailer launch is planned for the autumn, with the new products sitting in the DIY giant's ONE+ range of cordless power tools.

Aimed at the avid DIYer, the new brushless tools sit at a slightly higher price point than the original cordless models due to superior performance and product longevity. Across all brushless power tools run time is increased by up to 40% per charge, allowing bigger jobs to be completed more

efficiently. The motor itself will last up to 10 times longer than brushed alternatives, the key difference being that a brushless motor has no physical brushes, preventing friction and wear. The more efficient operation also ensures less heat build-up, thus reducing energy loss. The intelligent electronics maximise power and allow additional features to be added; with a smaller commutator communicating directly with the copper windings, the tools are now more ergonomic.

With a range of over 70 ONE+ cordless power and gardening tools already under its belt, Ryobi's new range includes a cordless and brushless circular saw, angle grinder, drill and impact driver, alongside a new cordless trim router, sheet sander and belt sander.

## NEW CORDLESS TOOLS AT A GLANCE



### Cordless brushless circular saw – R18CS7-0 – £139.99

Electronically-controlled, the brushless motor in this ONE+ circular saw optimises efficiency for up to 40% more run time per charge, allowing excellent performance that mirrors the electronic power of corded. Sheet material, worktops and construction timber can all be easily cut by the 24 TCT blade, reaching a depth of 55mm, and E-control allows constant cutting speed throughout the job.

### Cordless brushless angle grinder – R18AG7-0 – £119.99

With dramatically improved performance against its brushed motor counterparts, the new ONE+ cordless brushless angle grinder offers a smoother, more efficient cutting experience. E-control enables constant cutting speed and E-protect automatically shuts down power in response to any kick-back, protecting the user. It is also supplied with a 125mm grinding disc.



### Cordless brushless percussion drill – R18PDBL-0 – £99.99

Optimised with brushless technology, the motor in this new ONE+ percussion drill will last up to 10 times longer than traditional brushed drills. The e-Torque control settings ensure screws are driven flush every time, with an LED illuminating the work area for extra precision. Complete with 13mm ratcheting chuck for improved bit gripping strength and durability, this is the most compact Ryobi 18V percussion drill to date, at just 201mm in length.

### Cordless brushless impact driver – R18IDBL-0 – £119.99

Suitable for a wide range of applications from fitting door hinges to driving decking screws and coach bolts, the new ONE+ brushless impact driver works quickly to tighten and remove fasteners. Its frictionless brushless motor incorporates intelligent electronics to deliver up to 40% more runtime per charge and lasts up to 10 times longer than brushed drills. The powerful impact mechanism delivers up to five times the power of a standard drill. Pre-set with four speed and power levels, DeckDrive™ has been introduced to deliver soft start and auto-speed reduction for ultimate control while driving decking screws.



### Cordless trim router – R18TR-0 – £99.99

Designed for more specialist woodworking applications, the new ONE+ cordless trim router has a powerful 29,000rpm for finishing edges fast and efficiently. Micro-adjustable height function ensures perfect accuracy, with LED illumination for improved visibility. The quick-release lever allows for easy depth adjustment and base removal, with a maximum plunge depth of 38mm. Supplied with 6/6.35mm collet, 6.35mm straight cutter, wrench and side fence, this product also comes packaged in a presentable gift box.

### Cordless sheet sander – R18SS4-0 – £54.99

With added micro texture and improved palm grip, the ONE+ cordless ¼ sheet sander reduces fatigue on those longer jobs. Dust bag collection ensures a clean, more comfortable dust-free working environment. The orbit itself measures 1.8mm in diameter, matching the ability of similar corded sanders with the added practical benefit of cordless application.



### Cordless belt sander – R18BS-0 – £99.99

A world-first, Ryobi's ONE+ cordless belt sander can tackle large sanding projects with the freedom and flexibility of cordless functionality. Its 76 × 533mm belt is compatible with most common accessories and with a 250m/min belt speed, it has been optimised for an exceptional removal rate not previously seen in domestic power tools.



All tools are available to buy via Amazon and in selected B&Q stores. Batteries are sold separately and all tools come with Ryobi's three-year warranty. To find out more, see [uk.ryobitools.eu](http://uk.ryobitools.eu).



## EWS 2017 – demonstrations & masterclasses



Japanese master-carpenter Sadatsugu Watanabe in action

Masterclasses for the much-anticipated European Woodworking Show are now confirmed, and this year there will be two short lectures held each day by Fred Hocker, Director of Research at the Vasa Museum on the tools that built (and those that were discovered) on the *Vasa*, the 17th-century Swedish warship that sunk in Stockholm harbour in 1628 and laid there for 333 years before being salvaged and housed in its own dedicated museum in Stockholm. In addition to Fred, Adam Tetlow will be giving a talk each day on 'Compass and Ruler – The Primary Tools'. Adam will cover how the understanding of practical geometry has shaped the arts and crafts of every human culture in every period, so join geometer Adam on a journey through nature and culture as he explores this primary mode of making.

Marionette maker Lenka Pavlickova is busy creating the puppet visitors are invited to name, and photos are being added to the show website as the creation develops. To be in with a chance of winning one of Lenka's fabulous glove puppets, take a look at [www.ews2017.com](http://www.ews2017.com) and when the name comes to you, do be sure to enter.

This year's overseas contingent of exhibitors and demonstrators includes Chris Schwarz of Lost Art Press, Dave Jeske of Blue Spruce Toolworks, Ron Hock of Hock Tools, Thomas Lie-Nielsen of Lie-Nielsen Toolworks, Chris Vesper, as well as Sadatsugu Watanabe and Chris Vesper of Veritas tools.

Firm favourites will be returning including woodturners Joey Richardson and Mark Hancock; pyrographer extraordinaire Bob Neill; timber hewer Steve Woodley; woodcarvers Peter Berry, Tim Atkins and Dave Johnson; marionette maker Lenka Pavlickova; scrollsaw expert Fiona Kingdon; Japanese joint maker Brian Walsh; plus furniture makers David Charlesworth, Dylan Pym, David Barron and Treeincarnated. Willy Rackham, The International Boat Building College, Willow Sculpture by Louise, blacksmith Nic Westerman, knife makers Ord Knives and V Knives, and Dave Wilkins stick maker add variety to the show and every effort will be made to ensure EWS 2017 is as diverse and interesting as possible.

The British Woodcarvers' Association (BWA) will also be hosting their extremely popular public vote competition.

In addition, you can expect to see many familiar tool suppliers in attendance, including Turners Retreat, Trend Tools & Machinery, Lie-Nielsen Toolworks, Gransfors Bruks axes, Pfeil, Auriou and Flexcut carving tools, Classic Hand Tools, Lincolnshire Woodcraft, Chestnut Products, David Barron Furniture, as well as a host of other retailers.

There will also be the chance to win prizes, including a Norwegian woodturning cruise, as well as show discounts from the many retailers.

For full details and advance tickets, visit [www.ews2017.com](http://www.ews2017.com).

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## COURSE DIARY

Autumn is coming, but don't let that put you off checking out our extensive course guide!

### OCTOBER

- 2 Bird, bee & bat boxes
- 3\* & 25 Spindle moulding
- 3-4 & 12-13 Intro to the small lathe
- 5-6\* & 11-12 Beginners' woodturning
- 6 Bandsaws
- 10 Taster session
- 11-12\* & 16-17 Bowls & platters
- 13 Sharpening with Tormek Hand Tools
- 17 Sharpening with Tormek Woodturning
- 19-20\* Turned boxes (advanced)
- 30 Turned boxes (introduction)

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

- 2-6 Square rule timber framing
- 28-29 Weekend woodcarving course

Weald and Downland Living Museum  
Singleton, Chichester, West Sussex  
PO18 0EU  
Tel: 01243 811 363  
Web: [www.wealddown.co.uk](http://www.wealddown.co.uk)

- 1-15 Tool sharpening and maintenance weekend
- 2-6 Dovetailing and drawer fitting
- 27-30 Beginners' four-day course

Chris Tribe, The Commill, Railway Road  
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Tel: 01943 602 836  
Web: [www.christribefurniturecourses.com](http://www.christribefurniturecourses.com)

- 2-4 Longbow making
- 2-8 Windsor chairmaking
- 7 Willow hurdle making
- 8 Willow weaving for beginners
- 21 Green woodworking experience
- 21-22 Ash splint basketry

Greenwood Days, Ferrers Centre  
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- 1 Intro to woodcarving
- 7 Drills in a day
- 7 Intro to spoon carving
- 8 Intro to furniture restoration
- 21 Intro to wood veneering

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## New Trend Multi-Point Lock Recessing Router Cutter



Trend's new Multi-Point Lock System Professional Router Cutter speeds up the fitting of multi-point lock strips into timber doors by making the appropriate stepped groove in a single pass.

The bearing guided TCT tipped 1/2in shank cutter follows the edge of the door to form a 20.5mm/14.2mm stepped groove that leaves the face of the lock strip perfectly flush to the door edge while allowing clearance beneath for the lock mechanisms to move freely.

Used in conjunction with the Trend 15mm Straight Cutter to rout the mortise lock bodies, the locks can be fitted in a fraction of the time when compared to traditional methods.

The Multi-Point Recessing Cutter (Ref. 34/51X1/2TC) is priced at £107.40 and the 15mm Straight Cutter (Ref. 4/09X1/2TC) at £62.56 inc VAT. Both are available from all Trend Routing Centres and Stockists across the UK; to find out more see [www.trend-uk.com](http://www.trend-uk.com).

## Record Power introduces new Coronet Herald lathe

Record Power has always focused intently on their customers' needs and this was the starting point when they decided to develop the first in a new generation of lathes: the Coronet Herald.

The design brief was to create a machine with the rigidity and performance of the very large, heavy (and relatively expensive) lathes on the market, but deliver it at a much more compact and workshop-friendly size while also being considerably more affordable, and this is what they've achieved with this new lathe.

Many of the professionals who tested the prototype machines commented that it would be their ideal lathe: manageable enough in size to take to demos and shows yet with similar and often greater performance than the larger machines in their workshops. The Herald is not only beautifully designed and engineered, but is made with unsurpassed accuracy and quality, ensuring the whole experience of turning is as enjoyable and trouble-free as possible. The sleek, modern curves of the design ensure the lathe has an attractive and contemporary style while at the same time making reference to the vintage Coronet series of woodworking machines, which provide the heritage and starting point of Record Power's involvement with woodturning.

The Coronet Herald features a state-of-the-art variable-speed drive system, swivel head, reverse facility and 24-point indexing. This innovative machine offers capacities, features and performance that far exceed anything a lathe of this size has been capable of before – it brings top-end professional performance at a fraction of the size and cost of comparable heavy-duty machines.

Priced at £999.99, see [www.recordpower.co.uk](http://www.recordpower.co.uk) for more info and to view the full range of buy same time offers associated with this lathe.



## 'THE' TOOL SHOW 2017

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



## NEWS IN BRIEF

Hilti has recently donated over a dozen tools to WellChild's Helping Hands project team, including the world's first cordless combihammer. In total the tools will be used on eight projects across the UK in 2017, from St Austell to Stockport, and well into the future.

WellChild is a national charity, which works to ensure the best possible care for children with complex health needs and support for their families. Their Helping Hands scheme tackles essential home and garden makeovers, with the support of volunteer teams from local companies and organisations

The shape of a tree is very important in determining its timber volume recovery and value. A Technical Note just published by the Forestry Commission provides guidance on the methods that can be used to assess stem straightness in standing trees. The Note looks at three methods: visual assessment, photogrammetric measurement and terrestrial lidar. It provides basic guidance on each of the techniques and recommendations for their use. Author Andrew Price of Forest Research, said: "The ability to make an effective assessment before harvesting is useful for forest managers and practitioners to improve forecasting, planning, marketing and resource use." To find out more, see [www.forestry.gov.uk/publications/whatsnew](http://www.forestry.gov.uk/publications/whatsnew)

Be sure to put a date in your diary for the Charnwood Road Show at Snainton Woodworking Supplies on 14 October at the company's Barkers Lane premises. A wide range of machinery will be on display, with a focus on woodturning tools. Snaintons are well known for the price and quality of their woodturning blanks, and the event also benefits from free entry and free parking. Taking place from 10am-3pm, to find out more, see [www.charnwood.net/events-and-shows/upcoming-events](http://www.charnwood.net/events-and-shows/upcoming-events)

## Felder Group UK launch new YouTube channel

The brand-new YouTube channel from Felder Group UK features numerous videos that allow you to learn more about machines from the Hammer, Felder and Format-4 ranges. With new content added regularly, it will be a great channel to subscribe to while allowing you to stay up-to-date.

Using the multiple playlists on the channel, you can find out what Felder customers think about the machinery they have purchased through their testimonial videos, watch various video demonstrations, which will assist you with service and maintenance on your machines, as well as practical videos that will help to provide you with more need-to-know information about woodworking.

To view the channel, see [www.youtube.com](http://www.youtube.com) and search for 'FELDER-GROUP UK TV', or visit [www.ukfelder.co.uk](http://www.ukfelder.co.uk).



Video demonstrating how to set up a bandsaw



Jackie Pritchard gives his honest view of the Felder combination machine

## £13 million to increase England's woodland

A £13 million fund to help landowners plant more trees to protect wildlife, boost the timber sector and reduce flood risk will soon open for applications, Forestry Minister Thérèse Coffey recently confirmed.

Farmers, foresters and land managers across the UK will be able to apply for up to £6,800 per hectare to plant, weed and protect more trees when application forms for the next round of the government's Woodland Creation grant are made available later this year.

The fund – part of the Countryside Stewardship scheme – will help to plant more than three million trees, creating 1,900 hectares

of new woodland and contributing to the government's ambition to plant 11 million trees, with a further one million in towns and cities.

Announcing the next round of funding, Forestry Minister Thérèse Coffey said: "Our forests and woodlands are vital for providing timber, improving the environment and protecting our wildlife."

Application forms will soon be available, with the application window opening in January 2018. A range of grants are also available to support the creation of new woodland and sustainable woodland management; see [www.forestry.gov.uk](http://www.forestry.gov.uk) to find out more.

## FREE READER ADS

Send your adverts to: [tegan.foley@mytimemedia.com](mailto:tegan.foley@mytimemedia.com)

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

**Record Power WG200 8in wet stone sharpening system**, complete with accessories. Cost £150, unused, still in box; £100  
**01322 664 388** (Kent)

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

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

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

**Woodstar 200mm planer/thicknesser**; £125 – collection only  
**01572 823 874** (Rutland)

**Walker turner bench-top spindle moulder**; cast-iron; good quality;

in good working order; 1/2hp single phase motor; £130  
**01684 592 968** (Worcs)

**Coronet Minor with circular saw table**; sanding mortising table; planer with thicknesser attachment; single phase; £230  
**01684 592 968** (Worcs)

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

**For sale** – various *Woodworker* magazines from 1946–2013.

All are in pristine condition; collection only  
**07847 394 507** (Derbyshire)

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

**WANTED Woodworking bench** by Sjöbergs or similar  
**07541 409 835** (Leeds)

**Startrite K260 Universal combination machine** or similar  
**07541 409 835** (Leeds)



## Click to it

Brand-new from Bosch, the clever FlexiClick system makes use of interchangeable adaptors to create a truly versatile system that's sure to become a favourite tool for many woodworkers

The concept of a single cordless tool that uses interchangeable adaptors to fit drill or screwdriver bits isn't new. AEG launched their nifty 12V BBS drill with removable chucks a few years ago, though it's virtually disappeared from the UK market. Then there's the more familiar Festool Centrotec system. Bosch launched their 18V FlexiClick tool more recently, while this new 12V version is based around the compact GSR 12V-15 FC drill/driver. Supplied in a slimline L-Boxx, this is designed to clip to similar storage boxes as part of the Bosch Sortimo stacking system. Pricy but effective.

### Drill dynamics

A powerful yet compact tool, it's great for small hands but quite weighty at just over 1kg with chuck fitted. There's plenty of soft-grip rubber around the handle and it balances nicely in the hand. To give some idea of size, with chuck attached the drill is 175mm front to back. Remove this and overall length decreases to 130mm.

With two variable speeds (0 to 400rpm and 0 to 1,300rpm), gear selection is via a slider button above the casing. A gentle squeeze on the trigger enables you to control speed very easily, a benefit when driving small screws. The forward/reverse



This new 12V version is based around the compact GSR 12V-15 FC drill/driver



Supplied in a slimline L-Boxx, this is designed to clip to similar storage boxes as part of the Bosch Sortimo stacking system

push switch is well sited and has direction arrows in case you need them. Alongside is a battery level indicator, green LEDs illuminating for a couple of seconds when you activate the trigger. Although only visible on one side, you're instantly informed of remaining battery capacity, more convenient than reading a display on the battery itself.

A large LED worklight just above the trigger gives a decent spread, though is less effective when you fit an offset or right angle adaptor. The light remains on for 10 seconds once you release the trigger. Also equipped with a 20-position torque collar, this rotates nicely



There's plenty of soft-grip rubber around the handle and it balances nicely in the hand



Two 2.0Ah Li-ion power packs are included, which slot neatly into the handle



A fast charger is standard, with full recharge time about 45 minutes



Gear selection is via a slider button above the casing



Although only visible on one side, you're instantly informed of remaining battery capacity



Maximum torque is 30Nm





Although magnetised, there's no quick-release sleeve here but it's the stubbiest version of the tool



A quick twist of the ring locks the adaptor to the drill, an audible click indicating it's fitted correctly



Both the 90° adaptor...



... and offset adaptor are fitted the same way, each consisting of a hex shank which locates in the existing drive socket



Fitting the keyless chuck is just as easy and this features single-handed jaw tightening

and is not too stiff, so moving between screwdriving and drill functions is quick enough. Maximum torque is 30Nm.

The tool operates with Coolpack batteries, which feature Bosch's Electronic Cell Protection. Briefly, this manages heat generated by the battery in use, leading to longer lifespan. Two 2.0Ah Li-ion power packs are included, which slot neatly into the handle. This should provide plenty of run-time for most users of what is such a small tool. A fast charger is standard, with full recharge time about 45 minutes.

### Adaptors & chuck

In its basic format (with no adaptors fitted) the motor shaft terminates in a 1/4in hex socket. Although magnetised, there's no quick-release sleeve here but it's the stubbiest version of the tool. Attaching the locking ring over the shaft creates a slightly longer tool, the hex socket now with spring-loaded sleeve. A quick twist of the ring locks the adaptor to the drill, an audible click indicating it's fitted correctly. Hex sockets across the FlexiClick system are all 1/4in, so you can insert

standard hex-shank screwdriver or drill bits. Both the 90° adaptor and offset adaptor are fitted the same way, each consisting of a hex shank, which locates in the existing drive socket. You can alter their position simply by pulling each one outwards from the tool slightly, then rotating it. With both offset and 90° adaptors fitted together there are almost endless drilling or screwdriving variations.

Fitting the keyless chuck is just as easy and this features single-handed jaw tightening. With a capacity of 10mm, its jaws will grip bits down to 1mm diameter. Only the 90° adaptor will accept the chuck directly (apart from the drill itself), so if you want offset drilling you'll need hex-shank twist bits, rather than regular ones.

### Conclusion

I must admit the FlexiClick seemed a bit of a gimmick initially, but having used the tool for a while now it's surprising just how useful it is. With the WoodFox pocket hole jig I just left the drill bit locked in the chuck with the screwdriver bit in the hex socket, and likewise when fitting a

kitchen unit panel where space was tight. Switching from one mode to another was a cinch.

The FlexiClick is a fantastic little tool, but to be honest, I probably wouldn't choose it as a main drill/driver. Its 10mm chuck restricts the use of larger bits and of course there's no hammer action. But as a second, compact drill that's more versatile than most it would be a great addition. It's sure to become a favourite tool for many woodworkers, I reckon. It's a perfect solution for cabinetmakers, or anywhere you need to swap rapidly from one mode to another and where working space is cramped. I'm certain kitchen installers will love the FlexiClick. There's even a fabric holster, which you can fit to your belt if you feel that Clint Eastwood moment coming on...

The price reflects its professional rating, but this would mean you could buy further Bosch 12V tools bare, without batteries and charger. Expect to pay around £200 for the FlexiClick if you shop around. **GW**

### Specification:

- ▶ **Max torque:** 30/15Nm
- ▶ **No-load speed:** 0-400/0-1,300rpm
- ▶ **Battery type:** 2.0Ah Lithium-ion
- ▶ **Battery voltage:** 12V
- ▶ **Chuck capacity:** 1/10mm
- ▶ **Torque settings:** 20+1
- ▶ **Bit holder:** 1/4in internal hexagon
- ▶ **Weight without battery:** 0.6kg
- ▶ **Length:** 132mm
- ▶ **Height:** 178mm
- ▶ **Max drilling in wood:** 30mm
- ▶ **Max drilling in steel:** 10mm
- ▶ **Max screw diameter:** 7mm

- ▶ **Typical price:** £238
- ▶ **Web:** [www.bosch-pt.com](http://www.bosch-pt.com)



With the WoodFox pocket hole jig I just left the drill bit locked in the chuck with the screwdriver bit in the hex socket...



... and likewise when fitting a kitchen unit panel where space was tight. Switching from one mode to another was a cinch

### THE GW VERDICT

- ▶ **PROS:**  
Compact drill is great for smaller hands; perfect for drilling/screwdriving in awkward corners
- ▶ **CONS:**  
10mm chuck may limit use of larger shank bits; quite pricey
- ▶ **RATING:** 5 out of 5

# Convenient pocket holes



If you just want a pocket hole jig for the occasional project then the WoodFox is reasonable value, but the instructions are quite confusing and the cost of the system can mount up

**P**ocket hole joinery is a fast way to build carcasses, framework or jigs for the workshop. Whether using solid timber or sheet materials, so long as adjoining edges are cut exactly at 90°, you can't really go far wrong. You need a jig for drilling the pocket holes, plus a unique stepped drill bit and screwdriver bit. If you're new to the

technique then this kit from WoodFox is a good way to get started, though you'll also need a suitable clamp and cordless drill/driver.

The jig is supplied in a plastic storage box, with a 10mm drill bit (hex shank), depth collar and hex key, a square-tip screwdriver bit and selection of zinc-plated screws. These vary from 25mm to 65mm and means you can try a few sizes before ordering more. There's no information stated on what length screw suits a given timber thickness, so it's trial and error here. Screw threads are coarse, so are better for softwood and MDF though can be used with hardwoods, too.



Adjustment is a cinch as you just slide the upper block until your timber is sandwiched against a plastic end stop



Scales beneath the plate mean you can read off the thickness, though you'll need good light to see the graduations



The jig is supplied in a plastic storage box, with a 10mm drill bit (hex shank), depth collar and hex key, a square-tip screwdriver bit and selection of zinc-plated screws



Built-in magnets enable the upper drilling block to sit firmly in a baseplate, which you adjust for material thickness

## Setting up

The jig is made from high-density plastic and consists of an upper drilling block with two hardened steel bushes. Built-in magnets enable this to sit firmly in a baseplate, which you adjust for material thickness. This is necessary to set drilling depth, then is cramped to the workpiece.

Adjustment is a cinch as you just slide the upper block until your timber is sandwiched against a plastic end stop. The stop protrudes below the jig for this function, but can be reversed to sit above it (more on that later). Scales beneath the plate mean you can read off the thickness, though you'll need good light



Correct hole depth is set by laying the drill bit in a channel on the underside of the baseplate, then locking the stop collar with the hex key





A 'V' symbol on the end stop indicates which side to use (they're slightly different) depending on the drilling task



The end stop is simply reversed for drilling corner joints, for example

to see the graduations. Oddly, there are both metric and imperial graduations here, but when you come to match up location arrows on the jig sides (for jig positioning) it's imperial only.

### Drill depth

Correct hole depth is set by laying the drill bit in a channel on the underside of the baseplate, then locking the stop collar with the hex key.

Once that's done you're almost ready to drill. Scales along each side of the upper block enable you to then position the jig for drilling. A 'V' symbol on the end stop indicates which side to use (they're slightly different) depending on the drilling task. The end stop is simply reversed for drilling corner joints, for example.

I found it easy to get both side scales mixed up, which allow for the end stop thickness when drilling (rather like the zero hook on a

tape measure). Once you've got the hang of things it makes sense, though try working on offcuts first. It would help to identify one side with a label or paint to avoid confusion next time around, ideally.

The drilling bushes are spaced at  $\frac{7}{8}$ in centres, making them perfect when working with 50 x 25mm (2 x 1in) PAR softwood. Elongated slots in the baseplate mean you can position the jig easily against a pencil line, should you want accurate spacing across a wider board.

Drilling is straightforward into hardwood, softwood and MDF, though don't forget a cramp. Some pricier pocket hole jigs have one built-in to anchor workpiece and jig together, though a standard quick-grip cramp will suffice here. Once holes are drilled, swap to the screwdriver bit and assemble the joint.

Ideally you'll need a face cramp when jointing same thickness components, such as framework. Maybe WoodFox could offer this as an optional accessory?

### Conclusion

Instructions are confusing and peter out once you've set the jig and drilling depth. There's nothing on actual jig positioning or using a cramp, so it's really a case of experimentation on offcuts. And you can't store the drill bit in the box once the depth collar is fitted, which is slightly irritating.

If you just want a pocket hole jig for the occasional project, then the WoodFox is reasonable value. Initially frustrating to set up, once you get the hang of it the system does grow on you and it's convenient to use. It's more economical to buy just the jig, drill bit and screwdriver bit, though. A stripped-back package (without screws) will set you back £21, so with this kit you're paying around £15 more for a storage box and 50 screws. And if you need them, packs of plastic plugs to fill the holes are available in five colours. **GW**

#### Specification:

- **Kit contents:** Twin jig with base;  $\frac{3}{8}$ in drill bit; 150mm driver bit; depth stop collar; hex key; 50 x assorted screws; full instructions and a fitted storage case
- **Product code:** WF-MP2HK
- **Typical price:** £36
- **Web:** [www.johnsontools.co.uk](http://www.johnsontools.co.uk)



Some pricier pocket hole jigs have one built-in to anchor workpiece and jig together, though a standard quick-grip cramp will suffice here



Elongated slots in the baseplate mean you can position the jig easily against a pencil line, should you want accurate spacing across a wider board



Once holes are drilled, swap to the screwdriver bit and assemble the joint



Ideally you'll need a face cramp when jointing same thickness components, such as framework

### THE GW VERDICT

- **PROS:**  
Fast to adjust to different thicknesses; easy to use once you've got the hang of it
- **CONS:**  
Side scales easy to mix up; no face cramp option
- **RATING:** 3.5 out of 5



## Compact & simple measuring

Designed to make measuring simple, this no-frills laser device from Bosch is compact and handy for any pocket

**W**ith mobile phones seemingly increasing in size, laser measuring devices appear to be shrinking. It's certainly true of the new Zamo from Bosch, which is compact enough to keep in your top pocket.

Powered by two AAA alkaline batteries (included), these sit snugly in the rear of the tool and should give up to five hours of use. The only control is the on/off button, which doubles up for measuring. A flashing icon indicates the laser beam is active and will give an immediate reading. Pressing the button a second time switches off the laser but retains the current value. Activating it again gives a new reading with the previous measurement also



The only control is the on/off button, which doubles up for measuring



Measuring from the back edge of the tool, you place this against a reference surface, switch on and read off the distance in metres

displayed. Sounds complicated, but it's not! The Zamo is a piece of cake to use, unlike some digital devices. Measuring from the back edge of the tool, you place this against a reference surface, switch on and read off the distance in metres. If there's no activity after five minutes, the Zamo switches itself off. When batteries are low a warning symbol appears, with 15 minutes of juice left. You're on empty when this flashes.

### Indoor measures

The shiny screen is similar to a smart phone, so will attract dust and fingermarks easily. Although not designed for exterior use, for interior measurement the display is extremely clear. This is a metric-only tool, with no facility

### THE GW VERDICT

- ▶ **PROS:**  
Easy to use; battery warning symbol
- ▶ **CONS:**  
No area calculation possible; no protective pouch
- ▶ **RATING:** 4 out of 5

### Specification:

- ▶ **Laser diode:** 635Nm
- ▶ **Laser class:** 2
- ▶ **Measurement range:** 0.15-2,000m
- ▶ **Measurement accuracy – typical:** ±3.0mm
- ▶ **Measurement time – typical:** 0.5s
- ▶ **Measurement time – max:** 4s
- ▶ **Automatic deactivation:** 5 mins
- ▶ **Weight:** 0.08kg

▶ **Typical price:** £49.99

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

to switch to imperial. Maximum range is an impressive 20m, with + or - 3mm accuracy over this distance. The red dot is still easy to spot at this distance, so aiming the laser is easy enough even if your eyesight is not so good. You cannot calculate areas with this tool, meaning it's less useful when estimating materials for flooring or walls. No protective pouch is provided, either, so I'd guess the screen could become scratched over time.

### Conclusion

If you want a basic, no-frills laser device then the Zamo should fit the bill. And in case you're wondering, I haven't a clue what the name means, though it appears to have some relevance to space and black holes! **GW**

## Paint splattered floors no more!

Ideal for protecting your floors while painting, these waterproof paint mats are hard-wearing and waterproof

**P**ainting or varnishing a door or skirting may not be every woodworker's cup of tea, especially when it comes to trying to keep the floor or carpet clean. Dust sheets can leave fluff deposits if you're not careful, while newspaper can spread the paint as you move it around. Although the use of wide masking tape around the perimeter of a room helps, you still need to cover the area where you're working. These paint mats from Betsy solve the problem rather nicely.

### Flexible & easy

Made from a very tough translucent plastic, both mats have brightly-coloured, stitched fabric

borders, so you can see the edges at a glance. The larger mat measures 1,000 × 750mm, while the smaller version is 800 × 500mm, which is perfect for laying in a doorway. For easier positioning there's a looped handle at one end of the small mat. As they're flexible you just fold them up at the end of your decorating session.



Betsy Paint Mats are waterproof, so it's no problem washing down woodwork or cleaning them up afterwards

### Conclusion

Betsy Paint Mats are waterproof, so it's no problem washing down woodwork or cleaning them up afterwards. They'd be handy to protect a workbench if applying a stain or finish to a project, too. **GW**

### Specification:

- ▶ **Sizes available:** Large mat – 1,000 × 750mm; small mat – 800 × 500mm

▶ **Typical price:** £12.99 (plus P&P)

▶ **Web:** [www.betsypaintmate.com](http://www.betsypaintmate.com)

### THE GW VERDICT

- ▶ **PROS:** Tough, flexible plastic; easy to clean
- ▶ **CONS:** Nothing, really!
- ▶ **RATING:** 4.5 out of 5





**BOSCH**

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## Tear-free cuts on both sides

It's in your hands. Bosch Professional.

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



T308BOF

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precision for HardWood

SWISS  
MADE

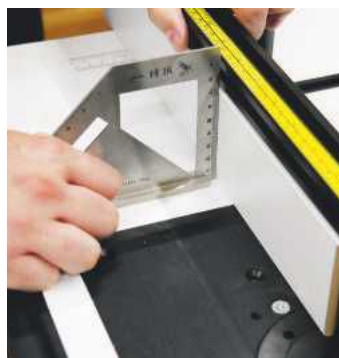
**BOSCH**

# Feature-packed router table

This new router table features a solid setup and allows you to easily maximise the versatility of all popular portable routers



The insert plate has a series of levelling screws to get it flush to the table surface



A square shows the fence facing to be perfectly square to the table



## WIN!

There's a whole host of Trend kit up for grabs, including the WRT Workshop Router Table, T5 & T11 routers, & the T35 M-Class Dust Extractor. Each of these pieces of kit will be reviewed over the coming months, so look out for entry details in GW327. With a prize total of over £1,600, make sure you don't miss it!

If you have the space for a dedicated router table it's a sound investment, especially if you can afford to keep a router permanently fitted, which has the benefit of allowing you to use it as a small spindle moulder type setup.

But it can be a balancing act when looking at tables and trying to get a good work surface and a fence of equal stature, so it pays to spend a little more to ensure you get a table that gives you the best of both worlds.

### Various configurations

Trend's WRT table ticks the boxes for stability and rigidity of the fences, and when married up with the Trend T11 router, it really comes into its own as the 6.35mm-thick aluminium insert is drilled to allow the height adjuster to drop through to the router for fine adjustment from above the table.

The plate is drilled for all the Trend routers as a direct fit with set screws into the router base and any other router using this configuration will fit directly. The plate can be easily drilled for other makes and models, however.

If you go for the T11 router, there's also a set of quick-release lugs available so you can take the router in and out of the table easily for hand-held work, but whatever your choice of router make or model, operating it is easy with the well positioned front-mounted NVR switch just below the table surface. This allows the router to be plugged into it so it always remains ready for action, but isolated by the NVR until needed.

You still need to get beneath the work surface to release the cutters when it's fitted into the table, but the square tubular frame design offers rigidity without any restrictive bracing or aprons, so access to the collet isn't hampered.

### Table & framework

The table and framework requires assembly before you can get down to work, but the superb instruction manual is clear and concise with excellent diagrams. Another benefit is that it is written in 'proper' English, rather than a poor translation from another country, which often serves to confuse more than enlighten, meaning that it doesn't take long to get things set up and ready for action.

The open, straight-legged framework also has the advantage of featuring lower rails, allowing a simple lower storage shelf to be fitted or a storage cabinet to be built beneath the table, which is always useful.

For a static operation the table is supplied with adjustable levelling feet, but if you need a mobile option, a heavy-duty castor set is also available. This is worth considering if space is tight as the table weighs in at around 27kg without the router fitted, so it's quite a lump to shift around regularly if you don't own a wheel set.

### The business end of things

Moving back up to the business end of things, the look is very similar to that of the CRT Mk3 version with a laminated table and solid one-piece aluminium fence extrusion.

The 804 × 604mm table gives a good referencing surface to support the work as it passes the cutter and with a standard 19mm slot for a mitre fence, you can upgrade to an alternative fence if you require a finer, more adjustable option.

The supplied alloy mitre fence is still of



Checking the fence facings with a straight edge showed them to be smack on



The sponge helps prevent dust ingress behind the fence when routing

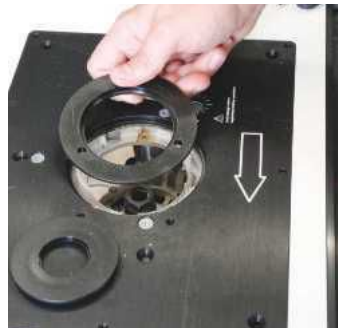


These two rods slide behind the outfeed fence to pack it off for planing functions





Two locking knobs secure the fence with twin scales on the table, thus aiding positioning



The cutter aperture can be closed down with the clip-in insert plates



With a T11 router in place the cutter height can be easily altered from above the table



Adjustable featherboards are supplied for both vertical and horizontal control



Once set up the featherboards keep the work tight to the table and fence for great results



A lead on pin is provided for curved work; it stores on board when not in use



You can see the principle here, providing a pivot point to introduce the work to the cutter



The router is controlled by plugging it into the NVR switch provided

a good standard, however, with a snug fit and smooth action for maximum control and consistency through the cut, so you shouldn't need to look to upgrade unnecessarily.

Ensuring the work runs smoothly requires a snag-free and flat surface. The jacking screws around the perimeter of the aluminium insert ensures fine-tuning the flush fit to the melamine table surface is a cinch to achieve, and once done, four additional screws secure the plate.

Two removable inserts close down the aperture for different diameter cutters and with a maximum diameter of 86mm available, panel raising cutters and other bigger moulding cutters are well within its grasp, as long as the router being used is capable of driving them.

The fence is where a table has to cut the mustard if it is to make the grade, as any misalignment, twist or play will result in poor performance. Checking this fence for these important factors proved to be accurate and true across the board and the sliding melamine fence faces helps to keep the timber running smoothly. As we did, you may find that the sponge on the fence at the cutter aperture end of the facings prevents the fences from sitting flat to each other if they are closed down enough to sit over the sponge, unless they are tightened very securely, so it may help to trim a little of it away if this is the case.

We'd look to buy a few threaded inserts from Trend to allow you to swap the melamine ones for timber or ply equivalents, which will allow you to tack sacrificial fences for zero clearance fence work as and when needed, so that the melamine ones remain in good nick, and the fence design allows this to be done with ease.

'T' slots in the extrusion keep the cutter guard and vertical featherboard in place and it allows them to slide out of the way easily for cutter swaps without needing to remove them.

The mitre slot in the table also doubles up as a slot to secure the horizontal featherboard so that the work can be held in both planes, which helps to maintain consistent pressure as the work is moved through.

Two long square section rods store on the fence and can be used on the outboard side, slid into channels in the extrusion to pack the fence out by either 1.4 or 2.4mm for edge planing work with a straight cutter fitted, which I found to be a useful function for jointing boards.

The fence can be backset away from the cutter up to 225mm for running plough grooves or mouldings in from the edge of a panel or workpiece and are great for running wider boards through for making moulds on the face for false panel work, which gives the look of narrower strip moulds, such as wainscoting or matchboards. There's also a supplied lead on pin that stores onboard and allows curved work to be undertaken easily.

At the rear of the fence the angled dust port is compatible with the 63mm dust extraction systems if you want to 'plumb it in' to such a system, or you can attach it to a portable extractor with suitable hose or adaptor, with the open frame/lower shelf option acting as a great space for siting one.

## Conclusion

The WRT does what any router table should do: hold its settings securely, while being easy to adjust and operate without any faff or rigmarole.

It doesn't have any bells and whistles as such, but it doesn't need to: we've seen a fair few tables that offer a lot of additions, which while sounding like 'must haves', are invariably stocking fillers that prove unusable, inaccurate or both.

So a table that has nothing but a solid setup and performance along with locking and adjustment knobs of equal stature has to be a good thing. Fit the T11 into the table and the whole kit and caboodle will enhance what is already a solid and dependable workshop workhorse. **GW**

## Specification:

- ▶ **Table top size:** 804 × 604 × 35mm
- ▶ **Table height:** 890mm
- ▶ **Router cutter aperture:** 98mm
- ▶ **Max cutter diameter:** 86mm
- ▶ **Insert ring sizes:** 31.8mm; 67.5mm
- ▶ **Backfence height:** 68mm
- ▶ **Dust spout aperture:** 57mm

▶ **Typical price:** £399; list price: £478.80

▶ **Web:** [www.trend-uk.com](http://www.trend-uk.com)

## THE GW VERDICT

### ▶ PROS:

Square and solid fence; large table area; rigid leg frame; easy adjustments; perfect companion to the T11 router

### ▶ CONS:

Sponge on fence can prevent fence facings from aligning flat

▶ **RATING:** 4.5 out of 5

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# BARNABY RUDGE

Here be dragons: **Dave Roberts** falls prey to some mid-summer superstition



**PIC 1.** Good medicine: the rowan berry's uses account for part of the tree's place in folklore; its timber, meanwhile, is yew-like in its colour and texture

**"K**ee up your spirits," says Grip, the pet raven belonging to the titular hero of Dickens' (largely unloved) novel, *Barnaby Rudge*. A simple soul, Barnaby finds himself in the midst of events but never their master, and what with the distraction of jobs at The Old Vic' (a 'distraction' is my collective noun for woodworking tasks demanding simultaneous attention) being compounded by the pleasurable disruption of summer visitors, I'm beginning to understand how he felt. Only yesterday, for example, as I was paring back a tenon to ease its fit, an uncomfortable realisation stole upon me as I saw how almost infinitely small was the contribution of my paper-thin shavings in reducing the total weight of the houseful of jobs, which I could almost hear

circling and separating me from any sense of a beginning and especially an end.

## A shiver of superstition

Still, "never say die," was Grip's maxim; and besides, this not-touching-the-sides-or-bottom sensation may be quite in order: it's said that the human being is as many orders of magnitude larger than the smallest object in the classical universe (don't ask me about quantum physics), as he is smaller than the largest object. If that's so, then our natural place is at a kind of median; a halfway house on the road from an inconceivably small 'here' to an incomprehensibly large 'there' – a dizzying perspective. For its part, the Old Vic' lies at other medians – between churchyard and old toll road, village and field, plain and mountain





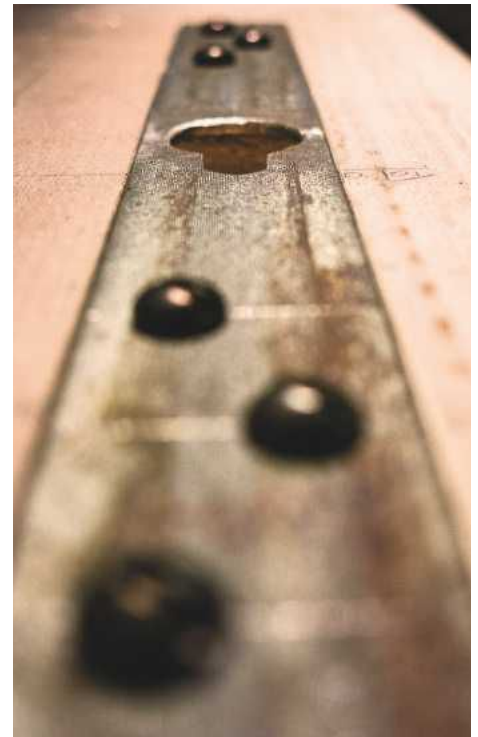
PIC 2. The Victorians are associated as much with superstition as science; they were the ones who made the pagan symbolism of the evergreen a part of the British Christmas



PIC 3. Heavy-duty keyhole brackets made from 30mm-wide lengths of 3mm steel



PIC 4. The keyholes were sized to accommodate 10mm self-tapping masonry bolts allowing only a couple of mil' play around the shank



PIC 5. Rebating the brackets in the mirror's frame greatly eases the load on the six retaining screws

– and boundaries are always strange places. At times, I find myself halfway between the rational and the superstitious, and even in the light of full summer, Grip's 'spirits' begin to mean something other than mere 'morale'. Take, for instance, the matter of the awkwardly placed young rowan in the front garden (Pic.1).

There's no mystery to a self-seeded rowan, of course – they're vigorous pioneers – and there are practical and anthropological reasons for the respect that has been afforded to them: for a start, the berries are a useful source of vitamin C, and have other medicinal properties. But they're also woven into lore and legend in a way that resonates today, if only as a reluctance to remove what's regarded as a protective presence along boundaries. You may laugh, but when an energy company workman clearing branches from around power lines pointed out that the rowan was growing rather tall, I invited him to cut it as required but the gang passed it by. They might've decided to finish early, I suppose, but some think that it's bad luck to interfere with a rowan.

### Practical magic?

There are others, however, who value the rowan for its timber: yew-like in its density, flexibility, and strength, I gather it makes for good carving and turning, and is ideal for tool handles, or even the limb of a bow. Still, a faint superstition lingers, so if I take down the rowan as planned, my intention is to make amends by using as much of the wood as possible.

For the first 125cm, the tree's trunk is clear, and about 21cm in diameter, which isn't large, but big enough, perhaps, for me to have it sawn into boards about 1.5cm-thick. A simple through-and-through cut will be the most practical way to saw the timber, though the resulting boards – sliced at a tangent to the growth rings – will be more prone to cupping than quarter-sawn boards (Fig.1); a piece as small

as this, however, doesn't allow the luxury of the waste that quarter-sawing's more stable, radial cuts would involve. Allowing for a bandsaw blade kerf of 0.3cm there might be eight boards to be had; given – what would you reckon? 20% waste? – this might yield a little over 100cm total width. It'll be a slender harvest, but long and broad enough, I think, and deep enough in terms of provenance to conjure the top and apron of a light-framed console table, which (if I make a decent job of it) could find a home in The Old Vic's hallway. There, to appease tradition, the pale rowan wood could continue in its role as a guardian of the house's main entrance. It'd be a handy thing on which to put a lamp, too, of course – to, you know, keep off the shadows.

Is there a place for superstition – even with a practical, woody outcome – in the restoration of a rectory that belongs to the Victorian era, which is popularly thought of as a time of rationalism? Indeed, if *Barnaby Rudge's* conniving MP, Sir John Chester, reflects anything of the period, it isn't so much the rationality of science, industry, engineering, etc., but a streak of cynicism that sounds strikingly modern: "The world is a lively place enough," he declares, "in which we must... sail with the stream as glibly as we can, be content to take froth for substance, the surface for the depth, the counterfeit for the real coin."

If faced with surface-without-depth, you can give me a dose of superstition every time. Fellow Cheshireman, the author Alan Garner, has made an art of weaving folkloric threads back into a modern world whose sense of history and place has been worn bare by modernity. Some threads are the rich stuff of border legend (his *Owl Service* has a particular resonance hereabouts, but that's another story); some is practical knowledge that centuries of handling burnished into workaday wisdom (the woodcraft that underpins, for example, Baden Powell's *Scouting for Boys*), or memorialised in verse and story. In *Boneland*, >

## OMNE TRIUM PERFECTUM



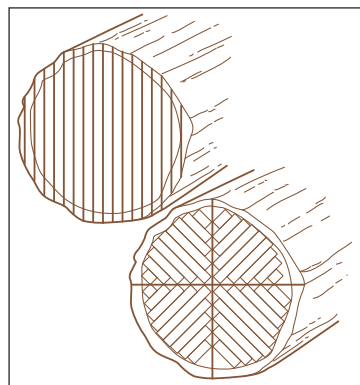
**PIC 6.** Could this slender, oak tripod be the makings of some fine-boned table legs?



**PIC 7.** Andrew Laphthorn's nautically inspired 'Tripod' table: the head or hub involves some clever mortising and radiused shoulders on the tenons

If 'omne trium perfectum' – good things come in threes, to translate roughly – then my latest experiment must have something going for it. I couldn't help buying this little tripod (**Pic.6**) which, with its slender, oak framework and neat brass fittings, suggested itself as the legs of a fine-boned lamp stand. Part of the idea came from Andrew Laphthorn's nautically flavoured Tripod design (**Pic.7**) – [www.laphthornfurniture.co.uk](http://www.laphthornfurniture.co.uk) – though his design is rigid, of course, by dint of having a turned 'head' with cleverly mortise & tenoned legs. My reason for dabbling with the articulated legs of the tripod is that I can adjust their spread and therefore the diameter of a top, as well as the height of its head to suit a particular spot that I have in mind.

It's just a test drive, of course, a sketch in wood; as ever, though, I've given myself not one job but several. There's a broken fitting to be remade from sheet brass; to set the spread of the legs and firm things up, I'll also need to fashion some stretchers either to mirror or complement the construction of the legs. Then there's the top – glass, I think, so as not to appear top-heavy – to be attached in a way that's neat and effective. The wood's sitting in the workshop; let's see how long the prototype takes to emerge...



**FIG 1.** Through-and-through and quarter-sawing compared: the latter involves more waste and produces narrower boards, but the benefit of quarter-sawing is the fact that the growth rings – along which the greatest shrinkage occurs – are more perpendicular to their face of the boards than with through-and-through sawn boards, which translates into greater stability



## NEXT MONTH

"Time has been lost and opportunity thrown away, but I am yet a young man, and may retrieve it"

for instance, one of Garner's characters reminds us that the trinity of (haw)thorn, ash, and oak is the best combination of firewood for heat, while birch, holly and fir make for the brightest fire (for more on trinities, see Omne trium... above).

## Mirror, mirror

'Course, we mustn't forget that it was the Victorians who brought the pagan symbolism of the evergreen into our homes at Christmas (**Pic.2**), or who perpetuated the superstitions around mirrors. However, it wasn't so much fear of supernatural gateways that made me nervous when I was hanging a mirror in The Old Vic' recently – it was the need to make 60kg of glass in a 2m-tall frame secure on the

wall over the stairs. My solution was to take a leaf out of Isambard Kingdom Brunel's book and design on a massive scale by making keyhole brackets from 30mm-wide lengths of 3mm-thick mild steel (**Pic.3**). It's jobs like this that make me wish I had a really good pillar drill.

Rather than simply screwing the brackets onto the back of the frame, however, I fitted them in close-fitting rebates in the woodwork. Because most of the force at work on the bracket is in shear – the greater part of the mirror's weight is acting vertically, of course – rebating the brackets so that some of this load is transferred from steel to wood greatly reduces the strain on the six screws securing each bracket (**Pic.5**); these screws are, in turn, more than equal to the tension created by that small part of the mirror's weight that is trying to fall outwards.

Ah, but wait! The biggest trick to this operation was not making or fitting the keyhole brackets, but positioning the self-tapping 10mm Thunderbolts (masonry bolts) on which they're hung (**Pic.4**). If it hadn't been for a friendly voice of 'been there, made that mistake' experience, I'd have carefully fitted the brackets in the frame and then tried to translate their positions to the wall, in which case I'd have found that – SDS drill or not – stone walls don't lend themselves to the millimetre-perfect drilling. The way to keep things level, then, is to drive in the fixings – the vagaries of the stone meant mine ended up at different levels – and transpose these positions to the back of the mirror, and fit the keyhole brackets.

It took four people to hang the mirror; it goes without saying, of course, that no-one wanted to test the superstition about seven years' bad luck.

As a footnote, the Grip in *Barnaby Rudge* is a caricature of Dickens' own pet raven of the same name, which allegedly died from eating chips of lead paint (another reason to add to last month's argument for a modern and/or natural approach to paint). According to Dickens' correspondence, the bird's last words weren't "never say die," which would have been wonderfully Gothic and ironic, but, "Halloa old girl!" – so much better than Poe's "Never more!" **GW**

## LOST SOLE?

Did you know that the Northampton Museum keeps a record of 'concealed shoes'? Apparently, hiding a shoe somewhere around a house is a centuries-old charm: "People often hid old boots and shoes in chimneys and walls," says the museum's website, "to bring good luck to their houses and to ward off evil spirits. The shoes are always worn out; very often there is only one shoe; many of the shoes are for children." The museum's register currently lists around 1,900 concealed shoes and, apparently, the practice dates from at least the 1500s, though some sources suggest finds dating back to the 1300s – so it's clearly a 'lasting' superstition.

What appears to be a concealed shoe came to light at The Old Vic' when Dai the Sweep began clearing the chimneys: the remains of this upper and sole from a child's boot came down with Goodness knows how many years-worth of birds' nests and an amount of mortar and stone. It was finely made, and though it isn't modern we've no idea how old the shoe is. I've read, though, that, "metal eyelets for lacing were patented in 1823 by Thomas Rogers, though they were slowly adopted. It was not until 1874 that the eyelet-setting machine came into use, increasing the popularity of metal eyelets" – [www.footwearhistory.com](http://www.footwearhistory.com).

Some might suggest that it could've been dropped by an enterprising jackdaw trying to create some purchase for twigs in the wide chimney, but I'm not so sure



**PIC 8.** This shoe came to light when sweeping a chimney; is it an example of a 'concealed shoe' – a charm to bring good luck and ward off evil spirits?



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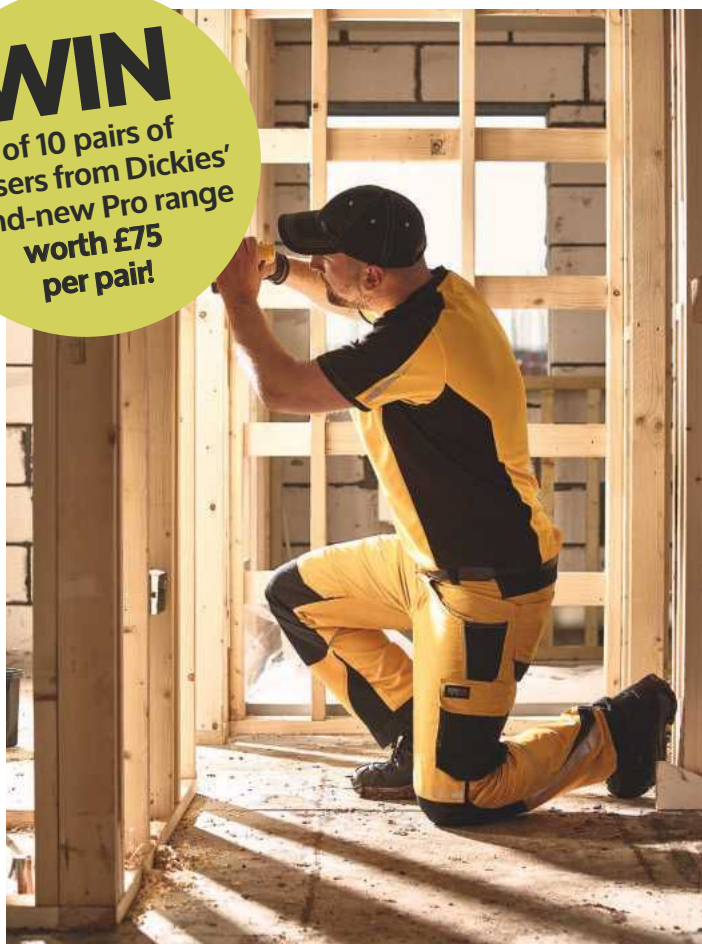
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# FULL BOARD

Edward Hopkins sets the table for James Hopkins

I was grateful to have Amel around (from France to volunteer in the garden). Moving a heavyweight table like this by myself would have been impossible









PIC 1. Stick marks still visible in the planed top. Will they fade?



PIC 2. The shoulder is necessary to make the leg sit squarely and securely. No, it probably isn't conventional to cut it like this, sliding the timber across the saw blade, but how else would you effect this shallow step on the top of the legs? A router, perhaps, but this would be nowhere near as quick and efficient

**H**ere's the brief: I have three 6ft lengths of prime 1in ash, 18, yes 18, inches wide; a table-top-and-a-half if ever I saw one. Now that James and Katie's kitchen is all but done, their dining table (which I rescued from a skip a generation ago) is looking decidedly tired. So far, so straightforward, I thought. The kitchen is simple and the table would be too, even verging on the rustic. As they are too wide for my planer/thicknesser, I'd have to

plane the boards by hand. I'd leave the surface slightly scalloped by the blade. The top would be clipped down to the frame with buttons as usual, but beyond that, the boards would take their chances. If they cupped or twisted a little in their new environment, so be it. I'd leave a gap between the boards so as to pre-empt any discrepancy due to shrinkage, but also because it would emphasise the boards' great width. I saw four square legs, a top frame but no lower stretchers so as not to foul diners' feet. This frame, I thought, would look good painted in similar colours to the kitchen, but the top would remain its natural colour, again to the glory of the wood itself. Then it all went AWOL.

'6ft', said James, 'is too long for the room. 5ft is better. Can it have a 2ft flap to extend it so that we can seat eight?' 'You mean two 1ft flaps?' I asked, imagining little arms folding out from the ends as supports (as in a Pembroke table). 'No', said James, 'one flap'. I didn't argue. Well, not for long. James often has a different take on things to me. That's hardly surprising. But apart from not wanting to over-ride his ideas, I recognise that they have a worth and authenticity of their own. What better part can a father play than to allow his children to be themselves?

### A change of heart

Cutting the ends off my splendid ash boards was a different matter. I didn't want to. I suddenly didn't know what I wanted. My clear vision of a table had dissolved. I now had no vision, just a collection of elements that didn't seem to go together. How would I hinge the flap? I wouldn't cleat the wide boards because that was mixing styles (and would be quite difficult to achieve well on such wide timber). But I



couldn't hinge from their end-grain. And I'd have to keep the boards of the flap tied down to some sort of frame. What would keep the flap up? I thought about drawer runners - I had a few pairs left over from a previous job - beautifully made, smooth, solid, and, incidentally, cheap ([www.ironmongerydirect.com](http://www.ironmongerydirect.com)). Beyond that I didn't know. Perhaps I'd make a table with other boards, jointed, cleated and hinged with a rule joint - a more traditional and sophisticated method of construction. But it was too late. James liked the thought of wide hand-planed boards. He'd really like it if I could use them. It was then I had a change of heart. Whose table was this to be? What was I keeping these boards for if not for such a commission? So what if I had to cut them down? They were still magnificent. What better project could I possibly have but to make something special for my son, something that would outlast his kitchen when he moved to another house? Something that would outlast me?

### Systemic or organic?

I've probably said this before: there are two extreme ways of designing. The 'systemic' method is to draw up plans in comprehensive detail and then follow them to the last dot and dash. The 'organic' method is to have a general concept of the design - sketches of the way it works and how it looks - but to start work without having fully thought it through. The design hatches out as you go. It is a risky method and you do have to do a lot of thinking in between stages, but the systemic method is problematic too because two-dimensional plans only partly relate to three-dimensional structures (however many views you take, and unless you are computer-fluent). It is a lot



**PIC 3.** This trenching would be better done with a router in a jig so that the tenoned rails would fit uniformly snugly into it. Instead I used an offcut as a guide and trenched on a mitre saw. It is worth remembering to sand the rails first because this makes them thinner, but here, on the underside of the table, such refinement was not necessary

easier to imagine a structure when you have pieces of wood before you. Besides, I'm impatient. A certain amount is already known. I'll get those planks out and see how they are. I can plane them. Katie wants the table to have tapered legs so I can machine some 2in ash (the thickest I have) and glue sections together as 4in square leg blanks. I know the size of the rails - 120mm max. James said - before they impinge on the sitters' thighs. The organic method is to do what is >



**PIC 4.** The basic frame jointed. I like this construction and I think I'll use it again on a simple table (more-or-less as seen here). The legs were later held in place by a single big screw. Being able to dismantle a table so thoroughly makes transportation easier

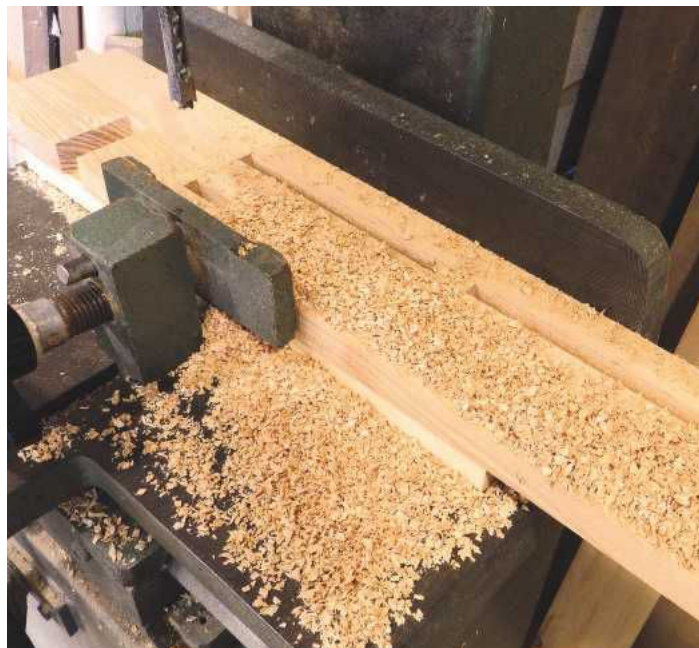


**PIC 5.** The drawer runners are beautifully engineered, telescoping out smoothly and remaining rigid in the vertical plane. Quite how rigid when put to such a task as this, I wasn't sure. No amount of theoretical design would have helped me here. I had to make the whole frame before I could know if it would work - albeit without the additional weight of the flap boards. On the other hand, I thought, how could it possibly not work? What would give way, buckle or break? Mmm





**PIC 6.** The drawer-runner idea seemed viable, but the frame of the flap was in the way. Square holes would allow the runner to slide through the flap frame to support it. And if I was going to all that bother, I might as well use runners at the other end and provide a drawer for place mats or suchlike. The drawer turned out to be shallow because my priority remained the structural integrity of that part of the frame. This was turning into quite a heavy structure and it needed to be strong. I couldn't think of a sensible alternative to an MDF drawer bottom (I had 9mm in stock) so that made it even shallower but still, I hope, useful



**PIC 7.** A laborious way to cut the holes for the runners and, here, for the drawer but, not being a lover of the router, I saw no other way. I've left little nibs in place until the end so that the mortiser cramp doesn't bend the thinner outer strip

inevitable without knowing what will happen next. So, over three hours of hand-planing, and a couple more of leg blank assembly, I did.

### The train of thought

If the rails were cut to 45°, I could use box hinges on them. Two hinges were not enough for the flap, but four might be sufficient. A pair of rails could contain the leg and, hey, a couple of cross rails would contain it completely. Rebating the cross rails into the side rails was not a definite enough joint, so I'd pierce the rail with little tenons. Then I thought to wedge the tenons. This has the advantage of expanding the tenon into its mortise, thus eliminating minor gaps; it solidifies the joint; and it provides a decorative detail (**Pics.8-11**).

The 45° ends on the rail would allow a flap similarly cut at 45° to fold down vertically. The flap frame, not dissimilar to the main frame, would need to be tapered so as not to be unduly heavy, either physically or visually. I would wait to see how it looked before tapering the legs, because the two would have to accord. A single flap is an unusual construction. When I came to it, rather than trying to 'normalise' it, I chose to accentuate its oddity by a strong tapering of the legs.

### The bird of panic

I checked and double-checked the theory in my mind, but reality, as we all know, has a habit of biting you on the unexpected. It was only when I'd fitted the little boards to the flap that a bird of panic flew through my



**PIC 8. Wedging 1:** Arguably the slots in the tenons might slope in a little towards the body of the wood so that there is no danger of the remaining sliver shearing under the strain of the wedge. Arguably also the mortise should be flared to accept the wedge and, in effect, create a dovetail joint. I did neither



**PIC 9. Wedging 2:** I'm rather proud of this. Previously I've cut wedges on the bandsaw more-or-less by eye, but in this case I thought you (and I) deserved something better. The sliding guide is slewed at 7.5°, and a stepped stop is cramped to it. Another stop prevents this carriage moving too far. A strip of wood is machined to the correct thickness and then chopped into half a dozen small sections. Each of these is sawn, flipped over, sawn again, turned round and repeated. Then the stepped stop is adjusted for the next saw cut. This arrangement took a while to work out and set up, but once done, I could have cut a thousand identical little wedges while listening to the afternoon play





**PIC 10. Wedging3:** Before the wedges are sliced off, the cut end is wrapped in masking tape so that they don't fly everywhere or get caught by the blade. (I've shown a sequence in one shot: in operation the table should be clear)

chest. The flap was heavy. Really heavy. I wasn't at all sure that the runners would hold it. There was, however, nothing I could do now but to wait and see. After an infuriatingly frustrating time trying to screw the buttons of the main boards up into the table (it standing upright on the bench), Amel helped me turn it over. Screwing downwards was a cinch. Then came the flap's maiden voyage. I had already adjusted the runners, tilting them up slightly to accommodate the great weight of the flap, and I had notched them so that they'd locate on the flap's outer rail. I lifted the flap, positioned the runner and let go. Nothing happened. I bore down gently on the flap. Nothing happened. The bird of panic sat on a telegraph pole and went to sleep. The table worked! **GW**



**PIC 13.** A silly error. Because of the centre of gravity of the flap, it doesn't fall fully vertically and so the 45° meeting doesn't close up. Ah well!



**PIC 11. Wedging 4:** What satisfaction little things can offer! Having jiggged up every stage of the way, each identical pair of wedges drove home simultaneously and perfectly, later to be sanded smooth



**PIC 12.** The drawer was given a secondary front so as to be invisible (which James fancied). The bottom of this front is pointed down so as to provide a hand-pull, and to relate to the slanting lines elsewhere on the table. I retained a gap between the boards to emphasise their width, though I concede that it is a little impractical as crumbs and spillage can fall through. If J & K wish to close it up, they can



**PIC 14.** It feels like half a ton but it stands on tiptoe. (More thorough fixing yet to be done)

# Planing by hand

I don't do a lot of this, and I have never planed the surface of such big broad sheets of timber, so James' dining table was a learning experience for me. I knew that the blade of a smoothing plane had to be slightly curved so as not to leave track marks in the timber. And, of course, it had to be very well honed. I haven't had a lot of success with honing guides. One of them worked well until the plastic wheels stopped turning, almost immediately acquired a flat and never turned again. Another would not have been wide enough for a No.4 $\frac{1}{2}$  smoothing plane blade. I gave up in the end and did it all by hand and by eye, with correspondingly erratic results. Only recently did I seek out guides again.

## In use

The Veritas guide comes in five parts. The holder shown in the foreground of **Pic.2** has a cambered roller so that it can be rocked from side to side. This puts the slight curve on a plane blade edge but (as the instructions state) it does not by itself form it: you still need to pay attention. The holder at the back has a flat roller and a self-centring clamp for chisels and plane blades. Here it has the calibration guide attached. This works on both holders to establish a precise angle – alternatives being colour coded as 1. High angles, 2. Standard angles and 3. Back bevels (slight bevels on the



**PIC 1.** At one end of the scale is a £5 honing guide from Screwfix. It is small with one central wheel and no method of calibration, so an amount of dexterity is involved. It is not wide enough for my plane blade, but I wouldn't knock it: it is considerably better than nothing and represents incontrovertibly good value for money



**PIC 2.** At the other end of the scale is the Veritas Deluxe Mk.II Honing Guide Set. It costs about £100, but is a beautiful piece of engineering, immaculately produced and worthy of a place on your mantelpiece whether or not it ever sharpens a blade

underside of a main bevel used to plane difficult grain) where the guide runs not on the sharpening stone but below it. A clever refinement is a cam adjustment on the roller so that with the twist of a knob the grinding angle can be increased by one or two degrees to form the final 'micro-bevel' (**Pic.6**).

## Conclusion

And what was the result of my experiment? Well, I am not convinced. I am thoroughly convinced by the Veritas system. It is expensive

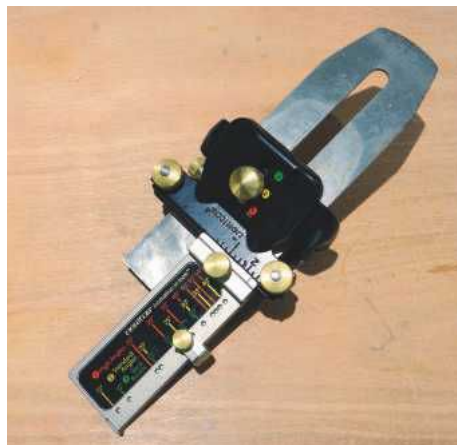
but it is also a joy, and Christmas isn't that far away. As for the hand planing itself? I achieved the slight scalloping that James and I both wanted, but not without roughing up the grain in places no matter which way I worked. As a precursor to sanding, hand planing would be entirely appropriate, but as a final finish it is decidedly rustic. This was in keeping with my original vision, but it remains to be seen if James and Katie endorse it. I have left the table unfinished so that they can decide and, perhaps (I need to sit down), he can do it. **GW**



**PIC 3.** As always, the back of the blade must be flattened, at least at the cutting edge



**PIC 6.** The clever little micro-bevel knob clicks at 90° increments. Rotating it brings the roller down just a little so that a finer edge can quickly and easily be honed



**PIC 4.** The calibration guide is fitted and the blade inserted. It is held square by the guide



**PIC 7.** You can see that even with this brilliant device I have managed a less than brilliant result. It would take a little more practice to obtain an even curve



**PIC 5.** If you have to restore a badly sharpened blade it will take a little time, beginning on a stone such as this at 400 grit, then flipping it over to finish at 1,000 grit. Once the correct angle is established, it takes a matter of seconds and just half a dozen strokes to bring back a perfect edge. The Veritas guide is so accurate that the precise angle can be repeated, and work kept to a minimum



**PIC 8.** As a precursor to sanding, hand planing would be entirely appropriate, but as a final finish it is decidedly rustic

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# Doing the Peter Sefton Furniture School proud

Here we look at a stunning showcase of work from eight graduates of the **Peter Sefton Furniture School**, featuring an array of award-winning pieces and giving an insight into the various students' design inspiration and making styles

**T**he pieces showcased in this article were designed and made by students on the Peter Sefton Furniture School's Professional Long Course, which started in September 2016.

"What a long way our students have come in such a short space of time," says Peter. "Last September they joined the Long Course, most with no experience of furniture making at all, and they are now creating fantastic pieces."

## The graduates

Noah Morris, Ed Muir and Archie Webster have all been offered jobs with high-end furniture makers as soon as they complete the course, following their very successful work placements at Easter, as have Rees Dyke and Ian Lidgbird. Andrew Jamieson, Simon Denton, and Frank Squire are all planning their own craft workshops and to work to commission for their own clients, and Ian will also be volunteering at the UK Men's Sheds Association in Birmingham - [www.menssheds.org.uk](http://www.menssheds.org.uk). GW



Students, from left to right: Simon Denton, Ed Muir, Frank Squire, Archie Webster, Rees Dyke, Noah Morris, Ian Lidgbird and Andrew Jamieson

## FURTHER INFO

To find out more about the Peter Sefton Furniture School and the courses on offer, see [www.peterseftonfurnitureschool.com](http://www.peterseftonfurnitureschool.com)



## NOAH MORRIS – 'Ellipse' Tables

Noah was initially captivated by woodwork in his grandfather's workshop, which encouraged him to take A Level design technology. "Having really enjoyed the practical and design process for each piece," he says, "I decided I wanted to take this further, which led me to the Furniture School." The course allowed Noah to develop his practical making skills in the workshop, both with hand tools and larger machinery. He has also improved his knowledge of not only materials and how they work but furniture design, and, most importantly for the future, the business side of everything.

Noah is also very proud to have been invited to exhibit his 'Ellipse' tables at the Young Furniture Makers' Exhibition in October, which showcases the best of student work from across the country.



### WINNER

'Outstanding Furniture Design prize', sponsored and presented by the Gordon Russell Design Museum, along with the 'Best Use of Veneers' prize, sponsored by Mundy Veneers

760 x 700mm – one in ripple sycamore with American black walnut inlays; the other in American cherry with American black walnut inlays. Legs feature compound curves and tapered inlays within the top

## SIMON DENTON – 'Dickie Bow' credenza sideboard

For the past 15 years Simon has worked as a professional cellist playing with many prestigious UK orchestras; however, he yearned for the non-subjective in life, which led to a keen interest in making. "With its dedicated tutors and idyllic location, I embarked on the nine-month course," he says. "Focusing almost instantly on the design side of the course and with my uncompromising approach to each design, both Sean Feeney and Peter Sefton have greatly helped to improve my skills as well as facilitating my ideas," he finishes.



Constructed from solid pau rosa and steamed Swiss pear sitting on a solid wengé plinth – 1,620 x 890 x 430mm. Art Deco inspired with eight drawers, all located on runners with push-to-open and soft-close mechanisms. The two centred doors use a bespoke housing for the catches

### WINNER

'Favourite Piece using Wood Machining' prize, sponsored by Felder UK, along with the 'Visitors Choice' prize, awarded to the favourite piece as voted for by visitors to the School's End of Year Show

## FRANK SQUIRE – 'Wych Oval' Desk

"After many years working in IT, it was time for a change," says Frank. "I was attracted to making things and specifically to making them in wood." Peter's School appealed due to the dedication to teaching and the large amount of time spent hands-on applying and doing what is being learnt.

He has learnt about furniture history, timber and material types, machine skills, hand skills and construction techniques, and, most importantly, gained lots of practical experience in the set projects as well as the design and production of his writing desk.

**WINNER**  
'Best Use of Solid Timber' prize,  
sponsored by  
Whitmores Timber



Made in Wych elm and elm burr – 1,400 × 700 × 720mm. Modern jointing techniques are combined with drawer dovetails, and classic wedged tenons for the bottom stretcher. With wengé wedges, a profiled wengé lipping to the top provides contrast

## IAN LIDGBIRD – 'Dark Side of the Room' table

After spending 11 years in the automotive industry and being made redundant, Ian took the opportunity to challenge himself, in a more creative industry. "Being creative, while learning new hand skills, was a really exciting prospect and the one-to-one tutoring really appealed to me," he says.

Being taught the design techniques required to draw and create a piece of furniture was something Ian benefitted from a lot, as well as reading timber and working with it (not against it), which he found to be a really fascinating skill to learn.

**WINNER**  
'Unsung Hero' prize,  
sponsored and presented  
by Tony Smart, Master of  
the Furniture Makers'  
Company



780 × 600mm – a contemporary table in American walnut with a burr elm veneered table top featuring a light within that shines through the veneered glass top. Also incorporating 925 silver splines, which were inlaid in all 108 mitres to create a full flowing feel



## ARCHIE WEBSTER – 'Yewtopia' desk

"I wanted to have a career in furniture making and it was one of the best places I visited," says Archie. "The School was fairly local to where I live so I didn't have to relocate."

He has made several smaller projects, his hand skills have improved, getting faster with each one, and he was able to complete the desk with minimal help.



**WINNER**  
'Best Student Finisher'  
prize,  
sponsored by  
Fiddes & Son

1,200 × 450 × 770mm constructed with an English yew top, carcass, drawer fronts and stretcher rails with English sycamore legs and drawers. The two drawer fronts and stretcher rails follow the natural undulating shape of the magnificent yew grain



## ED MUIR – '103' Serpentine cabriole console table

Ed worked as an animator before joining the Furniture School and wanted a career change while still being creative. He researched cabinetmaking courses and found Peter's School. "I was really impressed with the School's approach to teaching and design freedom we would be given for our final pieces," he says. Ed feels he has achieved a high level of hand tool skills, especially working with cabriole legs. This has made him aware of the vast amount of detail and craftsmanship that goes into making a classical style piece.

Ed's inspiration for the cabriole console table came from his love for classical furniture, such as the Arts and Crafts movement, and also contemporary designer furniture.



1,250 × 450 × 900mm – a minimal sinuous contemporary tilt to Louis XV with a pippy oak carcass, turned brindle brown oak discs and glides to finish the hand-shaped oak cabriole legs. Features walnut and pippy oak drawers with a minimal hexagonal design handle, made using walnut and brown oak

## REES DYKE – 'Rounds End' console table

Rees lives locally and after attending the Open Day, then coming back to see Peter with his father, he was really impressed with the School, the teaching style and design freedom. "I felt this suited me so decided to do it," he says.

While studying at the School he has achieved a good understanding of furniture making and design along with the skill to manipulate timber with certain tools.



1,090 × 500 × 820mm – constructed from a mixture of solid and oak veneer with a solid white quartersawn carcass to optimise the beautiful medullary rays and a ripple American oak top with a French oyster (an angled cut of the end-grain) imbedded within

## ANDREW JAMIESON – 'Brindle and Birch' dining table

Andrew had originally completed a short course in Canada and enjoyed working with wood, so he decided to embark on a longer course, which he hopes will lead to a new career, either self-employed or in a small workshop.

"Coming to the Furniture School has given me the chance to gain experience on a wide range of woodworking machines and a chance to design my own pieces of furniture from start to finish," he says. "Plus I got to learn new skills such as going to the timber yard and selecting the brown oak for my table and seating."



Table dimensions – 1,800 × 870 × 730mm. Brindle oak dining table and birch ply benches are minimal in design with careful consideration to the use of the oak, which features a central 'flame' pattern

# Easy does it!

This pine slat bench by **Janice Anderssen** is easy to make, using only a few basic tools and materials, and has a multitude of uses both inside the house and out

**T**his project is easy to make and you can finish it using your choice of wood tint and paint. The bench shown here has a slatted seat that is finished with wood stain in imbuia, together with Polywax Sealer, with a base painted using Rust-Oleum Chalked Ultra Matte Paint in aged grey.

The slat bench measures 1,200mm in length, but you can easily modify this if you need a shorter or longer bench for an entrance or hallway, or to use with a dining table. I used a Kreg Pocket-Hole Jig to make my bench so that screws were out of sight, but if you don't own one yourself, then you can join using conventional methods.

There are so many uses for this DIY slat bench – it can also be placed at the foot of a bed as a place to sit while you dress.

## MATERIALS & TOOLS REQUIRED

### MATERIALS

- 32 × 67 × 1,200mm pine – seat slats – 4 off
- 32 × 67 × 368mm pine – legs – 4 off
- 32 × 67 × 284mm pine – seat support – 2 off
- 32 × 67 × 230mm pine – side rail – 2 off
- 32 × 67 × 950mm pine – bottom rail – 1 off
- 32 × 67 × 878mm pine – top rail – 1 off
- 22 × 44 × 224mm pine – seat slat cross-piece – 2 off
- 32mm pocket hole screws
- Wood stain, sealer or varnish
- Rust-Oleum Chalked Ultra Matte Paint or similar

### TOOLS

- Drill/driver plus assorted bits
- Kreg Pocket-Hole Jig kit (I used a Kreg K4)
- Jigsaw or mitre saw
- Orbital sander plus 120 and 240 grit sanding pads
- Tape measure and pencil
- Paintbrushes



PIC 1. Drill pocket holes into the rails, cross-pieces and legs



PIC 2. The slats that form the seat have 5mm spacers placed in between each slat



PIC 3. Secure the legs to the seat support using wood glue and 32mm pocket hole screws



PIC 4. Attach the side rails with wood glue and pocket hole screws



## Making the seat slats

Start by sanding all pieces smooth prior to assembly. All the components that make up the base are joined using pocket hole joints. By using this method, screws are almost invisible and undetectable. Drill pocket holes into the rails, cross-pieces and legs (Pic.1).

The slats that form the seat have 5mm spacers between each slat and are then joined using the seat slat cross-piece (Pic.2) – **DO NOT** glue this in place – see 'making the frame'.

Before securing the seat slats, apply whichever stain you wish for the finished





bench. It is far easier to apply this to the slats before they are secured.

### Making the frame

Before you assemble the bench you need to cut a few angles on the legs and side rail (**Fig.1**). Cut a 5° angle at the top and bottom of each leg, as shown in **Fig.1**. Also, cut a 5° angle on both side rails (**Fig.2**). Next, secure the legs to the seat support using wood glue and 32mm pocket hole screws (**Pic.4**), then, measure and mark at 40mm up inside each leg before attaching the side rails with wood glue and >

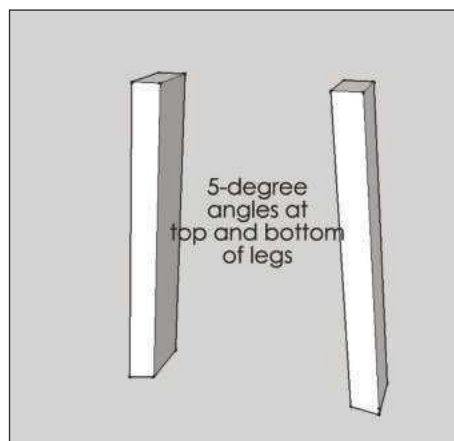


FIG 1. Diagram showing the angles that need to be cut on the legs

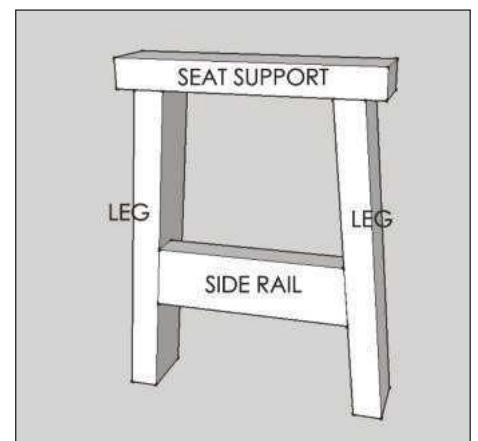


FIG 2. Cross-section of side rail



## Project: Simple pine slat bench

pocket hole screws. Note that the side rail should be flush with the outside edge of each leg – on opposing sides. You can then assemble two sides (Pic.5). The next step is to measure and mark the centre of the seat support and side rail in order to mount the top and bottom rails. Use wood glue and pocket hole screws to secure the top and bottom rails to the sides (Pic.6). Place the bench face down on the slats in order to mount the bottom frame to the underside of the seat slats (Pic.7), then push the frame in place between the two seat slat cross-pieces. Secure with wood glue and pocket hole screws through the seat slat cross-piece and into the seat support.

### Finishing

You're then ready to sand the assembled bench and round off any sharp edges before wiping clean. I originally applied wood stain in traditional teak to the top slats, but then decided to use imbuia to create a darker contrast (Pic.8). The next step is to apply



PIC 5. One of the constructed side pieces

three coats of polywax sealer to the seat slat, and as a final touch, I painted the bottom frame with Rust-Oleum Chalked Ultra Matte in aged grey (Pic.9). GW



PIC 6. Use wood glue and pocket hole screws to secure the top and bottom rails to the sides



PIC 7. Mounting the bottom frame to the underside of the seat slats – push the frame in place between the two seat slat cross-pieces



PIC 8. An imbuia wood stain adds a darker contrast to the piece



PIC 9. I then painted the bottom frame with Rust-Oleum Chalked Ultra Matte in aged grey

### MULTIPLE USES

The completed slat bench can be placed in any number of locations, including at the foot of a bed (Pic.10), in a hallway, or at a dining table – you could even take it outside during the summer months. Be sure to bring it back inside at night, however, as the finishes used won't be able to withstand the elements



PIC 10. The bench can be placed at the foot of a bed as a place to sit while you dress...



PIC 11. ... or as a handy place to perch in a hallway



PIC 12. You could even take it outside during the summer months

### FURTHER INFO

To see more of Janice's projects, have a look at her website: [www.Home-Dzine.co.za](http://www.Home-Dzine.co.za)





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# 'Taiao Table'

Created by **Stout Furniture**, this stunning table, made using English burr oak and English oak, features freeform legs that can be made in any desired shape

A curiosity of freeform lamination inspired the development of the 'Taiao Table', meaning 'natural world' in Maori. The organically created curves were handcrafted from quartersawn Somerset oak for the legs and North Devon burr oak for the top. Using locally sourced wood guarantees Stout Furniture knows exactly where the wood has come from and who cut it down, occasionally even being able to identify the field in which the tree once stood.

## Jigs & joints

"The burr oak was skied flat using a simple jig to house the wood and a hardwood ski to control the router," says Rose. "Initial shaping of the top with a router and template meant that the lines were clean; it was then finished by hand using a spokeshave to add movement to the curves." A jig was devised that made the freeform lamination glue-up quicker, which allowed extra time to tweak the curves, thus ensuring the legs were exactly the same. To achieve the strength required and to stop spring-back in the legs, the consecutive 0.6mm veneers were slightly rotated, similar to plywood, then glued together using a resin.

The Parnham joint, first used at John Makepeace's Parnham workshop, connects the legs to the table top. "A challenge was to marry up the angle of the drilled hole in the top with those located in the curved thin legs. The table was finally sanded to 4,000 grit before being given several coats of oil." **GW**



The stunning North Devon burr oak top. Final shaping was completed by hand using a spokeshave



The curves of the legs as seen from different angles



Showing the invisible Parnham joint, as well as the stainless steel rods that prevent racking within the table

## STOUT FURNITURE

Stout Furniture designs and handcrafts bespoke and small batch pieces, predominantly in wood, fusing both modern and traditional techniques to produce a collection of high quality work.

Based in North Devon, the company was established by Rose Stout who draws inspiration from the evolution of the design process in addition to the craftsmanship and attention to detail. Intrigued by different techniques to develop pieces of furniture,

Rose followed on in the family tradition and trained as a bespoke cabinetmaker. Aware of her obligation to use wood in a responsible manner, all timber employed within the pieces she makes is either native or derived from a highly sustainable source. Stout Furniture takes the client through the journey to create a unique, beautiful, tactile, and practical piece that is perfect for any setting. To find out more, see [www.stoutfurniture.com](http://www.stoutfurniture.com)





*"Initial shaping of the top with a router and template meant that the lines were clean; it was then finished by hand using a spokeshave to add movement to the curves"*

*Rose Stout of Stout Furniture*



The jig used to flatten the burr, which was made using MDF. A 1/2 in router was housed within a hardwood ski



Once the top was skied, a palm sander was used to give it a rough sand, before being finished up to 4,000 grit by hand



The above photo and inset shows the design stage where Rose was playing with ratios to establish which combinations looked the most aesthetically pleasing



## Clarke

TABLE  
SAWS

FROM ONLY  
£72.99  
EXC.VAT  
£87.59  
INC.VAT

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

INCLUDES  
LEFT & RIGHT  
TABLE  
EXTENSION

CTS100

| MODEL   | MOTOR | BLADE | EXC.VAT | INC.VAT |
|---------|-------|-------|---------|---------|
| CTS800B | 600W  | 200mm | £72.99  | £87.59  |
| CTS11   | 1500W | 254mm | £149.98 | £179.98 |
| CTS100  | 1500W | 254mm | £169.98 | £203.98 |

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COSTS LESS

## Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

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

£129.98  
EXC.VAT  
£155.98  
INC.VAT

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

## EVOLUTION FURY5-S TABLE SAW

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

£149.98  
EXC.VAT  
£179.98  
INC.VAT

## Clarke ELECTRIC HEATERS

DEVIL 7005

| MODEL      | VOLTAGE | HEAT OUTPUT | EXC.VAT | INC.VAT |
|------------|---------|-------------|---------|---------|
| DEVIL 6005 | 400V    | 2.5-5kW     | £74.99  | £89.99  |
| DEVIL 7005 | 400V    | 5kW         | £84.99  | £101.99 |
| DEVIL 6009 | 400V    | 4.5-9kW     | £119.99 | £142.80 |
| DEVIL 6015 | 400V    | 5-10-15kW   | £179.99 | £214.80 |
| DEVIL 7025 | 400V    | 22kW        | £299.99 | £358.80 |
| DEVIL 7030 | 400V    | 30kW        | £349.99 | £418.80 |

## Clarke CROSS3 450W RANDOM ORBITAL SANDER

• Adjustable front handle improves control  
• 7000-14000rpm

£29.98  
EXC.VAT  
£35.98  
INC.VAT

INC. STD BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

## Clarke CPF13 ELECTRIC POWER FILE

• Variable belt speed  
• Tilting head

£49.98  
EXC.VAT  
£59.98  
INC.VAT

## Clarke BELT SIZE

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

## Clarke CORDLESS DRILL/DRIVERS

CON18Li

£39.98  
EXC.VAT  
£47.98  
INC.VAT

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

## Clarke POWER PLANERS

CEP1

£28.99  
EXC.VAT  
£34.99  
INC.VAT

| MODEL            | MOTOR | DEPTH OF CUT | EXC.VAT | INC.VAT |
|------------------|-------|--------------|---------|---------|
| Clarke CEP1      | 650W  | 2mm          | £28.99  | £34.99  |
| Einhell TE-PL850 | 850W  | 3mm          | £52.99  | £63.99  |
| B&D KW750K - GB  | 750W  | 2mm          | £57.99  | £69.99  |

## Clarke STATIC PHASE CONVERTERS

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

PC60

£229.98  
EXC.VAT  
£274.98  
INC.VAT

| MODEL | MAX. MOTOR HP | FUSE   | EXC.VAT | INC.VAT |
|-------|---------------|--------|---------|---------|
| PC20  | 2HP           | 10Amps | £229.98 | £274.98 |
| PC40  | 3.5HP         | 20Amps | £269.98 | £322.98 |
| PC60  | 5.5HP         | 32Amps | £319.98 | £382.98 |

## Clarke BOLTLESS SHELVING/BENCHES

• Simple fast assembly in minutes using only a hammer

£29.98  
EXC.VAT  
£35.98  
INC.VAT

150 (evenly distributed) Strong 9mm fibreboard shelves

350 (evenly distributed) Strong 12mm fibreboard shelves

## Clarke WET & DRY VACUUM CLEANERS

CON185

£41.99  
EXC.VAT  
£51.99  
INC.VAT

| MODEL   | MOTOR | MAX CUT (mm) | EXC.VAT | INC.VAT |
|---------|-------|--------------|---------|---------|
| CCS185B | 1200W | 65/44        | £41.99  | £50.99  |
| CCS2    | 1300W | 60/45        | £59.98  | £71.98  |
| CON185* | 1600W | 60/40        | £62.99  | £75.99  |

## Clarke WHETSTONE SHARPENER (200MM)

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

£119.98  
EXC.VAT  
£143.98  
INC.VAT

ONLY

£143.98  
INC.VAT

## Clarke WOODWORKING VICES

STANLEY Record WV7

£14.99  
EXC.VAT  
£17.99  
INC.VAT

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

## Clarke STAPLE/NAIL GUNS

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

£22.99  
EXC.VAT  
£27.99  
INC.VAT

NEW

SPARE NAILS & STAPLES IN STOCK

## Clarke CONS18LiC ELECTRIC AND CORDLESS MODELS IN STOCK

| MODEL     | TYPE            | STAPLE/NAIL GAUGE | EXC. VAT | INC. VAT |
|-----------|-----------------|-------------------|----------|----------|
| CC748     | Cordless        | 4.8V Ni-MH 22/18  | £29.98   | £35.98   |
| CESNG2    | Electric        | 18/18             | £39.98   | £47.98   |
| CONS18LiC | Cordless        |                   |          |          |
| NEW       | 18V Lithium-Ion | 18/18             | £109.98  | £131.98  |

## Clarke BELT SANDERS

• Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK

BS1

£36.99  
EXC.VAT  
£44.99  
INC.VAT

## Clarke CIRCULAR SAWS

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

CON185

£41.99  
EXC.VAT  
£51.99  
INC.VAT

| MODEL   | MOTOR | MAX CUT (mm) | EXC.VAT | INC.VAT |
|---------|-------|--------------|---------|---------|
| CCS185B | 1200W | 65/44        | £41.99  | £50.99  |
| CCS2    | 1300W | 60/45        | £59.98  | £71.98  |
| CON185* | 1600W | 60/40        | £62.99  | £75.99  |

## Clarke PLANERS & THICKENERS

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

£184.99  
EXC.VAT  
£221.99  
INC.VAT

| MODEL   | PLANING WIDTH | MAX THICK CAPACITY | EXC. VAT | INC. VAT |
|---------|---------------|--------------------|----------|----------|
| CP1600  | 6"            | 120mm              | £184.99  | £221.99  |
| CP1800  | 8"            | 120mm              | £209.98  | £251.98  |
| CP11000 | 10"           | 120mm              | £289.00  | £346.80  |

## Clarke QUALITY CAST IRON STOVES

OVER 22 QUALITY STYLES ON DISPLAY

£219.00  
EXC.VAT  
£262.80  
INC.VAT

FLUES, COWLS & ACCESSORIES IN STOCK

## Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

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

£39.98  
EXC.VAT  
£47.98  
INC.VAT

## Clarke TURBO AIR COMPRESSORS

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

£89.98  
EXC.VAT  
£107.98  
INC.VAT

| MODEL    | MOTOR | CFM  | TANK   | EXC.VAT | INC.VAT |
|----------|-------|------|--------|---------|---------|
| 8/250    | 2HP   | 7.5  | 24ltr  | £89.98  | £107.98 |
| 8/250    | 2HP   | 7    | 24ltr  | £94.99  | £113.99 |
| 11/250   | 2.5HP | 9.5  | 24ltr  | £109.98 | £131.98 |
| 8/510    | 2HP   | 7.5  | 50ltr  | £119.98 | £143.98 |
| 11/510   | 2.5HP | 9.5  | 50ltr  | £139.98 | £167.98 |
| 16/510*  | 3HP   | 14.5 | 50ltr  | £209.00 | £250.80 |
| 16/1010* | 3HP   | 14.5 | 100ltr | £259.98 | £311.98 |

## Clarke HARDWOOD WORKBENCH

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

CHB1500

£144.99  
EXC.VAT  
£173.99  
INC.VAT

## VAC KING WET & DRY VACUUM CLEANERS

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

£49.98  
EXC.VAT  
£59.98  
INC.VAT

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

## Clarke 4" BELT/ 6" DISC SANDER

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

£92.99  
EXC.VAT  
£111.59  
INC.VAT

## Clarke 6" BELT/ 9" DISC SANDER

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

£239.00  
EXC.VAT  
£286.00  
INC.VAT

## Clarke 1" BELT/ 5" DISC SANDER

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

£69.98  
EXC.VAT  
£83.98  
INC.VAT

## Clarke 4" BELT/ 8" DISC SANDER

• Includes two tables  
• 550W 230V motor  
CS4-8

£159.98  
EXC.VAT  
£191.98  
INC.VAT

## Clarke DISC SANDER (305MM)

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

£129.98  
EXC.VAT  
£155.98  
INC.VAT

## Clarke SHEET SANDERS

• Ergonomic design for optimum comfort  
CON300

£16.99  
EXC.VAT  
£20.99  
INC.VAT

## Clarke PORTABLE THICKNESSER

• Max thickness cap. 125mm and 250mm wide  
• Planing depths adjustable from 0-2.5mm  
• Powerful 1250W motor  
CPT250

£219.00  
EXC.VAT  
£262.80  
INC.VAT

## Clarke OSCILLATING BOBBIN SANDER

• Provides exceptional finishes for deep & wide work pieces, front edges & narrow inner curves • Dust collection port  
• Inc. 6 sanding sleeves/ bobbins  
COBS1

£139.98  
EXC.VAT  
£167.98  
INC.VAT

## Clarke OSCILLATING BELT & BOBBIN SANDER

• Can sand concave, convex, straight or multi-curved work pieces  
• Dust collection port • Inc. sleeves, drum & belt  
COEBS1

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£215.98  
INC.VAT



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**Clarke SLIDING COMPOUND MITRE SAW**

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

**BEST SELLER**

MODEL: CMS10S2

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

|         |        |        |         |         |
|---------|--------|--------|---------|---------|
| CMS210  | 210/30 | 60/120 | £59.98  | £71.98  |
| CMS10S2 | 254/30 | 78/340 | £139.98 | £167.98 |

**Clarke CONTRACTOR JIGSAWS**

• DIY #Professional

MODEL: CON750

POWER (W) DEPTH OF CUT (WOOD/STEEL) EXC. VAT INC. VAT

|               |      |         |        |        |
|---------------|------|---------|--------|--------|
| Clarke CJS380 | 420W | 55/6mm  | £15.99 | £19.19 |
| Clarke CON750 | 750W | 80/10mm | £27.99 | £33.59 |
| Bosch PST700E | 500W | 70/4mm  | £44.99 | £53.99 |

was £34.79 inc.VAT

**Clarke MITRE SAWS**

TC-SM2131

• Laser Guide  
• Sliding Compound

• Quality Range of Mitre saws and blades in stock

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

MODEL: TC-SM2131

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

|                   |        |          |         |         |
|-------------------|--------|----------|---------|---------|
| Einhell TC-MS 212 | 210/30 | 55/120mm | £59.98  | £71.98  |
| Einhell TC-SM2131 | 210/30 | 62/310mm | £129.98 | £155.98 |
| Einhell TC-SM2131 | 250/30 | 75/340mm | £159.98 | £191.98 |

**Clarke BISCUIT JOINTER**

• 1100rpm Operating Speed  
• 860W motor • 14mm Cutting Depth • Inc. dust bag, storage case and face spanner for cutter change

**NEW**

MODEL: TC-BJ900

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

**Clarke FOLDING MITRESAW STAND**

CFMSS1

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

ONLY £66.99 EXC.VAT £80.39 INC.VAT

**Clarke SCROLL SAWS**

CSS400C

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

FROM ONLY £82.99 EXC.VAT £99.98 INC.VAT

MODEL: CSS400C

MOTOR RPM SPEED EXC. VAT INC. VAT

|         |     |          |         |         |
|---------|-----|----------|---------|---------|
| CSS400B | 85W | 1450     | £82.99  | £99.98  |
| CSS16VB | 90W | 550-1600 | £94.99  | £113.99 |
| CSS400C | 90W | 550-1600 | £114.99 | £137.99 |

**Clarke DRILL PRESSES**

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

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

MODEL: CDP152B

MOTOR (W) SPEEDS EXC. VAT INC. VAT

|             |          |         |         |
|-------------|----------|---------|---------|
| CDP5EB      | 350 / 5  | £66.99  | £80.39  |
| CDP102B     | 350 / 5  | £79.98  | £95.98  |
| CDP152B     | 450 / 16 | £139.98 | £167.98 |
| CDP202B     | 450 / 16 | £185.00 | £222.00 |
| CDP10B      | 370 / 12 | £198.99 | £238.79 |
| CDP352F     | 550 / 12 | £229.00 | £274.80 |
| CDP502F1100 | 1250     | £499.00 | £598.80 |

**Clarke 13" MINI WOOD LATHE**

CWL325V

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

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

**Clarke DETAIL SANDERS**

CDS-1V

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

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

MODEL: CDS-1V

MOTOR WATTS EXC.VAT INC.VAT

|        |      |        |        |
|--------|------|--------|--------|
| PS105  | 105W | £19.98 | £23.98 |
| CDS-1V | 280W | £29.98 | £35.98 |

**Clarke BENCH BANDSAW**

CBS190B

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

FROM ONLY £129.98 EXC.VAT £155.98 INC.VAT

MODEL: CBS190B

MOTOR THROAT SIZE EXC.VAT INC.VAT

|         |      |      |         |         |
|---------|------|------|---------|---------|
| CBS190B | 350W | 7.5" | £129.98 | £155.98 |
|---------|------|------|---------|---------|

**Clarke MORTISING MACHINE**

CBM1B

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

FROM ONLY £174.99 EXC.VAT £209.98 INC.VAT

CHISELS AVAILABLE FROM £8.39 INC.VAT

**Clarke WORK TABLE SUPPORTS (PAIR)**

CWTS1

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

ONLY £28.99 EXC.VAT £34.79 INC.VAT

**Clarke 12" DOVETAIL JIG**

CDTJ12

• Simple, easy to set up & use for producing a variety of joints • Cuts work pieces with a thickness of 8-32mm • Includes a 1/2" comb template guide & holes for bench mounting

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

**Clarke PROFESSIONAL BANDSAWS**

CBS300

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

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

FROM ONLY £399.98 EXC.VAT £478.80 INC.VAT

MODEL: CBS300

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

|        |           |       |       |         |         |
|--------|-----------|-------|-------|---------|---------|
| CBS300 | 305mm/12" | 165mm | 115mm | £399.00 | £478.80 |
| CBS350 | 340mm/14" | 225mm | 160mm | £498.00 | £597.60 |

**Clarke ROUTER TABLE**

CRT-1

Router not included

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

BEST SELLER

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

**Clarke ROUTERS**

CR1C

• Powerful heavy duty machines ideal for trade and DIY use

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

MODEL: CR1C

MOTOR PLUNGE (mm) EXC.VAT INC.VAT

|           |      |      |         |         |
|-----------|------|------|---------|---------|
| CR1C      | 1200 | 0-50 | £46.99  | £56.39  |
| Bosch     | 1400 | 0-55 | £86.99  | £104.39 |
| PO1400ACE | 2100 | 0-60 | £119.98 | £143.98 |

was £149.99 inc.VAT

**Clarke GRINDERS & STANDS**

• Stands complete with bolt mountings and feet anchor holes

6" & 8" AVAILABLE WITH LIGHT

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

STANDS FROM ONLY £47.98 INC.VAT

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

**Clarke POLISHING KITS**

4" to 8" FROM ONLY £27.59 INC.VAT

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 01482 223161  
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 01473 221253  
 0113 231 0400  
 0208 695 5684  
 020 8803 0861  
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 0114 258 0831  
 0208 3042069  
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# The magic of woodwork





## Undertaking an unusual project commissioned by his daughter, **Shaun Newman** creates a chair that brings together two very different disciplines and cultures: sound therapy and chakra crystal healing

**T**his chair brings together two very different disciplines and cultures: sound therapy and chakra crystal healing. What I love, however, is the fact they are both brought together through the magic of woodwork!



PIC 1. A steel ruler can help to create a smooth curve

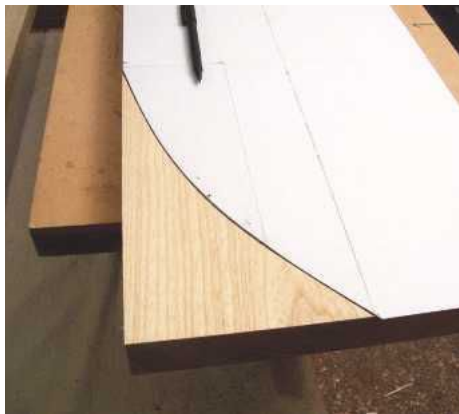
It was a chance visit by my daughter to Glastonbury that sparked her interest in such a chair. She came home and asked me if I could make her one as she is interested in alternative healing and it would become an important part of her therapy room in Denmark, where she lives. As a musical instrument maker, I became fascinated by the possibility of creating a sound box which had 26 steel strings, and was tuned to a simple chord, and then working out how to attach it to a chair! A mouth-watering challenge indeed.

It seems that sound therapy dates back many thousands of years. First were probably Australian Aboriginals using the sounds generated by the 'yidaki' to heal both physical and mental ailments. This usage can be traced back as far as 40,000 years, and much later the Egyptians were thought to have used sound to heal, particularly through the use of vowel sound chanting.

Egyptologists believe the Egyptians were aware of the healing qualities of sound long before the Greeks who through the work of Pythagoras codified musical intervals. Contemporary writings indicate the use of the lyre and flute in healing, which Pythagoras describes as 'musical medicine'.

Moving further east, vowel sound chants and instruments such as bells and drums have been used widely in countries such as Tibet, China, India and it is India that brings sound therapy and chakra healing together.

Chakra healing also appears in Hinduism, Jainism and Buddhism. Chakras are believed to be channels in the body through which life forces and energy flow and there are seven in total. They range from the root chakra at the base of the spine to the crown at the top of the skull. Each chakra is thought to be activated by energy emitting from crystals such as jasper and amethyst.



PIC 2. The arch is traced onto the ash from the card



PIC 3. A jigsaw is used to remove waste wood



PIC 4. The mortise for the seat panel is then marked out



PIC 5. The mortise is chopped out with a chisel



PIC 6. Rebates are cut for mahogany inlays

It is at this point that many people begin to think it is nonsensical to believe that inanimate objects such as crystals can emit energy. I would, however, like to keep an open mind as my enduring view is: 'If it works for you, then it works'. So, to bring these disciplines together... on with the woodwork!

### Making the back & seat panel

The first task was to source some well-seasoned English ash in two boards, each 38mm thick x 300mm wide, with one measuring 1,400mm in length and the second 1,100mm. These need to be planed smooth all round before they are ready for use. >



PIC 7. Masking tape holds the inlays in place as the glue cures

The shape of the 'Gothic' style arch at the top of the chair back was first drawn onto a piece of stiff card with the help of a steel ruler pinned to the workbench through the card (Pic.1). Half of the shape needs to be scribed so that when the card is turned over, an exact match is possible for both sides of the arch when the outline is traced on (Pic.2). The shape needs to be cut out using a jigsaw (Pic.3) and the edges finished using a No.5 1/2 plane and sanding stick.

Once the chair back has been cleaned up the mortise through which the seat panel fits needs to be chopped out. The mortise is 165mm wide and a fraction over the thickness of the seat board wide. It does not pass through at 90° but at a slight angle (94°), which means that when the chair is assembled, it is more comfortable. Marking out both sides of the chair back to receive the mortise must be undertaken with great accuracy in order to achieve a clean line and a good fit (Pics.4 & 5). The seat panel is the width of the board at the front end and 360mm long. The tail end then needs to be cut to a width of just under 165mm so that it slides through the mortise easily.



PIC 10. The chakra crystals are held in place with epoxy



PIC 13. An angle iron is used to strengthen the back



PIC 8. Sockets for the decorative lozenges are routed out

I wanted to make this chair look quite different to the one seen at Glastonbury, so rebates were cut around the back and front edges of the rear board (Pic.6) and they were inlaid with mahogany. The inlays are 5mm deep and 10mm wide. It was quite difficult to bend them, so they had to be soaked in hot water for about an hour, which helped. Then strong masking tape could hold them in place while the glue cured (Pic.7). To enhance the appearance and tie in with some ideas I had for the soundboard holes, three lozenge shapes were inlaid into the back and seat panel. The mahogany pieces were just 5mm-thick and were let into sockets cut first with a mini router (Pic.8) before they were cleaned up with a sharp chisel.

A similar approach was used to inset the chakra crystals. It is possible to buy these stones ground into a circular shape and all the same size. However, random shapes were chosen to give the chair a more natural



PIC 9. Then the sockets for the chakra crystals are routed out

appearance. Once a line had been drawn around the periphery of each stone and they were in the correct position on the chair back, the sockets could be routed out (Pic.9). The position of the stones is important in the practice of chakra healing with the root (jasper) at the base, then the sacral, followed by the solar plexus, the heart, the throat, the third eye and finally the crown (amethyst) at the top. There are variations on which crystals can be used on which chakra (see crystal options at the end of this article), but not in the order in which they should sit. Each chakra crystal is held in place with clear epoxy adhesive (Pic.10). It is as well to rub the back of each crystal with a diamond file to provide a key for the glue.

### Creating the sound chamber

While still working on the back I decided to use some of my experience in musical instrument making and routed out a large amount of wood



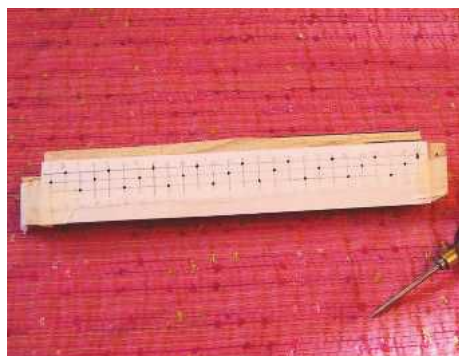
PIC 11. The sound chamber is hollowed out



PIC 12. The bottom of the sound chamber is made flat



PIC 14. One edge of the pin block is chamfered



PIC 15. The pin positions are marked onto a card and transferred to the block





**PIC 16.** Taking the pin holes out on the pillar drill, helped with a simple jig

from the area below, in which the sound box would sit to help create a more resonant sound chamber (**Pic.11**). The area of wood to be removed had to be a little smaller than the 'footprint' of the soundboard and side rails/pin blocks. This was an area 255 x 670mm and 22mm deep. The top of the cavity is 300mm from the peak of the arch. Routing ash is very difficult with an ordinary hobby router, so it's best to work with shallow runs, leaving strips in the centre to support the router base. These strips can be removed later with a chisel to give the sound chamber a flat bottom (**Pic.12**). With such an amount of wood removed, the chair back could now bend under the strain of 26 strings, which would exert somewhere around a quarter of a ton of pull. This meant that a method of strengthening the back while taking up least room in the chamber was required. A 25mm angle iron was the solution, two strips running parallel to the sides of the recess and 50mm from either



**PIC 17.** Tapping the hitch pins into place

edge. The angle iron is held in place both with epoxy resin and short screws (**Pic.13**).

### The sound box

Once the routing and strengthening were complete it was time to consider the frame for the soundboard. This was made up from four pieces of ash left over from cutting the seat board tail. At either end is a pin block. The one destined for the top would hold the tuning pins and the bottom block would hold the hitch pins. These two blocks are each 280mm long and the thickness of the board from which they were cut. They are 40mm wide and are chamfered at one edge (**Pic.14**) to help the strings to later pass over the bridge and saddle. The position of the pins is marked onto a card at 9.5mm apart from each other. The positions are then transferred onto the chamfered face of the pin block (**Pic.15**), and holes for the pins were then drilled



**PIC 18.** The tuners must be put into place with a wrench

into the block. Note that they are in threes and diagonally placed to avoid a line of holes possibly following a grain line in the ash. Each pin hole was drilled at 90° to the face of the chamfer. The correct angle was achieved by attaching the block onto a strip of plywood with a length of hardwood around 10mm-thick along one of the underside edges. All three pieces were held in place with masking tape to avoid slippage (**Pic.16**).

As the hitch pins are not threaded and 5mm thick, the holes drilled are of the same diameter and they can be tapped in with a rubber-headed hammer (**Pic.17**). The tuning pins, however, have a very fine thread and require holes a fraction smaller so that when they are driven in by a tuning wrench they grip tightly (**Pic.18**). The best sized drill for this operation is  $\frac{3}{8}$ in imperial.

The edges of the soundboard frame are also the depth of the original board, 685mm long and just 13mm wide. They are housed into the >



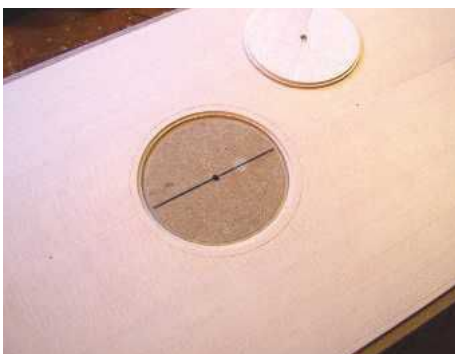
**PIC 19.** The edges of the soundboard that will meet are planed true



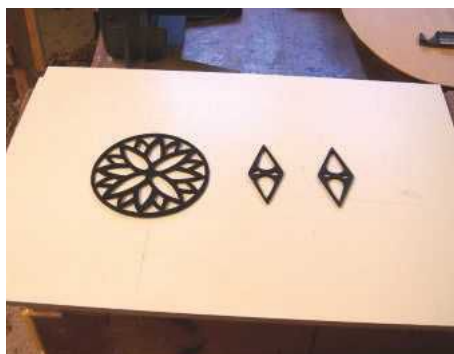
**PIC 20.** The soundboard in a wedge and lace jig



**PIC 21.** The sound hole rosette is first fretted out in the 2mm ply



**PIC 22.** The sound hole has a 0.5mm rebate



**PIC 23.** The rosette and inlays are painted satin black



**PIC 24.** The soundboard is held in place with cam clamps



**PIC 25.** The edges of the soundboard are then trimmed flush



**PIC 28.** Different string thicknesses are used

ends of the pin blocks after the latter have been drilled to accept the tuners and hitches.

Next came the soundboard, which was made from top quality sitka spruce and is normally used in guitar making. Two blank boards were 'book-matched' – cut from the same log – and when the two leaves are opened they are like butterfly wings, i.e. symmetrical. The edges of the two boards to be joined were planed true (**Pic.19**) and then pulled together with Titebond adhesive in a wedge and lace jig. The leaves were first held down firmly with laces and the long narrow wedges pull them together and keep them flat (**Pic.20**). Once out



**PIC 26.** The bridge saddle is made from brass bar

of the jig, the soundboard was brought to an even thickness of 2.5mm, either through the use of a smoothing plane or electric sander.

## Making & decorating the sound holes

If the board were attached to the frame and then directly onto the chair back, the sound would be muffled, so soundholes are needed. I wanted to pick up the lozenge theme from the front and also to enjoy a little fretwork. The central design, cut into a rondel of model maker's ply 2mm-thick, is 'the flower of life', often seen in Asian art. The lozenges are of my own design. The image is first drawn onto white paper, which is then glued onto the ply. The spaces between the lines are carefully fretted out (**Pic.21**) and finished with a scalpel and needle files. To inlay the rondel a circle must be cut with a trammelling router into the soundboard with a 0.5mm rebate left along the lower edge (**Pic.22**). This is an exacting task but worthwhile when the rondel drops in neatly with a clean edge. The lozenges are held in place from below with narrow strips of 1.5mm veneer and glue. To create a strong contrast with the surrounding ash, the sound hole inlays are painted with satin black enamel (**Pic.23**).

It was now time to attach the soundboard



**PIC 27.** Small corner blocks hold the bridge from pulling inwards

to the frame. The board overlapped the frame by a couple of millimetres all around and was held in place with cam clamps (**Pic.24**). Weights can just as easily be used as the frame is flat. The edges of the board were then all trimmed flush (**Pic.25**) and the whole thing was attached to the back. Given the level of tension from the strings the frame had to be attached with epoxy resin.

## Fitting the string bridges

The bridges at either end of the sound box were made from mahogany and are 280mm long, 19mm high and 13mm wide. The outer facing edge of the bridge was planed at an angle, later to give clearance to the strings on their way from the hitch pins to the tuners, and along the top edge a narrow groove was marked to receive a saddle made from 2.5mm brass bar (**Pic.26**). The underside of the bridge was coated with epoxy and three veneer pins were tapped into the saddle slot: one in the middle and one at either end, to help prevent it from moving under the pressure of the strings. The heads of the pins were tapped to just below the bottom of the saddle slot with a fine-tipped punch and subsequently covered by the brass bar. To help further in preventing movement, small mahogany blocks were



**PIC 29.** The completed chair



**PIC 30.** Chair detail

## CRYSTAL OPTIONS

Crystals chosen for this chair are shown in upper case bold print

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| <b>Crown:</b>        | <b>AMETHYST</b> , clear quartz, selenite                        |
| <b>Third eye:</b>    | <b>SODALITE</b> , lapis lazuli, purple fluorite, black obsidian |
| <b>Throat:</b>       | <b>BLUE QUARTZ</b> , blue lace agate, turquoise, aquamarine     |
| <b>Heart:</b>        | <b>AVENTURINE</b> , rose quartz, jade, green calcite            |
| <b>Solar plexus:</b> | <b>CALCITE</b> , yellow sapphire, malachite                     |
| <b>Sacral:</b>       | <b>CARNELIAN</b> , orange zincite, citrine, topaz               |
| <b>Root:</b>         | <b>JASPER</b> , onyx, garnet, bloodstone, hematite              |

(Please note this list is not exhaustive)



screwed to the sound chamber frame (Pic.27). The pins and saddle can now be removed and the finish applied. I applied three coats of Ronseal satin varnish rubbed down between coats with 400 grit abrasive. The finish brought out the beautiful grain in the ash and darkened the mahogany just enough to make an exciting contrast.

## Tuning up

Next came the moment of truth. What would it sound like? I ordered 26 loop-ended acoustic guitar strings in three gauges (Pic.28). The reason for the three different gauges was that I wanted to tune the chair to a simple chord. 'A major' was the choice, made up of just three notes: A, E and C#. Half of the strings were plain, unwound steel with a thickness of 0.45mm and all of these were tuned to 'A' just below middle 'C'. Three wound strings, 0.82mm-thick, were tuned to 'A', an octave below the plain strings. A further six strings of the same gauge were tuned to 'C#', an octave below middle 'C#', and the remaining four strings, which have a gauge of 0.66mm, were tuned to 'E', five full tones below middle 'C' (see suggested tuning regimen at the end of

this article). I have to admit to holding my breath as the strings took up tension and the whole chair back seemed to groan at each turn of the tuning wrench, but the sound when the chord was struck was truly amazing. It felt like a wave of sound flooding into the room and the whole chair back reverberated exactly as it was meant to. When assembled, the chair is unexpectedly comfortable and the vibrations of the 26 strings pass right into the body with their healing sound. It should be noted, however, that sound therapists are trained, and properly informed usage should be observed. That said, in its own right the chair is a thing of great beauty and charm (Pics.29-31). **GW**

## TUNING THE 26 STRINGS

All of the plain strings are tuned to 'A' just below middle 'C'.

From left to right, as you stand at the back of the chair, the strings are tuned thus: 1- A, 2-a, 3-E, 4-a, 5-C#, 6-a, 7-C#, 8-a, 9-E, 10-a, 11- C#, 12-a, 13-E, 14-a, 15-C#, 16-a, 17-E, 18-a, 19-C#, 20-a, 21-A, 22-a, 23-C#, 24-a, 25-A, 26-a

## MATERIALS & LUTHIERS' SUPPLIES

- The timbers used (i.e. ash and mahogany) are easily available from a local merchant, but should be well seasoned
- Acoustic guitar strings can be bought as required (i.e. not in full sets of six meaning many are wasted) – from [www.stringsdirect.com](http://www.stringsdirect.com)
- Tuning pins, a wrench and hitch pins are available from the Early Music Shop [www.earlymusicshop.com](http://www.earlymusicshop.com)
- Good quality spruce for soundboards can be readily obtained from the following suppliers  
[www.touchstonetonewoods.co.uk](http://www.touchstonetonewoods.co.uk)  
[www.stewmac.com](http://www.stewmac.com)  
[www.tonetechluthiersupplies.co.uk](http://www.tonetechluthiersupplies.co.uk)  
[www.guitartonewoods4luthiers.co.uk](http://www.guitartonewoods4luthiers.co.uk)



PIC 31. The chair in use



# Letters & Makers

## Letter of the month



⬆ The Kity Bestcombi 2000 – although no longer in production, it's definitely worth tracking down a second-hand model if you're in the market for a similar piece of kit

### Good morning, Tegan

I'm writing to ask you a favour. Having long been a reader of your amazing woodworking magazine and a keen cabinetmaker, I've always relied on the great advice given by Andy King. I work for a power tool company in Cardiff, and until recently, Andy had been calling on me to recommend great equipment from Johnson Tools. It's just now that I really need his advice. I'm thinking of buying a small universal CWM150, which is made by a company called Bernardo. I can't for the life of me find a review anywhere that says whether it's good or bad, so I was hoping that Andy could point me in the right direction, with all the knowledge he has of machines. Could you pass this email on to him and ask him if he'd be able to contact me to possibly discuss the machine? It costs the best part of £1,000, which is a lot of cash to part with if it's not up to the job! Kindest regards, **Paul**

Hi Paul, I'm afraid I don't have any knowledge of that particular brand or model, but I've Googled it and looking on the Bernardo website, I think you'll be disappointed from what I can see. I know you're an avid woodworker and work to a high standard, so therefore I honestly think that this machine will come up well short of what you expect.

On first inspection it reminded me of the Kity Bestcombi 2000, but looking at the specs and the build quality, it isn't anywhere near the same – apart from the fact it's compact!

The saw and planer beds are only 615mm long (900mm on the Bestcombi) and the planer capacity is limited to 150mm surfacing and 150 × 92mm thickening, so it will be limited to smaller stock. This isn't a problem if you're only doing small stuff, but the quality of the adjusters and the pressed steel construction for fence tilt on the planer and so forth remind me of the budget machines that are imported from China and rebadged for the sheds or budget

ranges for other manufacturers. The spindle capacity isn't listed, but I don't think it would drive much beyond a 100 × 50mm block – it may not even be a proper block as the information states it has a 6/812mm end collet, so I wonder if it may be a spindle setup that only takes router cutters? There are models that allow the spindle to be swapped out, such as the entry level ones from Chamwood, but the height adjustment of only 45mm on this spindle does make me think this may be a router-based machine, rather than a true spindle block. I can only see one motor listed in the specs as well – 1kw – which will be under a lot of pressure if it is expected to do all of the work, even with the limited capacities. There isn't a manual so I can't check how modes are swapped. If it is a single motor but seems to be operated by the control panel rather than belt swaps, it would still be a lot of work for one motor over the course of time.

It's a pity the Bestcombi 2000 is no longer available as that was a great machine. I'm a particular fan of Kity and have a 419 table saw as well as a 439 planer – I love them. They're very well made, simple to set up and use, and are great performers.

The saw is a little underpowered on deep rips and can stall, but it works well if the feed speed isn't excessive. There's also only a 200mm blade, so it's limited in cutting depth. The cloned models from Chamwood, Axminster, etc. are 10in and when I looked at a version of one of these it was excellent and powerful, with the same style and adjustment as my Kity, with a cast-iron table as opposed to my Kity's cast aluminium.

I've been trying to track down a similar style/size of combi that might fit your purpose, but it doesn't seem to exist! I guess it might be worth trying to track down a second-hand Bestcombi 2000 if you are set on a small combination machine: it really is a great little unit with individual motors and great capacities, and although I never actually reviewed one, I have used it a few times over the years and have rated it ever since. Good luck and let me know how you get on!

**Andy King**

## Geometric construction of arches

Dear Tegan,

Today I read the letter from Paul Gustar concerning the construction of Gothic arches (GW322). I have used these arches for the construction of an oak computer table (see photos attached). The geometric construction of arches is very well discussed in a book by Ernest Joyce, 1970, entitled *The technique of furniture Making* (revised by Alan Peters in 1987) – Batsford Books, London. He describes eight forms of arch, and most importantly, gives full details of the springing lines, i.e. the points from which the arches spring, which are used as compass points for their construction. In a similar way to Mr Gustar's intentions for making the arches, for my table a plywood pattern and an ogee router cutter was used. I hope the reference to Joyce 1970 might be of some help for your reader.

Best wishes,  
**Ian Atkinson**

Hi Ian, thanks so much for getting in touch and for sharing your extremely useful advice. I absolutely love your computer table and the way you've included the Gothic arches really makes this piece stand out. I will pass your email on to Paul regarding the reference to the book and I'm sure this will come in very handy indeed. While this technique does seem quite involved, the end result certainly speaks for itself, and the piece you've shared is a great example of how geometric construction can be used to enhance furniture to its fullest.

**Tegan**



⬆ Ian's computer table in oak with its geometrically constructed Gothic arches

## WRITE & WIN!

We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about GW's features, so do drop us a line – you never know, you might win our great 'Letter of the Month' prize, currently the new Trend<sup>1</sup>/<sub>4</sub>in 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!





## One to watch: Bern Chandley

Australian Bern Chandley, a proper old-fashioned furniture maker, expertly hand-crafts Windsor chairs using both traditional and modern techniques, devoting himself to the task of creating pieces of heirloom quality.

He started learning about wood at an early age – 16-years-old in fact – when he began an apprenticeship in carpentry/joinery, learning a plethora of age-old techniques that would prove to serve him well to this day. After operating sporadically in the film industry as a set builder for a number of years, he proceeded to work on a great variety of projects and met many of his mentors during this time. He loved this career, but at the end of it realised he wanted to make furniture full-time.

### A passion for Windsor chairs

After a meeting with American master chairmaker Peter Galbert around seven years ago, Bern says that his “absolute passion for the Windsor chair was set ablaze.” As he explains, these pieces begin much closer to the primary source: “The tree, or more specifically, one recently fallen and in log form.”

All the Windsor chairs he makes have solid hand-carved seats into

which all parts are round tenoned. The leg tenons are tapered at 6° matched by the mortises, which are drilled through the seat then reamed at 6°, and when glued in place a wedge is then driven into the top of the leg, thus creating an immensely strong and durable joint.

As Bern has found, the structure of these chairs allows for an almost endless variety of designs, from decorative traditional to simplified modern and anything in between. All chairs he makes are finished using water-based paint, natural oils and wax.

His work also includes all manner of tables and cabinets with an emphasis on hand-finished details, thus ensuring unique characteristics to each and every piece of furniture he makes.

### Melbourne celebrity

Since starting out, Bern has gone on to make quite a name for himself in Melbourne and his pieces are always in high demand. He loves to share the progress of the projects he’s making and traditional techniques in action via his Instagram page, so check out [@bernchandleyfurniture](#), or have a look at his website: [www.bernchandleyfurniture.com](http://www.bernchandleyfurniture.com).



‘Shaker Meeting Bench’ – elm seat, American ash legs and spindles, with a crest in quartersawn Belgian oak



‘Leaf Stool’ – walnut, enhanced and strengthened with copper bracing



‘Oak Cabinet’ – quartersawn oak cabinet with hand-carved door panels in the style of 17th-century England and New England



‘Lowback Diner’ – part of Bern’s contemporary range of furniture under the ‘Windsor Modern’ brand

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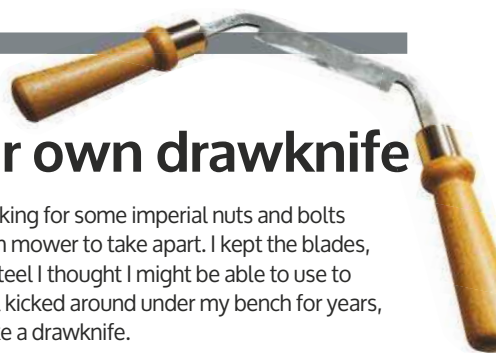
## TOP TIP: Make your own drawknife

Some time back I was looking for some imperial nuts and bolts and was given an old lawn mower to take apart. I kept the blades, which being a hardened steel I thought I might be able to use to make odd tools. The steel kicked around under my bench for years, then I had the idea to make a drawknife.

I first softened the steel on the domestic fire over night, as in the softened state it was easy to hammer out the twist that the mower blade had, then, using a hacksaw, I cut away part of the blade either side of the centre to leave tangs for the handles. The middle section was then filed to a rough bevel.

The next step was to heat the steel locally and bend the tangs to shape, then the whole lot was raised to red heat and quenched in water to re-harden the steel. The tangs were then heated in turn until the central blade took on a pale yellow hue to temper the steel, and after grinding, polishing and honing to a sharp edge, I added handles, which were finished with Danish oil.

I now have a drawknife with a 100mm blade, the total cost of which was next to nothing! **Bernard Greatrix**



# The (hall) tree of life

**Matthew White** takes inspiration from a vintage effect hall tree and creates his own walnut version that incorporates even more storage space – perfect for keeping your winter accessories tidy

I've been wanting to build a hall tree for the house since coats, shoes and cold weather gear tends to pile up by the garage entrance. It took a while, but I finally found inspiration in a model produced by Pottery Barn called the 'Declan', a stylish blend of modern and rustic that matched the rest of the decor. There were a few problems, however:

1. The original came in two sizes: 965mm and 1,626mm, neither of which fit the 1,270mm of wall space that I had available.
2. It's made of poplar. Sorry, but back where I'm from we use poplar for workbenches and framing for sheds.
3. It's expensive, considering I can get poplar for next to nothing at my local timber yard.

Given those issues, along with the fact I had a few days off from work and enough spare walnut on hand to put it together, I decided to construct my own to exceed the original's quality while still coming in well under budget.

To construct your own, you'll need a table saw, router (table), bandsaw or jigsaw, and a drill for counterboring screws. Let's get started!

## Upright supports

You'll notice there are only a few major components to the tree. Lucky us. The website for the original also gives us the measurements for most of the components, which comes in handy: Feet: 114 × 406 × 50mm; uprights: 38 × 64 × 1,499mm; shelf supports: 114 × 38 × 355mm; hook boards: 100 × 38 × (\*). >



The Pottery Barn hall tree, which formed the inspiration for my design





For most of the construction, I used 50mm stock, coming in at around 29mm planed, which seemed to be plenty strong for what was needed. Begin by cutting the four upright posts (32mm) as well as the two bases (51mm) (Pic.3). This will give you a rough idea as to the scale of the project.

Using the source photos alongside your parts, sketch a pattern for the S-curve support on the bottom (Pic.5). I built mine from 6mm plywood and trimmed it until I had something that looked correct, making sure to account for the tab between the supports.

Next, trace the pattern onto your material (Pic.1) and cut it to shape. I found it easiest to start with a jigsaw, refine the shape with a bandsaw, then stack and finalise the pair with a spindle sander. If you're missing any of that, a sander or a half-round file can do the job as well, just a little slower.

In a similar way, draw some patterns and cut the brackets for your shelves (Pic.6). Again, I went off the photos of the original and ended up with something close, using a 610mm radius for the sweep on top. Likewise, a sander comes in handy when cleaning up the edges and keeping everything uniform. Before gluing, also cut a 25mm block to finish off the bottom.

Sit everything out and finalise the spacing/etc. I kept the top shelf flush with the end of the post and placed the second shelf 406mm down, although in retrospect 356mm would have likely been better.

Once all the parts are cut to size, carefully glue everything up and clamp the whole stack



PIC 1. The two bases marked out on a single block of 50mm walnut – here you can also see marked the notional locations for upright posts



PIC 2. The two bases trimmed to correct length/width (PLEASE NOTE THAT BLADE GUARD HAS BEEN REMOVED FOR CLARITY)



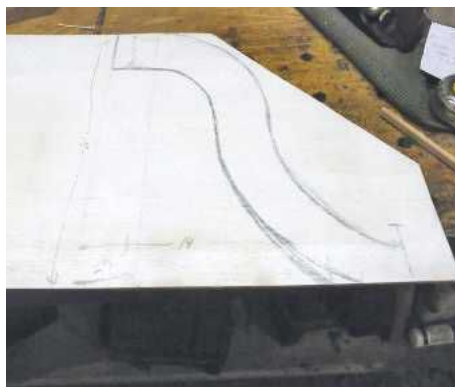
PIC 3. Ripping the posts (PLEASE NOTE THAT BLADE GUARD HAS BEEN REMOVED FOR CLARITY)



PIC 4. Blanks prepared for the shelf support



PIC 5. Pattern for the S-curve



PIC 6. Pattern prepared for the S-curve base support



PIC 7. S-curve pattern in place between posts and base



PIC 8. Once all the parts are cut to size, carefully glue everything up and clamp the whole stack in place



PIC 9. Shelf supports after rough cutting at the bandsaw



PIC 10. Final sanding of the supports at the disc and spindle sanders





PIC 11. The posts glued up with base and shelf supports in place



PIC 12. The planed and chamfered profiles added



PIC 13. Attaching the posts and S-curve supports to the bases with 10 × 50mm Festool Dominos



PIC 14. Pre-drilling and counter-boring screw holes for additional support



PIC 15. Routing the outside edges



PIC 16. 10mm walnut plugs



PIC 17. Preparing hook boards and shelf slats



PIC 18. Planning the layout and spacing of the coat hooks



PIC 19. Final surface cleanup with an added chamfer



PIC 20. Pre-drilling and counter-boring screw holes to attach coat hook boards to the posts

in place (Pic.8). This will take a few steps but needs to be done in one shot so as to not introduce undue stress in the assembly and also keep both sides uniform. After both are glued and clamped, make any adjustments as needed before the glue sets.

### Bases and some drilling, routing & jointing

After the supports are dry, reinforce the joints with countersunk screws from the sides and finish them off with caps. With these sanded flush, use a 45° chamfer bit in a hand-held router to hit the long sides of the uprights as well as the three front edges of the bases.

Next we will attach the bases to the completed uprights. Start by checking the bases are square and that they exactly match the S-curves with a framing square. If they are too tall/short, trim or sand the affected surfaces back.

To attach the bases, I used a Domino jointer (Pic.13) for the posts and a 100mm screw driven through the base into the curves, all reinforced by glue. If you don't have a Domino or something similar, pre-drill a few holes in the base and drive some heavy-duty screws up to keep things together. I'd stay away from biscuits since I don't think they'd be strong enough to take this much stress. After assembly, get out the sander and take care of any glue that happened to get squeezed out. >



### Hook boards

There are two horizontal boards, which will contain the hooks as well as keeping the two supports held up. This will inevitably put a large amount of stress on the four points where these boards intersect, as any pressure or twisting of the uprights will end up here.

Cut a pair of boards to length and use the same chamfered router bit to hit the front edges (Pic.19). At this point I also placed and marked the locations for the hooks. I had a box of rustic coat hooks laying around so I set up a row of eight on top, which gave me a spacing of a little over 150mm between each one (Pic.20).

Rather than be fancy and make something intricate to hide the joints, I went with more screws and plugs. As before, pre-drill four holes at each intersection, set the uprights in place, and screw the boards down (Pic.21). The spacing on mine was ~1,295mm and 813mm from the floor. In order to keep things even, use a large framing square before finalising the placement.

The screws will allow for more flexing in the final product while still being fairly strong (16 x 64mm self-tapping screws should hold for a while, right?) Again, finish this up by capping the holes (Pic.23), trimming down the plugs and sanding them flush.



PIC 21. Starting the screws

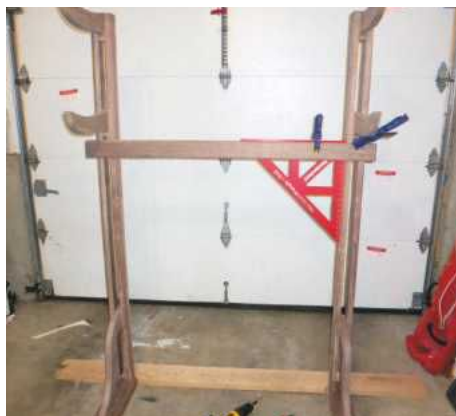
### Shelves

There are two shelves which still need to be added, each one consisting of seven individual staves. This is a little tedious, but the end effect is worth it. Each stave is 12 x 38mm, with 12mm of spacing between each one (Pic.24). My maths tell me this will be close to the 356mm we'll need to cover the whole thing.

I cut seven staves from the same 50mm material as before, then resawed each one down to the 12mm thickness required. I had some significant warping due to internal stresses on several pieces so if you have dedicated thinner material, I'd recommend the latter.

You'll also notice the tops of the original shelf staves are gently rounded (Pic.26). To do this, I used a large roundover bit set in the router table and only cut with the last half of the bit. This gave me a smooth radius across the top but still afforded me 6mm of thickness on the sides. Sand all the pieces and pre-drill them for the screws to hold them in place (Pic.27).

Beginning at the front of the brackets, set your first stave in place and screw it down so



PIC 22. Accurate assembly is key!

it's flush. With the aid of a 12mm stop, work your way back, adding one stave at a time and screwing it down with small fasteners. If you've measured correctly, you should end less than 12mm shy of the uprights.

### Finishing

Stand the tree up and admire your progress. Good? Bad? Ugly? A solid meh? In any case we're almost done! I thought about going with my normal stain and poly scheme, but the original was really meant to resemble a rustic antique. Something like linseed oil would probably be more authentic...

To darken the wood, extenuate the grain and don't get overly glossy – I used dark walnut Danish oil (Pics.28 & 29). This gets brushed on and in one step gives a good colour and decent protection from damage. Start at the very top and work your way down, cleaning up any drips as you progress. Once you get to the end, use a clean rag to wipe away any excess that you may have missed.

Let the assembly dry completely, add your hardware and some felt under the bases, and you'll be ready to contain a winter's worth of outdoor accessories! **GW**



PIC 23. Plugging stretcher screw holes



PIC 24. Finalising slat spacing



PIC 25. Rounding over slat edges



PIC 26. Slats sanded and pre-drilled



PIC 27. Slats screwed in place



PIC 28. Surface protected with dark Danish oil



PIC 29. The final deep, satin colour







A commercial air drying yard

# Drying & looking after your wood

What does 'drying' actually mean? Well, one thing's for sure, it's not anywhere near moisture free, as **Peter Bishop** shows here

There's a bit of a misapprehension surrounding drying, especially air drying (we'll define 'air' and 'kiln' drying shortly). It's basically that the longer you keep the wood, the drier it gets - which isn't true. There is an old adage applied to air drying wood: "An inch a year." This suggests that to air dry timber 1in thick will take one year, 3in thick will take three years, and so on. The question is, how dry is dry?

## The structure of wood

To answer that question we need to look briefly at the structure of wood and compare that to local climates. The first thing to point out is that wood is hydroscopic: it can give off and take on moisture. This means that even though a particular piece might be dry, it will take on moisture. It will do this especially when the atmosphere contains higher levels of moisture than it does.

Going back to basics, moisture in freshly

sawn timber, converted from logs, will be held in two key locations: within the cellular cavities and their walls. That contained in the first is called 'free moisture' and in the latter 'bound moisture'. Removing the first lot is fairly easy and can be done via air drying. Once this free moisture has been removed the wood is said to have reached fibre saturation point - FSP. Getting the rest of the moisture out of the cell walls takes the time. Here, in the UK, our average climatic conditions allow us to 'air' dry timber down to 18% moisture content, give or take a couple of points each way. If we wish to dry our timber below this average, then artificial means will have to be employed. This is when the drier wood is called 'kiln' dried.

## Air & kiln drying

We'll now take a little look at how we can achieve both forms of drying and why we need to do that. Wood needs to be cared for: left in a heap the bulk of the moisture will remain in it or be added to it. With little air circulation, this is an ideal breeding ground for both fungi and wood-eating and attacking insects.

When wood is first cut from the log it can contain more than its own weight in moisture. This needs to be removed without too much damage being caused to the structure. The ideal sequence of events is to stick and stack the planks so that they can be 'air dried' initially and then, if further moisture removal is required, they can be 'kiln dried' through an industrial process.

## Air drying

The principles of air drying are simple: the planks are set out layer by layer with thin strips of equal size and distribution laid upon each consecutive layer to enable air to circulate and help with the removal of the primary moisture. Stacks should be

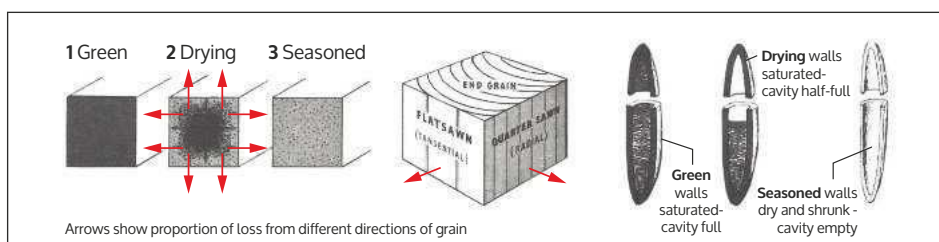


FIG 1. The way in which wood loses moisture



FIG 2. Basic air drying techniques





A dehumidifying kiln

made on clear ground free of weeds, undergrowth and any direct moisture. Concrete or wood blocks to a height of around 300mm is ideal. These should be in pairs probably about 1m apart and, say, of a similar width. Stout bearers are then placed across them and the first layer of planks put down. Thin strips are then placed directly over these bearers and another set of planks laid down. And so the process continues.

The strips, or stickers as they are sometimes known, are all of a uniform thickness. The most common size is 18mm, although there can be some variation on this. Some timbers will not benefit from too fast an air circulation around the planks while drying. This is especially so with thicker stuff. If the moisture is removed too quickly from the outer surfaces, this will shrink faster than the core, thus creating surface checks and splits. To avoid this timber over, say, 50mm-thick should be placed on 12mm strips. Thinner stock can go on the standard or even thicker strips up to 25mm-thick.

As the stack is built the strips must be kept in line with the original bearers. This ensures that weight is evenly transferred down through the stack, which helps to avoid unnecessary distortion. It is often helpful to weigh down the last layer with more solid blocks, which will stop the planks at the top of the stack warping out of shape. If left outside these stacks should be covered to ensure moisture does not penetrate and pool on any surfaces. A slight tilt back in the orientation of the whole stack will also help to avoid this. Maintain the stacks as the wood dries by removing any adjacent weed or plant growth. After the appropriate period of drying, the wood will be ready for use or the next stage of drying.

### Artificial or kiln drying

In most cases the lowest moisture contents



Stacks of timber going into kilns

that can be achieved through air drying are around 18-20% on average. At this level it is not suitable for use in modern houses. Further, artificial drying techniques have to be employed. There are a number of different ways in which this can happen. Dehumidifying chambers draw out the moisture under controlled conditions until the correct levels can be reached. These units can be made up from simple box chambers and in old shipping containers. Sealed vacuum cylinders use heat and pressure to remove moisture, and if used correctly this is one of the least defect producing techniques. Large-scale drying takes place with progressive kilns where timber is loaded one end and dried progressively to be removed, ready for use, at the exit. Other common kilns make use of heat and humidity to draw the moisture out to the required levels.

Within the modern well insulated, heated home and office the ideal moisture content

when it has dried to the required levels. By its very nature, wood has variable structures and therefore it is likely that one or more planks will be wetter than the average and one or more planks drier.

When making top quality furniture it is important to try and bring the wood being used into an equilibrium moisture content with the eventual location of the piece. To do this it is a good idea to store the nominal components in a similar environment for a week or two before work starts. Hopefully this should reduce any further shrinkage.

Central heating systems are the bane of antique furniture and the modern maker. The excessively low humidity levels will ensure that the best of our work is likely to move after we've made it. We'll discuss the different stresses that make wood move and a few ways in which you can mitigate this in another article. **GW**

The Sauno Wood Kiln from Logosol



is around 8-10%. Anything higher than this will lead to further shrinkage in use; anything lower might result in movement as moisture is gained. The whole process of drying and measuring the residual moisture is based on averages. Samples are taken from each charge and the average dictates

### NEXT MONTH

As Peter shows in the next article, from fencing to fine furniture, wood shrinkage and movement can have a big impact on the outcome of our projects

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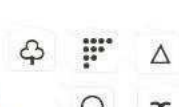


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# Up, up & away!

Tasked with making a unique Secret Santa gift, **Veronica Spencer** decided to fire up the lathe and used various pieces of laminated wood to create a rocket with a see-through acrylic window

**T**he Invention Studio, a student-run makerspace open to all students, staff, and faculty of Georgia Tech, had a Secret Santa gift exchange last year for its Prototyping Instructors. Because my recipient loved space, I made him a unique wooden rocket desk toy. I wanted to give it a 'realistic' see-through acrylic window, using an acrylic rod inlay in the blank. If you finish the rocket well enough, people will think that there's just a hole in it... that is, until they go to pick it up!

## Ideate!

I drew a lot of different shapes of rockets (**Pic.1**), and while this isn't necessarily a key part of building the project, doing a few quick sketches can help you collect your thoughts. It also gives people a chance to give you feedback before you spend a lot of time making your project.

After I made some quick thumbnail sketches, I asked my friends to tell me which one they preferred; I then scaled up the drawing of their favourite.

## Glue together a blank

I used my scaled-up drawing as a reference when cutting the different layers of my blank (**Pic.2**). Individual slices of wood were then cut

using the bandsaw, and, after each cut, I sanded the rough-sawn edges down smoothly using a disc sander.

I used four different types of scrap wood that were left over from various projects to make my blank (**Pic.3**): redheart for the rocket cap; maple for the white body; mahogany for the accent line; and walnut for the booster. The mahogany and the walnut were too similar in colour, so unfortunately they didn't delineate very well in the finished product. It was quite important that I kept all of the wood grains aligned for a spindle blank, rather than a bowl blank. This means that all of the wood grains ran parallel to the intended axis of rotation for the blank.

Using a liberal amount of wood glue, I glued and clamped each layer one by one (**Pic.4**), giving each layer 30 minutes to cure before I added on a new one. After gluing all of the layers together, I let the whole thing set overnight before moving on to the next phase of the build.

## Drill out a hole for the window

Having ordered a 12mm acrylic rod, I drilled a 12mm diameter hole in my wooden blank, assuming that I would be able to take advantage of a press fit when inserting the rod (**Pic.5**). I then chucked the blank in the drill press and proceeded to drill (**Pic.6**).

## Glue the acrylic rod into the wooden blank

First, you'll need to cut a piece of the acrylic rod down to size. I cut it slightly longer than the total width of my blank, so that I could have roughly a 3mm overlap on either side (**Pic.7**). To achieve a good adhesion of the glue to the acrylic rod's surface, you'll want to scuff up the length of the rod using a piece of coarse grit abrasive. Then, you should deposit a line of wood glue on the acrylic rod.

As you insert the acrylic rod into your wood blank, you'll want to spin the acrylic to cover both of the surfaces with glue. Because I counted on a press fit, I had to use a mallet to get the rod fully into the blank.

Wait for the blank to dry before doing any more work with it – this is very important. I'd give it a day to cure, otherwise you might get an unpleasant surprise when turning the blank on the lathe later.

## Turn the blank to shape

Once all is dry, you're ready to chuck the rocket blank in your wood lathe. I stabilised mine using a live centre in the tailstock, and I got the blank as close to centred on the lathe as I could by locating the centre of the bottom of the blank (**Pic.8**).

Move the toolrest as close to your blank as

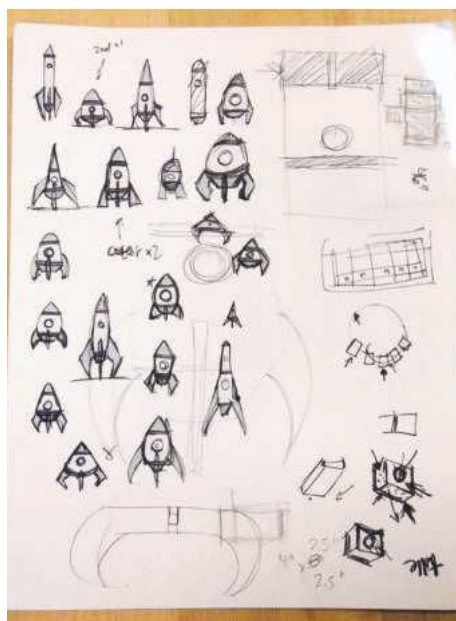
## MATERIALS & TOOLS REQUIRED

### MATERIALS

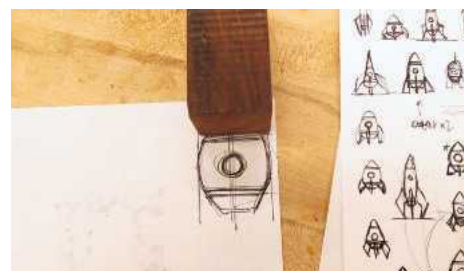
- Assorted scrap wood with a 50 × 50mm cross-section
- clear acrylic rod – 12mm diameter
- Wood glue
- Range of abrasives (including Micro-Mesh)
- CA adhesive
- Paper towels

### TOOLS

- Bandsaw
- Drill press
- Lathe
- Mallet
- Wood lathe and a selection of turning tools
- Clamps
- Sanders
- Scrollsaw



**PIC 1.** The various different shapes of rocket I initially drew



**PIC 2.** I used my scaled-up drawing as a reference when cutting the different layers of my blank



**PIC 3.** A few of the different woods used to make the project



possible. Test for interference by manually turning your blank on the lathe, and adjust the location of the toolrest if the blank hits it.

Using a spindle roughing gouge, turn the blank at a relatively slow speed. As you turn the square cross-section into the round, you're going to need to stabilise the gouge on the toolrest. The various textures of the different woods in the blank may be difficult to manage; some woods are prone to chunking out while you're turning them, and that was the case with my walnut.

Once your blank is rounded over, use whichever lathe tools you prefer to turn your blank down to approximate your intended shape (**Pic.10**). In my case, I used a smaller spindle roughing gouge and a round-nosed scraper to shape the blank. At this stage you can also increase the lathe speed slightly. This is also the time when you'll start to deal with the acrylic rod. It'll have a different texture when you're turning than the other sections of your blank, but it handles just fine.

If you turn away so much material that you start to see a noticeable gap between the toolrest and the surface of your work, stop the lathe and adjust your toolrest up to the new edge of your blank.

### Sand the rocket body smooth

Once you've achieved the shape very close to what you're looking for, you'll want to sand down the rocket body (**Pic.11**). This will remove material, and you can count on coarse abrasives to help you refine the shape. During this process, make sure you don't press down too hard while sanding, otherwise the rocket may break while mounted on the lathe. Next, take an assortment of abrasives, ranging from coarse to fine grit. I used 60, 120, 220, 320, and finally 400.

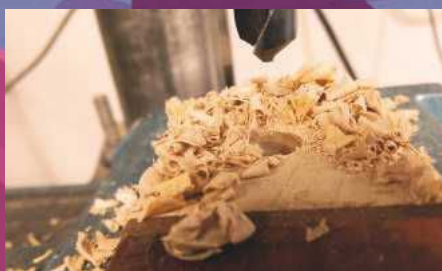
Turn your lathe up to a higher speed, and starting with a strip of the coarsest grit abrasive you have, you'll want to hold either side of the strip under the rocket as you sand the full length, >



**PIC 4.** The four layers of the rocket, glued and clamped up



**PIC 5.** The glued up blank, drill bit and the acrylic rod



**PIC 6.** Using the drill press to drill a hole for the rocket window



**PIC 7.** The hole drilled in the blank, ready to accept the acrylic rod



**PIC 8.** Chuck the rocket blank in your wood lathe and stabilise it using a live centre in the tailstock



**PIC 9.** The rocket shape is beginning to emerge





**PIC 10.** After some further turning and rounding over, the shape begins to look even better



**PIC 11.** Once turned, the rocket body needs to be sanded through a range of abrasive grits until you've achieved a consistent, smooth finish



**PIC 12.** The rocket body all sanded and the window finished on the lathe using CA adhesive



**PIC 13.** One of the redheart fins glued on – now for the other three!



**PIC 14.** The completed rocket and its galaxy-themed box

smoothing away any of the lines or marks left by the turning tools. You may have to stop the lathe and check the rocket for a consistent finish.

Once you've achieved a consistent coarse grit finish, switch to the next finest strip of abrasive, and use this to smooth out any marks left by the coarser grit until you achieve an even finish.

Repeat until you've worked your way down to the finest grit. It's incredibly important that you get down to a super fine, uniform finish, or else the acrylic won't clear up in the next step.

### Finish & remove from the lathe

I've used CA adhesive finishes for wooden pens, and it's a viable method of finishing off a project. One important property of CA adhesive is that if you drop it onto a cloudy, smoothly-sanded clear plastic surface, it will clear up the plastic again. I learned this after watching my friends systematically destroy a pair of safety glasses! Either way, the adhesive is what will make the little window in your rocket ship clear again, and it also adds a smooth, shiny, durable coating.

While your rocket is still on the lathe, you'll want to wipe off any sawdust/chips/residue from the surface of the rocket, using paper towels. I do this by turning on the lathe – keeping it at the same speed as used for sanding – and lightly pressing a clean section of the paper towel to the surface of the rocket, and making passes along its length. If you pull away the paper towel and see a lot of dust, you'll need to repeat the process until you're fairly sure the piece is clean.

Drop some CA adhesive on a clean piece of paper towel, and while the lathe is on, run this along the length of the rocket to apply the glue until you coat the whole project. The goal is to apply a thin, complete coat, and it may take a little practice before you can execute it well. Keep the lathe spinning for a few minutes after you finish applying the CA; this will allow the glue to set up and dry.

Turn off the lathe and remove the remainder of the blank from your setup. Be careful when handling the finished piece, in case the glue hasn't fully dried. If you touch the glue before it has dried, you'll add a permanent finger print to the finish, which you obviously don't want.

Next, take a parting tool and remove the chucking spigot from the top of the rocket, and then sand down the remaining stem to complete the shape. Once this is done, apply a thin coat of CA adhesive to the top of the rocket.

As a quick side note: since completing this project, I was kindly informed by a fellow woodworker that Micro-Mesh can be used to impart a clear aspect to the acrylic rather than using CA adhesive. All you need do is sand to a higher grit – probably 1,200 – using the Micro-Mesh sanding pads, slightly wet to avoid the buildup of super fine dust. Pen turners may be familiar with this technique and it's a great one to use for projects such as this one.

### Cut out the fins

I cut a 6mm-thick piece of stock from one of my leftover pieces of redheart, drew out the

rough shape of one fin, and cut that out using a scrollsaw. After some careful sanding, I was able to fit the curvature of the fin to the rocket body. I traced the finalised fin on the remainder of my 6mm-thick slice three more times, then also cut those out on the scrollsaw. I sanded the remaining three fins to match the first one.

### Glue on and finish the fins

If I had to redo this project, I would choose a different method than what I'm about to describe: taking my fitted fins, I carefully, one-at-a-time, glued each one onto the rocket body, using CA adhesive. Aligning and straightening the fins proved difficult and unwieldy, and I was never quite sure when the glue would decide to cure. Also, until I got three of the fins attached, it had difficulty balancing. After I attached the fins, I coated them with a thin layer of CA in order to match them to the redheart cap.

Instead, I would recommend cutting a slot in the bottom of the rocket body, and placing tabbed fin cutouts into the slots at the bottom. It makes alignment, shaping and glue-up a lot easier. If you use this method, I would recommend finishing the fins before you attach them, using a quick polyurethane coat to avoid cloudiness that can be associated with CA finishes that aren't applied in a thin coat.

Since this project was a Secret Santa gift, I decided to make a galaxy-themed box to package the rocket in (**Pic.14**). The gift was really well received and I'd highly recommend you make one if you're creatively inclined! **GW**





## WOODWORKING LIVE 2017

Woodworking Live from Record Power is an exciting new event being held within 'The' Tool Show '17 in the Desert Orchid Suite at Kempton Park Racecourse in Twickenham from 6–8 October 2017. This exciting new show brings together some of the UK's most well-respected and popular woodworkers in one place for three days of inspiration, creativity, and entertainment.

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Nick has been creating a storm on social media and YouTube over the last year, bringing the world of woodturning and his famous coloured pencil and resin creations into the public eye. His lively and creative videos are inspiring a new generation of woodturners and it's Nick's mission to turn as many people onto woodturning and making as possible.

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## AROUND THE HOUSE with Phil Davy



**A**ccidents do happen. I can hardly believe it now, but I was carrying one of those collapsible plastic storage crates loaded up with decorating stuff. One of the handles was broken, but rather than bin the thing I'd continued using it. Bad move, as the crate suddenly gave way, emptying the contents across the garden. This included an almost full, five litre tin of specialist exterior brown stain, which was not exactly an inexpensive product. Luckily, the lawn was in a bad state and some months later this was re-turfed anyway. Looking on the bright side, I'd hate to think of the consequences of my stupidity if it had been my mother-in-law's carpet, rather than the grass!

### BOOK REVIEW: **Outdoor Woodworking**

Projects designed for the garden are always popular with woodworkers, no matter what our level of skill and experience. They're perfect for novices as materials tend to be cheaper and softwoods generally easier to work with. Often you can use recycled timber or adapt dimensions to use up offcuts. This book contains 20 such projects from various contributors.

#### Where's the dibber?

Although a dibber is mentioned in the intro pages, this obviously received the chop! Beginning with a bird table instead, this is certainly rustic and easy to build. A handful of items such as a window box, weathervane, arbour and tea lantern are not actually constructed, but simply shown with CAD images, drawings and a brief description.

#### An interesting mix

Some projects are more agricultural than others and include a Versailles planter built from pallets. Its rough-sawn texture provides a welcome, earthy contrast to what is normally a classical design. Then there's a rather elegant traditional garden gate in hardwood, plus a delightful patio trolley from sapele and iroko. If you're a fan of the Adirondack chair, there's a lovely double loveseat featured, too. Wildlife is not ignored, with dovecote, nest and bat boxes included in the pages. Various seating, bench and table designs complete what is an interesting mix of outdoor projects.

Cutting lists and equipment required are given for most projects, though tool lists don't always seem to match sequential photos. Hopefully the cutting lists are spot-on, though.

Photography is a little murky in places, though mostly fine. If there's no Indian summer around the corner at least you could build one or two of these projects over winter, ready for use next year...

#### THE GW VERDICT

- ▶ **RATING:** 4 out of 5
- ▶ GMC Editors published by **GMC Publications**
- ▶ **PRICE:** £14.99
- ▶ **WEB:** [www.thegmcgroup.com](http://www.thegmcgroup.com)

### USEFUL KIT/PRODUCT: **Veritas Mini Bench Plane**



If you've always lusted after a full-size Veritas plane but couldn't justify the high price tag, maybe here's the answer. A new addition to their growing range of diminutive hand tools, this plane is a third scale version of the bevel-up smoother (which would currently set you back more than £200). With a cast stainless steel body, it's just 90mm in length and 21mm wide. The 16mm wide polished blade is from A2 tool steel and comes with a finely ground 25° bevel. This seats neatly on the bed, a tiny hole locating over a Norris pattern adjuster, so you have lateral as well as depth adjustment. The cast lever cap secures the blade with a thumbscrew. Setting blade depth is a little fiddly even with small hands, but it's quite possible.

#### A delightful little tool

Fitted with polished bubinga handles, this plane is not simply for display. You may struggle to find a use for it, but at least it functions properly!

I managed to get some fine shavings without even honing the blade. Like the grown up Veritas tools it's really well finished and supplied in a fitted leatherette box. It's certainly a delightful little tool that's bound to make any woodworker smile.



#### THE GW VERDICT

- ▶ **RATING:** 4 out of 5
- ▶ **TYPICAL PRICE:** £44.39
- ▶ **WEB:** [www.brimarc.com](http://www.brimarc.com)

## AUTUMN PROJECT – FITTING A WORKTOP

**TAKES:** One day

**TOOLS NEEDED:** Marking tools, block plane, drill and bits, jigsaw, file, screwdriver

# Bathroom DIY

Completing a vanity unit he recently installed, **Phil Davy** goes on to fit a laminate worktop to finish the job

To complete a vanity unit I recently made, I fitted a (high pressure) laminate worktop, which is cheaper than solid hardwood and less of a problem when there's water about. Laminated worktops are generally post-formed, which means that the laminate is wrapped around the raised front edge, with a drip groove to prevent liquids running back underneath. There are two common thicknesses of worktop available: 30mm and 40mm. Unless you're on a really tight budget, always choose the thicker material; it's more substantial and so resists sagging and looks better.

Take care when handling a worktop, especially before you cut it to length: a 4.1m-long, 40mm-thick top weighs around 80kg and its shiny surface means it can easily slip out of your hands when you're carrying it. It doesn't take much to chip this material, which is one of the disadvantages, so get someone to give you a hand lifting it, if necessary. The unit has an inset ceramic basin above the cupboard, fitted into a D-shaped cut-out in the worktop.

Most sinks or basins will be supplied with a paper template for cutting, which can be temporarily fixed to the surface with SprayMount adhesive. Position this template carefully, as it marks the exact line you need to cut to. Keep the workshop's protective film in place for as long as possible.

### Cutting laminate

There are several ways to cut a laminate worktop to size, but whatever method you use you should take great care to prevent chipping. If there's enough spare on the length of the worktop, make a trial cut first if you've never sawn the material before.

For making the cut-out for a basin or sink you'll need a jigsaw. Use a new blade, preferably one designed specifically for cutting laminated materials. A conventional jigsaw blade has its teeth pointing upwards, so the cleanest side of the cut will be underneath. This means you should saw with the worktop upside down to stop the laminate chipping; it's also a good idea to lay masking tape along the cutting line as an added precaution. Reverse teeth blades mean you can saw the worktop with the laminate uppermost, though the cutting action takes some getting used to as the jigsaw has a tendency to lift upwards. Whatever blade you use, it's important the tool cuts squarely, so check that the soleplate is at exactly 90°. Many jigsaws will cut accurately in material up to about 25mm-thick, but it can be a different story with 40mm-thick chipboard, especially on curves. If the end of a worktop is not sawn dead square, not only will it look dreadful but you'll have problems gluing on the lipping.

Rather than using a jigsaw, you can make straight cuts with a portable circular saw, which is designed for thicker material. Again, cut with the worktop upside-down. Whether using a jigsaw or circular saw, though, you should always run the tool against a guide rail or batten for straight

cuts. If using a handsaw, use a fine-toothed hardpoint tool working with the worktop face side up, though you'll struggle to get a really clean finish.

Exposed sawn ends should be lipped with matching laminate, which is usually available in 45mm widths; this is glued with contact adhesive and can be trimmed flush as soon as it's stuck in place.

### Sealing the top

It's important to seal the laminate worktop's remaining sawn edges, especially when it's fitted in a kitchen or bathroom: if water finds its way into the core then the chipboard will certainly swell. Either brush on PVA glue or spread silicone sealant across the edges, particularly around the basin cut-out.

The worktop is finished off with a laminate upstand, though you may prefer to tile the wall instead. Upstands are about 120mm high and 19mm-thick and usually match the worktop pattern. If you screw it to the wall you'll have trouble concealing the screws, so it's usually glued in place. Use a grab adhesive for this; I used Evo-Stik Gripfill in a cartridge gun, which, once cured sticks to almost anything, so make sure everything fits neatly!







**STEP 1.** Start by positioning the cupboard base unit and fixing it firmly to the wall using steel brackets or similar hardware



**STEP 2.** Place the worktop on the unit and run a pen against the wall for scribing with a jigsaw



**STEP 3.** Stick the paper template to the underside with spray mount glue and proceed to cut carefully around the line



**STEP 4.** Reposition the worktop and mark the overall length required, allowing for an overhang at the end



**STEP 5.** Brush PVA glue on to all sawn edges to seal against water penetration; alternatively, you can use silicone if you prefer



**STEP 6.** Saw the worktop upside down if you're cutting with a normal jigsaw blade, supporting the waste piece



**STEP 7.** Brush contact glue along the worktop's sawn end, and the back of the laminate lipping



**STEP 8.** Allow the glue to dry, then position the lipping on the worktop, checking you've left an even overlap on either side



**STEP 9.** Next, use a cork sanding block or padded wooden block to apply even pressure to the length of the lipping



**STEP 10.** Carefully trim the lipping with a finely-set block plane, working down almost to the surface



**STEP 11.** Use a second-cut file, titled, to smooth the lipping flush with the worktop surface



**STEP 12.** Replace the worktop above the unit and check that it fits snugly against the wall



**STEP 13.** Next, drill up through the front rail of the unit and into the worktop. Countersink the holes and insert the screws



**STEP 14.** Use stretcher plates on the end panels, though check that the screws don't penetrate the outer veneer



**STEP 15.** Screw the cupboard doors to the unit and check that it closes neatly; adjust the magnetic catches if necessary



**STEP 16.** For an internal corner the upstand should be mitred at 45°, a cut that can be made with a titled jigsaw



**STEP 17.** With both pieces sawn, check that the mitres fit together neatly, trimming with a plane if required



**STEP 18.** Mark the upstand to length and saw it carefully. The exposed sawn ends are then lipped with laminate



**STEP 19.** To avoid unsightly screws, upstands are often glued; apply a suitable adhesive and use hand pressure to hold the upstand in place



**STEP 20.** Using a cartridge gun, apply a narrow bead of sealant along the joint between upstand and worktop



**STEP 21.** Run a thick bead of silicone around the opening, and then lower the basin down on to the worktop



**STEP 22.** To finish the walls around the unit, cut matching skirting to size where needed and apply a bead of glue to the rear face



**STEP 23.** Gluing short pieces of skirting to the wall like this is easier than screwing, but harder to remove later if required



**STEP 24.** Finally, fit the top to the basin, and connect up the waste and water supply pipes. And that's it – you're done!



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# Laser quest

Making use of the clever Simon Hope laser kit hollowing system, **Les Thorne** turns a vase in English yew before adding texture to the outside and an ebony insert to create contrast

**L**ike a lot of other blokes, I love a gadget, so I'm always on the lookout for the latest gizmo that's going to make a huge difference to my turning (well, that's what I tell my accountant anyway). Hollowing vases and pots has been a turning technique for many years, first being popularised by US woodturner David Ellsworth. There have been many specialised tools made for hollowing both end- and side-grain timber with a lot of them based on a ring tool with a chip limiter on the top to prevent the tool digging in.

It's important to have a tool that doesn't catch, as a lot of the time you will be working blind through a small hole. Ellsworth specialised in working through tiny holes and turning very thin, although this does require a huge amount of skill with developing a feel for the tool an absolute must. The two main issues with working blind are knowing where the tool is located inside the piece and being able to measure the wall thickness.

This laser kit system from Hope Woodturning ([www.hopewoodturning.co.uk](http://www.hopewoodturning.co.uk)), which can be fitted to the hollowing jig, uses a laser to gauge the wall thickness of the piece. Tools, jigs and a laser – what's not to like. Try starting with a simple egg-shaped pot before moving on to something a little more ornate until you get used to the setup, as you do need to think a little about how the cutting edge is being presented to the wood. **GW**





**STEP 1.** A log of English yew, about 300mm long and 180mm diameter, very dry and with that knot on the side was going to be very hard. There were also some old woodworm holes in the sapwood that I'd have to contend with



**STEP 2.** Mount the blank up between centres on the lathe, and set the speed of the lathe to about 800rpm. When working on something as uneven as this, you need to ensure the wood doesn't hit the toolrest



**STEP 3.** Use a bowl gouge to complete the initial roughing, holding the tool locked to your side and swinging the cutting edge into the timber. I like to take the uneven parts down in sections before executing a planing cut



**STEP 4.** Here you can see the position of the bowl gouge during the smoothing cut; this will allow you to stand to the side and out of the firing line, as bits of bark or loose wood can come flying off rough timber such as this



**STEP 5.** Once you have the wood completely round you can then switch to using the spindle roughing gouge. Keep the handle of the tool down so it cuts instead of scrapes; this will afford you the best finish



**STEP 6.** As if I didn't have enough going on with this project, I also discovered a great big split in it. I had hoped that I could remove it in the shaping, but it was too deep so a design change was needed



**STEP 7.** The log was very uneven on the end, so it needed to be trued up. A bowl gouge as opposed to a parting tool will give a much more controlled and enjoyable cut, and though not required here, will give a better finish



**STEP 8.** When using dovetail jaws, it's important to be accurate with your spigot. These jaws work best when they make a perfect circle – any larger and you will only be gripping on the corners



**STEP 9.** A common mistake when cutting dovetails is to put too much angle on them; this is about perfect at around 15° to suit the Nova chuck jaws. Make sure the top of the jaws will locate onto a flat surface above the spigot





**STEP 10.** Turning of an egg shape is completed using the bowl gouge, all the time working downhill; this means you are working with the grain and will get the best finish off the tool



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



**STEP 12.** When hollowing in end-grain, it's an advantage to drill the centre out. I turned a small location hole in the end of the work using a spindle gouge, which ensures the drill will have a perfect start



**STEP 13.** I used a twist drill as I like the way the shavings exit through the piece. You can see the way the shavings swell after they've been cut. Using a Forstner bit allows the shavings to back up behind it



**STEP 14.** Here you can see my normal stance when hollowing on the big lathe. I could transfer the work over to one of my swivel-head lathes but they're not as powerful as this 3hp Oneway



**STEP 15.** This hollowing tool with its small carbide cutter from Simon Hope is one of the best tools I've ever used. The combination of the big bar and small cutter is perfect for working blind



**STEP 16.** The rig is all set up on the lathe. It's important to get a good fixing to the lathe bed to avoid any chance of vibration. I do the initial hollowing without the laser attached



**STEP 17.** Not leaning over the lathe helps to make the whole process much more comfortable and enjoyable. The cutter is angled slightly down to take some of the force away from the cutting edge



**STEP 18.** Keep the toolrest close to the work, and wherever possible, try to work over the stem of the rest as this will be the strongest part. I found it best to keep the tool presented horizontally





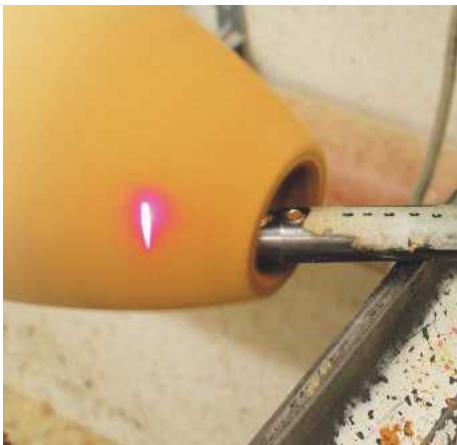
**STEP 19.** Here I've opened up the hole in the top to around 40mm. Measuring with a pair of Veritas hollow form callipers is an old school method, but you need to keep stopping the lathe and removing the tool from the work



**STEP 20.** The laser part attaches over the top of the hollowing rig. Others I've encountered in the past tend to use cheap unreliable battery lasers, whereas this one uses a mains version, so you need to keep the cables out of the way



**STEP 21.** To set up the laser you need to position it to your desired wall thickness and away from the cutter. The spot on the paper shows that I will end up with a thickness of around 5mm



**STEP 22.** You can see how the laser sits on the outside of the work while the tool is on the inside. The spot of the laser will elongate just before it falls off the vase, which signifies the perfect wall thickness



**STEP 23.** This type of tool tends to make small chips rather than shavings, so they can be easily removed with the help of compressed air – you don't even need to turn the lathe off to do this



**STEP 24.** One of the most difficult parts in turning vases like this is the part near the bottom. When working down near the chuck, I set the laser just off the end of the cutter



**STEP 25.** To improve the finish on the inside, I changed to a tear-drop scraper. These are difficult to sharpen on a grinder without the aid of a stem sharpener. The cutter screws to the top and allows you to rotate it against the wheel



**STEP 26.** The cutter will work best when presented perfectly on the centreline, so I made up a gauge to allow me to get the tool right, not only at the top but at the bottom of the piece as well



**STEP 27.** Once you have lightly scraped the inside of the vase to a good finish, it's time to make the top. I used a small piece of ebony as the contrast between the black and the yew looks good





**STEP 28.** Make the wood round and cut a spigot on one end, then mount it up in your chuck; this will form the top of the insert. You need to drill a 20mm hole all the way through



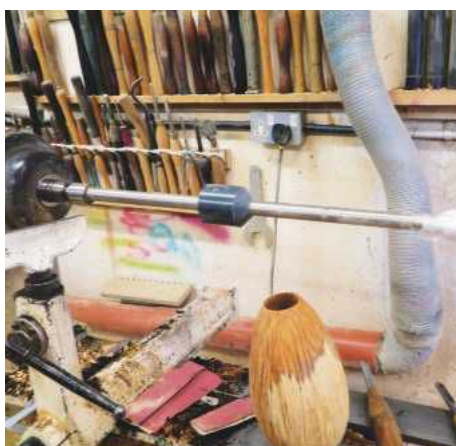
**STEP 29.** Use a parting tool to turn a shoulder down until you get a tight fit into the top of the vase. The ebony should overhang the vase by about 5mm, which will allow you to turn a bead



**STEP 30.** When sanding the inside, tuck the drill into the body and ensure the pad runs through the centre of the bowl. With coarse abrasives such as 60 and 80 grit you can ruin an interior shape with bad sanding



**STEP 31.** Here you can see the top is too big, so I decided to cut the height of the insert down as it will overpower the piece if left that size. This wasn't ideal as I don't like wasting exotic timber, but at least I'll know for next time



**STEP 32.** Before the top is glued in you need to remove the chucking spigot. I used a special jig to help me remount the vase between centres



**STEP 33.** It features a movable cone that will locate and lock into the top of the vase. Don't put too much tailstock pressure onto the end of the piece; you only need enough to be able to drive it



**STEP 34.** Take care when making these final cuts as you don't want to ruin the piece now. When this is all turned away you need to glue in the piece of ebony



**STEP 35.** The bottom needs to be sanded, so I mounted a 50mm sanding pad in the drill press and went through the grits starting at 120 and finishing at 400, followed by a couple of coats of oil, then the piece is finished



**STEP 36.** The completed vase in English yew with an ebony insert should look something like this



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# OUTTA' SPACE

When small isn't beautiful

Physical constrictions means that some jobs cannot be undertaken and shouldn't be tried

If it's a bad workman that blames his tools, is it a bad workman that blames his workshop? I don't think so. Can you expect an athlete to run in shoes a size too small? Can a violinist be virtuosic with a string missing? How then, if you have a workshop that doesn't allow you to rotate an 8x4 sheet and swivel a 12ft plank (not necessarily at the same time) are you not allowed to be annoyed? When you complain - to yourself if no one else - that you can't be expected to work in conditions like this, trust yourself: you're right.

Some frustrations are obvious. Physical constrictions means that some jobs cannot be undertaken and shouldn't be tried. Overcrowding in the workshop (you, the tools and all the stuff) leads to bad practice. You do things you'd rather not do because there is no other way. Machines aren't given their proper working area. You don't stand right. You think that piece of wood will miss the can of oil but you can't be sure and you can't check without bending your bones underneath some planks laid out on a trestle, and you've been under there too often already. You'll risk it.

And then there's the clutter. It's not just the stuff you need but the stuff you might need. Woodworkers are closely related to squirrels. This is not a weakness. Squirrels are very clever. They are inventive and tireless, but like woodworkers they sometimes put things in silly places; or put them somewhere sensible and then forget where. This is why saplings grow in the middle of lawns.

## How to be smug

You need a system. A system means that everything knows where it belongs. When it's not being useful, it goes there. And, by the same token, when you haven't seen it for a while and you suddenly need it, you know just where to find it. When you do, you have the bonus of smug self-satisfaction. The second law of thermodynamics states (correct me if I'm wrong) that the universe is gradually falling apart. That includes your workshop. It naturally tends towards disorder. To reverse this process, you have to pick things up as you pass them whether you want to or not, and put them back where they came from. It's tedious. A not inconsiderable time can be spent countering entropy. And every now and again, a whole day can be consumed by radically sorting out, tidying up and rearranging, in the vain hope that this time your world will stay in order.

## How to be warm

Offcuts have to be the bane of the woodwork shop. Racks strung up to the ceiling get packed with odd bits slid in, and everything covered in dust. A stack resting against the wall will behave itself for a while but then reach critical mass and cascade over the floor like logging down a river. The only thing that has worked for me is a rack made of galvanised water pipe (presumably by the plumber who used to have my last house - he connected the village to the water main in the 1930s - every house but his own!) such that short tubes stood out from the wall horizontally, and timber could be loaded and unloaded without obstruction. First, though, be brutal. Unless it really is too good to discard, burn it. Winter is good for this. When you can't feel your fingers, you're less sensitive to waste.

## How to be rich

The rewards of good woodwork-shop-keeping are enormous. Literally. You can convert a dangerous cramped cupboard into a ballroom. Well, maybe that's going too far, but it can feel a bit like that. When you come back in the morning subconsciously expecting the same old congestion and find empty floor space, a clear bench and tools sitting politely together in their families waiting for action, your heart will lift. You have fresh affection for your workshop, and fresh affection for woodwork. The job you've been putting off for months, you now can't wait to begin. **GW**

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