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The Madeira Lift, which is still operational today

Welcome

Secret Brighton

Although I've lived in Brighton (and Hove) for the best part of 20 years, there's still so much of the city and surrounding areas I've never seen. We all know how the years fly by, but a newly released book called *Secret Brighton* recently caught my eye. It is a fascinating read, packed full of interesting historical information, detailing hidden treasures I've never even heard of. From the relatively well-known to the downright bizarre, unusual and underground, this handy pocket guide accompanied me on a jaunt around the city as I took off one Sunday afternoon, very excited to see what I could find.

Old-fashioned fun

My first port of call was Marine Parade, where I could tick a few hidden gems off my list, the first being the Madeira Lift, a Grade-II listed Victorian architectural marvel, which, according to author Ellie Seymour, "was restored to its former glory back in 2013. In its heyday, the lift carried thousands of Victorians, dressed up in their seaside finery, from grand whitewashed Regency homes down to the beach for their daily constitutional." It was originally operated using a hydraulic pump, and up to 15 people could be carried at any one time for a halfpenny each way. Made out of cast-iron, the lift was intended to resemble the oriental design of the Royal Pavilion and has four griffins and an ornate dolphin weather vane on the top.

Brighton's eccentric inventor

Inventor of the infamous Volk's Electric Railway, built back in 1883 and which remains a popular working tourist attraction to this day, Mr Magnus Volk, the entrepreneurial and creative son of a German clockmaker, set up his intriguing yet bizarre wooden offices and workshop in the side of a cliff at Paston Place. Still used today, entering the building is like stepping back in time and the store is jam-packed with all kinds of spare parts and wonderful old power tools. As well as inventing and building Volk's Electric Railway, he also came up with the idea for the ill-fated 'Daddy Long Legs', remnants of which can still be seen near Brighton Marina at low tide. When Volk realised he couldn't extend his electric railway any further, he decided to turn his attention to a new venture: a completely new railway that could travel through the sea, called the Brighton and Rottingdean Seashore Railway. Originally built back in 1894, it was 5.5m wide to carry a 'salt water tram', called *Pioneer*. It weighed 45 tonnes and was supported on 7m high struts, allowing it to travel through the water. With its gangly appearance, *Pioneer* quickly earned the nickname 'Daddy Long Legs'. During its short life, the railway carried around 44,000 passengers a year.

The 'Preston Twins' prior to collapse…

… and after

The Brighton and Rottingdean Seashore Electric Railway, or 'Daddy Long Legs' as it was also known

The oldest English elm trees in Europe

Venturing further into the city to visit the 'Preston Twins' in Preston Park, I was surprised to learn that Brighton and Hove is home to more types of elm tree than any other city in the world. The park is considered a living museum as it's home to around 30 different types, including those mentioned above. Thought to be the oldest English elm trees in Europe – and possibly the world – these hollow giant(s) are estimated to be around 400-years-old. What the book neglected to mention, however, is that sadly, one of the twins collapsed back in August 2017 and suffered catastrophic structural damage with a major portion of the crown snapping off in two large sections. Some parts luckily still remain, and council specialists worked tirelessly to maintain and manage this historically important tree.

So, it just goes to show that, no matter where you live, every town and city has its own, unique history. I hope you've enjoyed my little glimpse into some relics of the past!

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Technical & Consultant Editor

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

26 MISSION IMPOSSIBLE – PART 1

In the first of a four-part series, Shaun Newman embarks on the making of a classical guitar with detachable neck, which is cleverly designed to fit into the overhead locker of an aircraft

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The Woodworker & Good Woodworking
SEPTEMBER 2019

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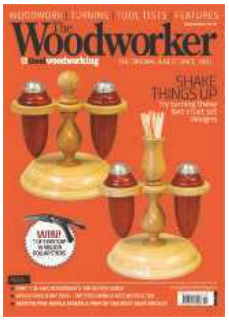

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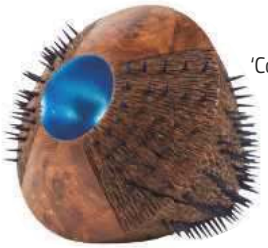

Emmet Kane 'Cone of Colour' in burr elm

Waters & Acland Furniture School – 'Gulloche' by Fernanda Nuñez

Furniture aficionados and those who appreciate fine craftsmanship in decorative arts will have their appetites amply served once again this August (17–26) at the largest and most eclectic exhibition of contemporary, bespoke, designer-maker furniture in the UK. This outstanding event enables you to meet renowned craftsmen face to face and learn about the intricacies of their trade. The exhibition also includes selected works from leading artisans in disciplines such as sculpture, jewellery and silver that beautifully complement the furniture.

In this special 25th anniversary year, a new initiative will shine a light on the very best emerging designers as a number of furniture schools will be showcasing the work of their students, alongside a solid core of well-established and respected makers within the field. This combination of 'new' and 'old' is set to create an exciting and unique display. Exhibition Director Jason Heap has always been keen to offer opportunities to help the next generation to establish themselves and believes that: "The quality of training being offered today is exceptional and I am confident that visitors will be blown away by the standards at which these new designer-makers are already working."

The exhibition boasts a fantastic array of unique, diverse pieces and with styles ranging from simple and sleek to flourishing and fancy, there is plenty to suit all tastes. This year sees the inclusion of work by established makers Marc Fish, Matthew Burt, and Waywood as well as the last pieces completed by the late David Savage. Meanwhile, new exhibitors such as Jonathan Vaiksaar, Richard Frost and Hyde and Gallagher will certainly not disappoint. Stewards and a selection of exhibitors will be on hand to advise visitors each day, discuss the work exhibited and possible commissions.

Several fantastic awards return again to help promote and support all areas of the bespoke furniture movement, from students and new makers to British timber and design excellence. There are some stunning entries as usual and it will be fascinating to see who the judges select, the reasons for their decisions and, most importantly, whether you agree!

The magnificent neoclassical exhibition venue of Thirlestaine Long Gallery is set in the elegant surroundings of Cheltenham Spa and the Cotswolds, making a visit to Celebration of Craftsmanship & Design the perfect excuse for a few days away in this unique and picturesque area. For further details and tickets, see **www.celebrationofcraftsmanship.com**.

Peter Sefton Furniture School – 'Toro' hallway chairs in wych elm by Dave Taylor

DIARY – SEPTEMBER

3–6 Hand-dovetailed box
4* & **16** Intro to Leigh Jigs
5–6 Woodturning a German nutcracker
10–11 & **19–20*** Woodturning
12 Mastering the skew chisel
* Course held in Sittingbourne, Kent
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27 Kuksa carving
27 Sharpening day
28–29 Greenwood stool making
28–29 Spoon carving
30–6 Windsor chairmaking
30 Bowl carving
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6–8 Basic jointing weekend
16–20 Router skills
27–30 Beginners' four-day course
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9 & **10** Woodturning – make a small bowl
10–13 Woodturning bowls
13–15 Woodcarving for beginners
15–20 Furniture making – side table
20–22 Woodworking skills – table caddy
27–30 Starting out in woodturning
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28 & **29** Spoon carving
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RENOWNED DESIGNER JOINS THE CHIPPENDALE TEAM

Ben Dawson, the internationally-renowned furniture designer and maker, is joining the Chippendale International School of Furniture as Design Tutor. He will also have a secondary role supporting recent graduates who have set up in business in incubation space on the school's campus. "Ben's role with us won't be full-time as he is also moving his own furniture design and making business to the school," said Tom Fraser, Deputy Principal. "While his teaching duties will therefore be limited, he brings with him a wealth of expertise and experience to inspire our students," he said.

The Chippendale school in central Scotland runs one-week introductory courses, one-month intermediate courses and a nine-month professional course. This year, from an annual intake of 26 students, the school's professional students come from the UK, USA, Ireland, Germany, Canada, Poland, Australia and Iceland.

Ben's career as a furniture designer and maker spans five decades, working internationally for corporate, public, institutional and private clients. A graduate of Edinburgh College of Art, he won The Andrew Grant Postgraduate Scholarship and The Andrew Grant Travelling Scholarship. He was also awarded The Eileen Price Travel Scholarship by The Worshipful Company of Furniture Makers.

Ben is a Fellow of The Royal Society of Arts; Freeman of The City of London and Liveryman of The Worshipful Company of Furniture Makers. He's also been awarded a Design Guild Mark by The Worshipful Company of Furniture Makers for his 'Cirrus Collection'.

With accreditation as a Design Consultant to The World Bank, Ben has worked in former Soviet Union countries on reconstruction of secondary timber manufacturing.

Many leading architectural practices including Simon Laird, Norman Foster, Richard Rogers, Edward Cullinan, Zaha Hadid, and Enric Miralles/ Benedetta Tagliebuie have entrusted Ben with the design development and realisation of their project furniture.

Ben is particularly interested in the use of high technology for the artist-craftsperson, reflecting his lifelong belief in the potent combination of traditional Art School-based design and craft training with industrial processes.

Among stand-out projects he's completed are MSP's furniture in the Scottish Parliament Debating Chamber; Ministers' and Members' Furniture for the Kuwait National Assembly; and furniture for the Welsh Assembly. "We pride ourselves on being one of the world's leading furniture schools, and Ben gives us yet another teaching dimension," continued Tom Fraser.

To find out more about courses offered at the school, see **www.chippendaleschool.com**.

OSMO PROTECTS PREMIUM SHEPHERD HUTS

When Norfolk-based hut builder, The English Shepherds Hut Co, was looking for a product that would enhance the exterior of their bespoke huts, they turned to Osmo UK to provide them with a hard-wearing, weather-resistant, and aesthetically pleasing wood finish.

The English Shepherds Hut Co has manufactured shepherd huts for the past seven years. Originally designed to accommodate shepherds guarding their flock, the huts are now used in a range of residential and commercial settings including luxury accommodation. By combining tradition with comfort, The English Shepherds Hut Co create bespoke huts tailored to individual requirements. The made-to-order huts consist of cedar, larch or redwood cladding and can be built in a range of sizes. Once built, they are hand-finished by a team of skilled craftsmen in the company workshop in Norfolk.

Protection of exterior wood is of the upmost importance as the colour can fade after harmful UV rays damage the lining within the wood. With this in mind, the company applies Osmo UV-Protection-Oil Extra 420 to the huts. This finish delays the greying process by shielding the wood against harmful UV rays, algae and fungal decay. Additionally, it ensures a professional finish that will enhance and protect wood for many years to come. Osmo UK finishes are also used inside the huts on kitchen worktops and wooden shelves to complement the classic wooden interior.

The finish is absorbed into the wood, preventing it from drying or becoming brittle. It does not crack, flake, peel or blister and provides a clear satin finish. The water- and dirt-resistant oil reduces wood swelling or shrinkage, protecting the surface for many years to come.

The product is extremely easy to apply; two coats are needed for untreated timber whereas only one is required for surface renewal. It can be applied evenly by flat brush or roller and dries within 12 hours. Osmo UV-Protection-Oil provides hard-wearing protection against UV rays while improving the overall appearance of the exterior timber. For more information and to view the complete product range, visit **www.osmouk.com**.

NEW SJÖBERGS SB119 WORKBENCH

The SB119 bench, currently priced at £999.96, is the perfect foundation for any workshop. It is designed and built in Sweden by Sjöbergs, one of Europe's leading specialist bench manufacturers. Versatility combined with strength and quality makes a highly functional bench for a professional or a demanding home woodworker. Selected European beech used in the construction of the Sjöbergs SB119 bench ensures a long working life. Sjöbergs finish the bench with premium quality oil for protection. The SB119 is strong, heavy and offers a comfortable working height. If you are a serious woodworker, this sturdy bench will support any project you undertake.

The SB119 includes features generally only found on benches costing much more. The worktop is 1,805mm long × 600mm wide (overall including vices 1,908mm × 662mm). The top is 60mm thick with a 110mm apron. The double row of round dogs is usable from both vices and across the worktop. The vices are capable of providing enormous clamping power as well as accuracy and smoothness. The front vice has an opening capacity of 120mm; the tail vice opens to 175mm.

Each SB119 bench comes with a set of bench dogs, which also fit into the bench legs for horizontal support. Some self-assembly is required; instructions are included. You can also purchase the bench with the SM05 storage module (£1,399.96). Please note prices inc VAT; for more information, see **www.brimarc.com**.

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For more information on the Tormek Diamond Wheels, visit **www.tormek.com** or UK Importer BriMarc **www.brimarc.com/tormek**

THE CAPITAL OF CRAFT RETURNS TO CARDIFF

The organisers of Wales' largest contemporary craft event, Craft Festival Cardiff (formally known as Made By Hand Cardiff), have announced details of this year's event, which will take place from 1–3 November, where it will be returning to the historic and prestigious City Hall, Cardiff for the sixth year running.

Craft Festival Cardiff is part of a portfolio of events organised by the multi-award winning team at Craft Festival, Bovey Tracey and Craft Festival, Cheltenham. As Craft Festival Director, Sarah James, explains: "We live and breathe contemporary craft and create a Capital of Craft wherever we host our events. We hope our visitors in Cardiff will immerse themselves in handmade and enjoy meeting the makers."

This three-day festival will give you time to meet and buy from over 130 of the finest, award-winning makers from all over Wales and the UK. Meet jewellers, textile artists, potters, silversmiths, printmakers, sculptors, blacksmiths, furniture makers and glass blowers. Visitors are encouraged to enjoy a journey-of-discovery by attending workshops that explore a range of materials and techniques and witness inspiring demonstrations. Masterclasses will give visitors the chance to learn more about the stories behind the work on sale.

The event is for all ages and children and families are warmly welcomed. To find out more, see **www.craftfestival.co.uk**.

YANDLES AUTUMN WOODWORKING SHOW

This year, Yandles Autumn Woodworking Show will be held on 6 and 7 September. The event is now held once a year and is one of the country's longest running woodworking shows, taking place in the unique venue of a traditional working sawmill.

Visitors can expect to see trade stands from many of the UK's leading woodworking brands, including Record Power, Robert Sorby, Kreg, Charnwood and Chestnut, and new for this year are brands such as Laguna, Easy Wood Tools and Razertip.

Yandles will also be hosting one of their largest line-ups of demonstrators, which will include Woodturners such as Jay Hergett, Martin Saban-Smith, Colin Simpson and Liz Kent. Scrollsaw demonstrations, pyrography, routing, woodcarving and broom making are just some of the crafts that will be on display, and for the first time, Makers Corner will attract bloggers from around the world.

As always, the Yandles Show will have the largest selection of timber on sale to be found at any similar event anywhere in Europe. In fact, this year it is anticipated that Yandles will have in the region of £500,000 worth of timber available for customers to select, all with special show reductions.

With free entry and parking as well as a craft exhibition, hobbies shop and demonstrations, plus refreshment marquee and café, this event definitely offers a great day out for everyone and a chance to see the latest products available in the woodworking world, many with special show deals.

See the website – **www.yandles.co.uk** – for further details or call **01935 822 207**.

CABINET SPLIT ON BREXIT

Stephen Barr's 'Strong and Stable Brexit Cabinet'

It's a political debate that has been both electrifying and utterly tedious. Should the UK leave the EU with a deal, without a deal, or not leave at all? Now, a student at the Chippendale International School of Furniture in East Lothian has turned the debate into a talking point piece of furniture. Stephen Barr, originally from Northern Ireland but now living in Edinburgh, has crafted a two-door 'Strong and Stable Brexit Cabinet' in walnut and Japanese ash. It depicts the Union Jack on one door, and the EU's stars on the other.

There is also a deliberate gap between the outer walnut structure of the cabinet and its ash inner, representing the gaps between opinion on the vexed Brexit question. Stephen, who lives in Edinburgh as mentioned previously, intends to set up in business as a fine furniture designer in West Lothian after graduation next month.

Stephen's 'Strong and Stable Brexit Cabinet' was shown, alongside work from all the graduating students, at a public exhibition and sale of Work at Greyfriars Kirk in Edinburgh on Monday 10 June.

To find out more about the range of courses offered at the school, see **www.chippendaleschool.com**.

GLOFORCE LIGHTING

The Eye-Light is a 1,000 Lumen rechargeable LED floodlight with a choice of unique 27cm or 45cm magnetic goosenecks, which can position the light exactly where it's needed. Either as a standalone light, attached to metal surfaces, or even hooked over or wrapped around items or surfaces. If that's not convenient enough, then optional accessories include clamps, suction cups and magnetic feet to make this, what Classic Hand Tools believe, is the most convenient and versatile worklight on the market.

Using the most advanced LED chips, the Eye-Light outperforms most battery floodlights four times its size and weight. The light head only weighs 220g, has a diameter of 70mm, comes with a helpful LED battery indicator, and it even acts as a power bank that can charge your phone.

Key features

- Intensely bright 1,000 Lumen cordless floodlight
- Strong non-scratch rubber magnet
- 27cm and 45cm goosenecks to position the light exactly where it's needed
- 7 hours run time on medium beam and over 3.5 hours on full beam
- Can be positioned into areas other lights cannot
- Can be hung over shoulders as a hands-free worklight/floodlight
- Can be hooked over or wrapped around items and surfaces
- Can be used as a standalone light using the metal frame
- Light head can be detached, weighs only 220g and is pocketable
- Optional clamp, suction cup and MagFoot accessories
- IP65 and IK10 (weather- and shock-proof)
- USB power bank to charge phone and other mobile devices

Gloforce Eye-Light Plus

Gloforce Eye-Light Pro

Prices start from £49.99 for the Gloforce Eye-Light Plus and £79.99 for the Gloforce Eye-Light Pro; see **www.classichandtools.com**.

CLARKE CPDS1 PANEL DOLLY SET

The Clarke CPDS1 panel dolly set is ideal for woodworkers looking to move large, heavy panels (up to 250kg) such as plywood or plasterboard. This set benefits from high quality castors and heavy-duty powder platforms to allow for excellent mobility and robustness. Priced at £23.98 inc VAT, see the website – **www.machinemart.co.uk** – to find out more.

NEW BRUSHLESS CIRCULAR SAW FROM MAKITA

Makita UK has launched the new DRS780Z 18Vx2 185mm Brushless circular saw as part of its LXT range. The latest addition to Makita's extensive cordless machinery portfolio, it includes their Automatic Torque Drive Technology for optimum operation.

The DRS780Z 18Vx2 185mm Brushless circular saw LXT has been designed with ease of use in mind and the included Automatic Torque Drive Technology (ADT), unique to Makita, automatically adjusts the tool's cutting speed according to the load conditions. This ensures that the saw is always cutting at the correct speed and continues to work at its optimum level.

Driven by a Brushless motor, the DRS780Z also benefits from minimal maintenance. As the motor does not utilise carbon brushes, friction is reduced, which results in fewer issues due to wear and eliminates the cost of replacement brushes.

The DRS780Z has a maximum output of 1,700W and is powered by two 18V Lithium-ion batteries – totalling 36V, providing extended run times and less downtime, and massively improving on-site productivity. Makita's 18V batteries can also be interchanged across other Makita tools, providing continued on-site flexibility.

When using the saw, operators can benefit from a maximum cutting capacity of 65mm at 0°, 45mm at 45° and 38mm at 53°. With a vibration level of just 2.5m/s², users can safely operate the tool for longer, while the lightweight magnesium base allows them to do this in comfort without compromising the durability of the tool.

Matt Chilton, Product Manager – Tools at Makita, said: "This new Brushless circular saw offers a number of key benefits for operators. Firstly, the inclusion of Makita's ADT means that the saw can cut through materials effortlessly, improving ease of use and on-site productivity. Operators can also benefit from Soft Start – which prevents the tool from kicking when making initial contact with the material – as well as the rear handle design, which provides stability and increased control for those ripping through large sheets of timber."

The DRS780Z is a body-only machine; to find out more about this new product, visit **www.makitauk.com**.

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TREND MULTI-FUNCTION TABLE TOP WORKTOP ROUTING TEMPLATE MFT/JIG

MANUFACTURER: Trend
D&M GUIDE PRICE: £109.95 (inc VAT)

Multi-function tables offer a versatile way of securing workpieces for further work such as routing, sanding or re-sizing with saws. They are supplied with a multi-hole MDF insert that is designed as a sacrificial replacement part. These inserts can be costly to replace when purchased from the manufacturer, which is where the new Trend MFT/JIG hits the mark. It allows you to make your own inserts at a fraction of the cost. Its solid 12mm thick high-pressure laminate construction ensures repeatable accuracy for years to come.

Designed to replicate the commonly used grid pattern of 96mm centres, the Trend MFT Jig has a 10-hole layout. It is for use with plunge routers fitted with a 30mm guide bush and a 20mm diameter cutter.

Fast and easy to set up, the compact 298 × 586mm jig uses the pins to align it precisely to one corner of the board. Once clamped, the router is plunged through each hole to set the first grid layout. Subsequent holes are then made using the peg bushes to reset the jig for each additional row. This allows for the fast and accurate production of replacement insert tops.

The newly made grid top is perfect for use with track saws. Using the optional bench dogs, fast cuts at 90° and 45° angles help increase productivity. The 20mm holes are compatible with a wide range of commonly available clamping and positioning accessories.

Additional features include 100mm and 50mm radii and a 45° end-cut for easing corners on any edge. Also, the recess aperture can be used for routing a shallow recess to store smaller items while you work, such as drills and other accessories, or by routing completely through the material to create a convenient hand grip.

DEWALT 12V XR BRUSHLESS SUB-COMPACT TOOLS RANGE

MANUFACTURER: DeWalt
D&M GUIDE PRICE: From £154.95 (inc VAT)

DeWalt is launching a complete new 12V XR brushless range that offers some of the most compact, lightweight tools they have ever made with all the performance the end user needs to get the job done. What's more, the 12V XR tools and batteries are fully compatible with the existing DeWalt 10.8V range of tools, batteries and chargers.

The new range comprises the **DCD701 12V XR brushless sub-compact drill driver**; **DCF801 12V XR brushless sub-compact impact driver**; **DCF601 12V XR brushless sub-compact screwdriver** and the **DCF902 12V XR brushless 3in sub-compact impact wrench**. Each comes complete with 2 × 2.0Ah batteries, charger and TSTAK Case.

There is also a twin kit available (**DCK2110L2T**), comprising the DCD701 drill driver and the DCF801 impact driver with 2 × 3.0Ah batteries and charger, all supplied in a TSTAK Case.

MAKITA DTD170Z 18V CORDLESS IMPACT DRIVER

Featuring a brushless motor for energy efficiency and extended runtime, **Cameron Sidgwick** finds that this impact driver from Makita certainly packs a punch

The DTD170Z is the latest addition to Makita's impact driver collection. In my opinion, its effortless power, modern practical touches, and mobile size make it a top-of-the-range drill. Makita have been producing quality impact drivers for many years now, and this model doesn't fail to impress.

Small but powerful

Unboxing the DTD170Z, its compact size really struck me. It feels a lot smaller in your hand and the flat back feature is very useful. I was concerned that the power might not be as sufficient due to the reduced footprint, but with the 5Ah battery, this machine is certainly a workhorse. Benefitting from a brushless motor, it can do a serious amount of work before any damage to the battery is experienced. During a full day of driving in screws, for example, I only lost two bars of battery and the power did not deplete during use. The thin handle allows for great comfort in your hand and it is so light that your arm never gets tired. Having the flat back allows your thumb to rest on this area and means you can apply extra pressure when driving long screws into difficult positions. It also allows you to manoeuvre the driver into tight spots and achieve a solid fixing. The rubber handle is super comfortable, and the gun fits well in your hand with the trigger on your index finger: three below for support on the lower handle with your thumb firmly on the back or wrapped around the body.

Performance

In terms of performance, I feel the DTD170Z is right up there with its competitors. The speed of screwing and power of the machine is at a very professional level with not many other makes matching this standard. For jobs such as driving in long Timberlok screws, external brick screws or anything where the motor and battery are really put through their paces, this model drives the fixings in effortlessly. The charge time on the new batteries is super fast, maximising drill life to ensure you can always be on the go.

Impressive features

Makita have really incorporated some impressive features into this tool, starting with the speed change options, which come in very handy when chopping and changing jobs on site. The speed/force gauge helps you increase or decrease your drive, meaning you can wind screws deep into the material, or have them sitting flush to the surface. For example, with plaster boarding, impact drivers are typically always too powerful and sink the screws in too far, but this new feature makes it very easy to gauge the depth. The impact driver is backed by a powerful light that stays illuminated for a few extra seconds, which certainly helps in dark site situations, and doesn't seem to affect the battery life whatsoever. The hard shell on the front of the driver makes for a sturdy machine. Working on busy, full on job sites, these tools can take a heavy hit now and again, and this driver seems to have been built to withstand a fair bit of rough and tumble.

Other great features include a side holster, which makes carrying the driver around site all day really easy. It clips onto a Makita tool pouch

Side view of the DTD170Z...

... and from the back

Inserting a Tekscrew into oak

Impact driver clipped onto pouch


DTD170Z speed options range

Inserting a standard screw into MDF

and allows you to still fit a hammer alongside it. The quick-release bit holder is essential when switching bits for multiple tasks, and the lock-in system aids with gripping drill bits and ensures they never fall loose. Another addition that really impressed me is the brushless motor. When a drill comes into contact with a lot of dust, it can often break down, but the DTD170Z's brushless motor seemed to survive the dusty environments I was working in and still performed at a high level.

Conclusion

As competitors go, there are a few other brands bringing out similar products. Previously, I used a competitor's model, which was slightly cheaper, but in terms of performance, I have to admit that it doesn't match the Makita. Battery life wasn't as impressive and the price difference isn't too significant, either. Personally, I think it's worth spending extra in order to get a longer lasting and higher performing tool. In my experience, I've found that most impact drivers give up the ghost after the motor burns out, as they get filled with dust, eventually overheat and/or run out of

Worklight on, in freestanding mode

power, but with the brushless option, this feature becomes a lot more reliable. The Makita feels a lot smoother in use, making for a more comfortable machine, especially if used daily.

In conclusion, the DTD170Z has very few faults: it's powerful, durable and includes a variety of features that really make it stand out. Makita have produced a top-of-the-range tool with a perfect-sized body, which packs a huge amount of power. It's affordable, and fits perfectly into an existing Makita setup. I look forward to seeing what they come up with next and whether this power tool giant can top what is certainly a fierce impact driver.

The side holster makes carrying the driver around site all day really easy


Close-up showing the quick-release mechanism

SPECIFICATION

Machine screw: M4-M8
Standard bolt: M5-M16
High tensile bolt: M5-M14
Max fastening torque: 175Nm
Impacts per minute: Hi – 0-3,800ipm; Med – 0-2,600ipm; Lo – 0-1,100ipm
No load speed: Hi – 0-3,600rpm; Med – 0-2,100rpm; Lo – 0-1,100rpm
Overall dimensions: 117mm
Weight: 1.2kg
Voltage: 18V

Typical price: £349.99 – kit includes 2 × 5.0Ah batteries, charger and Makpac case
Web: www.makitauk.com

THE VERDICT

PROS

- Affordable; comfortable; powerful; excellent features; long lasting battery life

CONS

- No magnetic bit holder; difficult to compare to competitors

RATING: 4.5 out of **5**

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ARMOR TOOL CLAMPS

Wood Workers Workshop sent **Jonathan Salisbury** a collection of clamps and other useful items for review. Here he unpacks the box and takes a look at what's inside

Based in Worcestershire, Wood Workers Workshop is owned and managed by master craftsman and furniture designer-maker, Peter Sefton. Specialising in quality woodworking tools from North America his small, dedicated team of woodworkers offers advice based on personal experience. Since the tool shop is located at Peter's furniture school, there's even a workshop where you can try before you buy.

Wood Workers Workshop were keen for me to have a look at some of the different clamps they have in stock; in addition, they added some other surprises, all packaged up in a big lucky dip box. It's like Christmas all over again… I usually only have to cope with one at a time, but this has been an interesting experience and an opportunity to provide a few mini tests for you.

Armor Tool Auto-Adjust clamps & 14in dog-fence

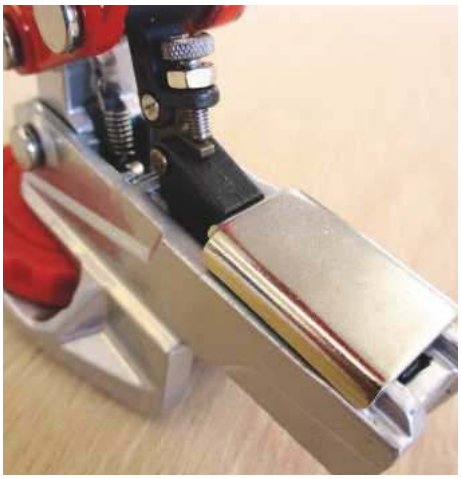
I reviewed some self-adjusting toggle clamps in January this year and the Armor Auto Adjust clamps are very similar in function; as the lever is pushed down and the foot meets the material, resisting forces move the sliding, sprung mechanism behind the lever backwards. This locks in place and the clamp then operates in the same way as a 'normal' toggle.

How they work

There are two 'hold down' clamps and one 'in-line' clamp in this review. The hold down clamps are of a familiar layout – a clamp head is fixed to a threaded bar, which can be adjusted up and down as well as closer to or further from the clamp lever. Unlike most toggle clamps which require a spanner, the nut on the Armor clamps is knurled and can be tightened by hand; it also has flats if a spanner is required. The lower nut is a plate with a threaded hole. Clamping pressure can be adjusted by turning a small screw behind the linkages and, once set, the same amount (more or less) is applied regardless of the thickness of material under the foot. The horizontal, in-line clamp uses a quick-release system that slides in and out to position the clamp head. This locks in place as soon as pressure is applied by the lever.

On the bench

While every clamp is much the same above the surface, what makes them different from each other is the way they are fixed to the bench. Most toggle clamps use a plate requiring screws, but these fit into a T-Track or ¾in holes, making them easier and quicker to reposition.



Detail of auto adjust mechanism

The clamp lever is common to all, but the base depends on the model

The knurled nut allows more rapid set up

In the box


Detail of the supplied T bolt…


… but it doesn't fit all tracks

ARMOR TOOL B5-HH AUTO-ADJUST HOLD DOWN T-TRACK CLAMP

The B5-HH works exceptionally well and would be a useful addition to any workshop using benches or machines fitted with standard tracks. Router tables, chop saws, belt sanders – almost all have T slots for slides and fences. It is useful to be able to add a stop or a guide, and sometimes the work needs holding firmly in place. G clamps (or similar) are often used, but toggle clamps are a neater solution.

The B5-HH slides into position along standard ¼in or 5/16in T-track. The red wheel is then turned to lock the clamp firmly to the table – there's no movement whatsoever. This is essential when attaching anything to a router table or saw, but you still need to check that there is sufficient friction between the table surface and whatever is being clamped.

Most extruded T-track fitted to work tables is a standard size that matches the B5-HH. You can also buy track separately for retro-fitting and for new furniture, but there are other sizes available and not all machines have the 'right' size, especially if they are older. The B5-HH as supplied didn't fit onto the bandsaw table in my workshop; it did on the disc sander, just. It is possible to change the bolt, or add a washer of a suitable diameter if there is sufficient space, but it's a shame that more are not provided in the box.

In use, firmly clamping a guide

SPECIFICATION

Clamping force: 25-150lb
Weight: 1.5lb
Fits: standard ¼in and 5/16in T-track
Typical price: £34.95
Web: www.woodworkersworkshop.co.uk

THE VERDICT

PROS

- Large lever makes it very easy to use; impressive clamping force to hold work and jigs in place; can be located anywhere along the track

CONS

- Only one size of T bolt supplied, which doesn't fit all T-tracks

RATING: 4 out of **5**

ARMOR TOOL P7-HH AUTO-ADJUST HORIZONTAL DOG CLAMP

For flexibility when clamping a variety of thicknesses to the bench, this clamp is hard to beat. I have used cast steel hold-fast bench clamps many times and always found them an invaluable aid to my work, ensuring that jigs don't move or that large pieces overhanging the edge of the bench don't tip. The P7-HH improves the concept by replacing the traditional screw tightening system with the quick-release toggle, speeding up the work no end.

The peg, made from aluminium alloy, is a generous length and screws onto the clamp top, so it can be replaced if necessary. Alternatives include a shorter 3in version and a 20mm diameter peg for when the hole is worn (or actually 20mm). The thread on the clamp has a blob of blue Loctite, or similar, on it to secure the peg, which made it impossible to do up fully by hand and of course this starts to come off when you change pegs.

Set up and release are swift and easy; sometimes the clamp needed a little repositioning to get it to hold tight, partly because of the over-sized hole. The photos show what happens when you test the ¾in peg in the 20mm hole, by the way – it still works, but it is a bit floppy!

In the box with a view of the peg


Detail of the clamp


Even large blocks can be firmly secured

SPECIFICATION

Clamping force: 25-400lb
Holding capacity: 550lb
Weight: 1.5lb
fits: ¾in peg pole
Typical price: £39.95
Web: www.woodworkersworkshop.co.uk

THE VERDICT

PROS

- A secure holding force is easy to apply; allows clamping of much bigger components and workpieces; quicker to operate than traditional screw-operated clamps

CONS

- Requires the correct size hole in the right place; worn or 20mm holes require the 20mm dog, sold separately

RATING: 4 out of **5**

ARMOR TOOL P7-IL AUTO-ADJUST IN-LINE DOG CLAMP

The P7-IL all packed up


Mounted and ready to go


All clamped up

I was particularly impressed with the P7-IL, so much so that I plan to get a few for my drill table and for routing and framing projects.

This clamp uses the same wheel tightening system as the B5-HH, but pulls on the bottom half of a wedged dog similar to those used on bicycle handlebar stems. A single peg that expands to fit securely in ¾in to 20mm holes, even if they are worn or over-sized. The horizontal clamp beam is a quick-release system similar to the plunger on a mastic gun. Push it up to the workpiece then press the clamp and all is locked securely; when the lever is released the clamp head pulls back enough to allow easy removal of the material. There is a 'V' groove for round stock and corners and although the beam looks a bit flimsy, and does flex a little on full stretch (in which case I would move the clamp in to another hole), the holding force is far greater than expected. When the dog is loosened the clamp can be rotated to adapt to changes in shape.


Being installed


Locking in place

SPECIFICATION

Clamping force: 25-400lb
Holding capacity: 700lb
Clamping thickness: 3.75in
Weight: 1.5lb
fits: ¾in and 20mm peg pole
Typical price: £36.95
Web: www.woodworkersworkshop.co.uk


Detail of the wedge

THE VERDICT

PROS

- A very secure horizontal holding force is easy to apply; clamp head retracts when the clamping force is released; long throw to deal with a variety of sizes of material; expands to fit ¾in to 20mm holes

CONS

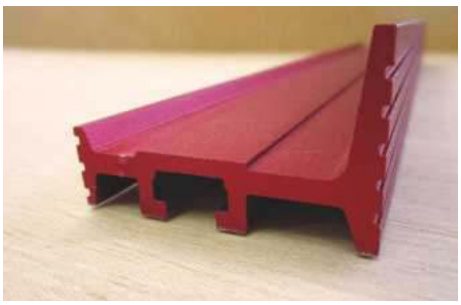
- Also requires a hole in the right place; longer pieces may require more than one clamp

RATING: 5 out of **5**

ARMOR TOOL PF-14 14IN DOG FENCE

The P7-IL provides a good-looking, robust alternative to wooden battens, and this was the last piece in the Armor Tool collection sent for testing. It provides a strong, securely attached stop against which one or more P7-IL clamps are used to secure work. The 'L' shape provides two edges for thin and thicker sections, allowing clearance when needed; its 14in length is plenty for most applications. The dogs have an elastomer coating, which make them more comfortable when being turned by hand to tighten them against the fence and provide grip to keep them securely located in ¾in holes. 20mm dogs are also available.

I can see the appeal of these fences; they certainly work well, complement the selection of clamps available and are more convenient in their method of attachment than my home-made alternatives. However, unless I really needed the extra strength of the aluminium alloy, I would probably put the money towards another clamp.


Detail of the fence track


The fence and dogs supplied


Peg mounted and ready for installing

SPECIFICATION

Features: high and low side for different height workpieces
Fits: ¾in peg poles (20mm available)
Material: anodised aluminium
Typical price: £22.95
Web: www.woodworkersworkshop.co.uk

THE VERDICT

PROS

- Strong fence for secure holding of work; T track allows position of dogs to be adjusted to suit the table

CONS

- Needs the optional 20mm pegs for worn or 20mm holes

RATING: 3.5 out of **5**

Conclusion

The toggle clamp system is a fabulous time saver over methods that use a screw thread, especially with the self-adjusting feature. It's a shame that the mountings, either T bolts or pegs, are not more interchangeable. And if your bench has 20mm holes you'll also need to add on the cost of the 20mm pegs. Nevertheless, all three clamps, and the fence, performed exceedingly well, as expected. I'd certainly be happy to have a rack full of any of these in my workshop.

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ACER PROFESSIONAL DEEP HOLE PENCIL & MARKER PEN SET

The perfect choice for professionals and DIY enthusiasts alike, this handy pencil and marker set represents fantastic value for money

It's always handy to have a marking implement close to hand and the Acer pen and pencil marker set with their clip holsters will ensure you're never going to be hunting around, as they can be clipped to a tool belt, pocket or pouch, always ready for action.

Pen & pencil

At around £20 for the set, they are definitely worth owning as they cannot only do the standard marking jobs expected of a pencil or marker pen, but the strong pencil lead and thin marker pen barrel design allows deep hole marking up to 145mm deep; this ensures you can mark through fittings or components to transfer positions for drilling or alignment.

The built-in sharpener keeps the leads nice and sharp

Yellow leads are great for marking on darker surfaces

The pen nib is double-ended to suit your needs...

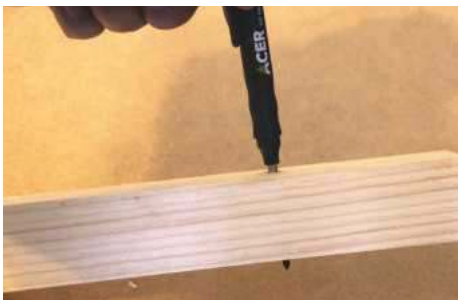
The pencil has a push button click advance similar to the ultra-fine draughtsman type for easy control and a built-in sharpener in the button keeps the lead sharp for finer marking and setting out. It's good to see that the lead is hard enough to stay sharp for this sort of work.

The pen has an identical design but this time the lead advance is replaced with a reversible tubular nib with a fine end for writing and finer marking or a thicker end for bold. It is easy to spot general marking up, with ink that writes on most surfaces including smooth, non-porous surfaces such as glass, ceramics, plastics and metals, so it's great for marking up tiles, pipework, laminated material and glass for cutting to size or shape with bold or fine lines.

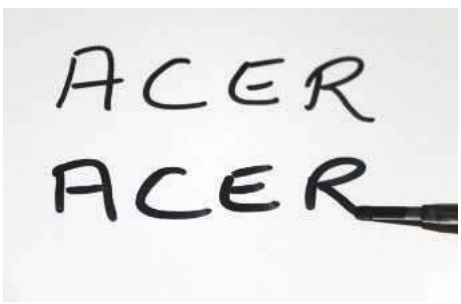
The reversible tip looks like it's leaking when reversed but the tip sits into the ink reservoir inside the body and picks up a small amount on the tube tip, so the only thing to worry about is perhaps transferring this onto your fingers, but this is a minor detail over its benefits.

Conclusion

Also included in the set are six spare leads, four graphite ones for general marking up on timber, drawing, writing and other general tasks, as well as two yellow leads, which are ideal for marking on darker materials such as hardwoods, worktops and masonry.



The long pen nib is ideal for marking through deep holes in timber



... and allows you to write in both thick and thin configurations

With the kit comprising essentially seven pencils with the spare leads, plus a thick and thin marker pen, the Acer set is incredible value and with a build quality that is made to last, they should do exactly that and do it with style.

SPECIFICATION

Acer APL1 replacement pencil leads

- 2B Graphite 120mm long replacement leads
- 4 × grey leads for general marking of timber, plastic, plasterboard & metal
- 2 × yellow leads for marking of tiles and darker surfaces

Acer AMP1 Double Tipped Marker Pen

- Unique design features a double-tipped nib that can be reversed to draw both thin and thick lines, especially useful when marking plans and materials such as plastics and pipes
- Ink reservoir in the top, which re-inks the tip every time you turn it around
- Removable protection cap
- Shirt/trouser clip

Acer ADP1 Deep Pencil Marker

- Can mark 100mm depth in a 3mm hole and so is ideal for site work
- Features unique 120mm long retractable, interchangeable leads, so pencil can mark through beams & joists with ease
- Long sturdy stainless steel shaft offers protection for the lead and allows marking through deep holes
- In-built removable sharpener for maximum precision
- Shirt/trouser clip
- Supplied in a small pocket size spring-loaded carry case

Typical price: £20
Web: www.acer-tools.com

THE VERDICT

PROS

- Great combination for all marking needs

CONS

- Ink transfers onto barrel when reversing

RATING: 4.5 out of **5**

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MISSION IMPOSSIBLE PART 1

In the first of a four-part series, **Shaun Newman** embarks on the making of a classical guitar with detachable neck, which is cleverly designed to fit into the overhead locker of an aircraft

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- **www.smallwonder-music.co.uk** – for inlay materials, purflings, etc.

2 The Staufer neck screw – 'Halsschraube'

Is it possible to make a full-sized concert classical guitar that will fit into a case capable of stowage in an overhead locker of an aircraft? Alternatively put: can you get a quart into a pint pot (**photo 1**)? Well, 'travel guitars' have been around for many years, notably instruments such as the Gibson and the Martin Backpacker, the Larrivee P-03, the Taylor BT2, the OF420 by Journey Instruments, and even the Yamaha 'Guitalele'. These guitars, however, would not always meet today's requirements laid down by most airlines for hand luggage that will fit into an overhead locker, the most common measurements for which are 55 × 40 × 20cm. Given that a full-sized concert classical guitar is normally around 1m long, and the smaller guitars mentioned above are not far off that, it does seem like an impossible task. Some manufactures claim their instruments, with a folding neck, will meet the measurement requirements, but on closer observation either the height of the case or the length will exceed most regulations, though some US internal airlines permit something a little larger than the average.

A further consideration is of course the quality of the sound. Other 'travel' guitars, apart from the ones with the folding neck, have simply reduced the size of the soundbox, and in most cases, shortened the string length considerably. This has a detrimental effect on the volume that the instrument can produce, as well as projection and breadth of the 'classical' timbre.

Some early thoughts

Before settling on a design, I was tempted to try out making a guitar with a folding neck, with the view to shortening both the string length by just a little and reducing the dimensions of the headstock where the tuners fit, while retaining as full a soundbox as possible. The folding neck is achieved through a clever internal hinge mechanism. I contacted the firm that made such guitars, but they refused to sell me a hinge, wanting to keep their 'trade secret' secret! Then, after much deliberation, I wondered if an instrument with a detachable neck could fit the bill, using a mechanism invented by the Austro-German luthier Johann Georg Staufer as far back as the late 1820s. The mechanism is simply a bolt, which passes through the heel block of the neck and into a threaded socket and nut in a second block inside the soundbox. Other makers at around the same time, notably Lacote, had also invented bolt-type mechanisms, but they were usually bulky and inelegant. Staufer's idea is simple and operated by a clock key with all of the mechanism hidden from view, bar a small entry point in the heel of the guitar.

Some time ago I had built a replica of a Staufer guitar, first made in 1830, and bought a mechanism, known as the 'Halsschraube' (neck screw) (**photo 2**). The customer, however, had decided against it during the build. His view was that the mechanism, which is essentially designed to enable the neck to be tilted to adjust the height of the strings over the frets (i.e. the action), might not be worth fiddling about with, and in any case, he never intended separating the neck from the soundbox at any stage, so the Halsschraube became temporarily redundant.

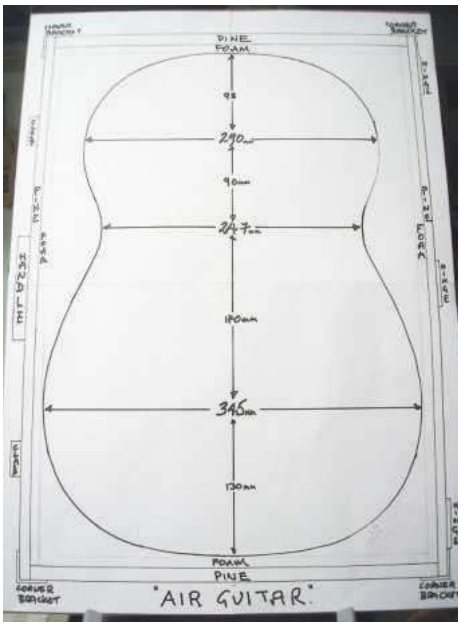
Inside-out thinking

Back to the construction of the 'air guitar'. From the outset, I felt that this instrument would stretch the ingenuity of any maker, and that I would need to work in ways to which I was thoroughly unaccustomed. I was dead right on both counts! The first task was to settle on body dimensions and string length. To get the fullest sound I decided to go for the standard Spanish classical string length of 650mm, and try to keep the upper and lower bouts (the width of the upper and lower parts of the body across the instrument) as near to standard as possible. I looked for my drawing of the 1963 Ramirez concert classical, which I have used time and again and began making up some plywood templates. It was only then that I realised I was on the wrong track. What I needed first was some sort of guide as to the external dimensions of the carrying case, so that I could work from the outside in, contrary to my customary way of working, which was the other away round. The breakthrough came when I realised that I should ditch my usual method of construction, which is to use an external mould and go with a workboard, a method not unique to this project and used by several makers.

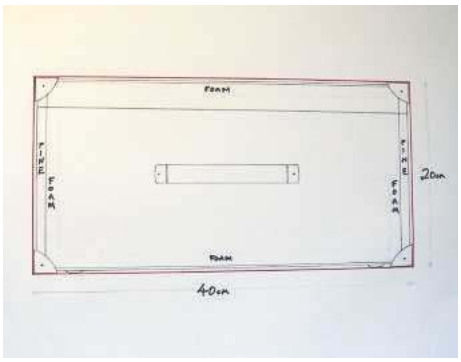
Outline drawings & the workboard

It seemed a good idea to first draw out the necessary dimensions so that I could see what I was dealing with. I began with a plan of the carrying case seen from above. I drew the outline of the maximum size of the case in red ink, which even had to account for the thickness of all external hardware, such as hinges, clasps, handles and the corner strengthening brackets. Some of these amounted to no more than 3mm each, but collectively had quite an impact on the internal space that would eventually be available. Then, working inwards, I drew in the thickness of the case sides, and the two ends, still remembering to allow for the external hardware. I thought the case sides could be around 1cm thick while the ends would be a bit stronger at 15mm. These lines were beginning to show me how much room I might have in the box. I decided to make the top and bottom of the box from 3.5mm ply, so also drew out a plan view of the case end. Next to come was allowance for padding. I had made several guitar cases before and found that

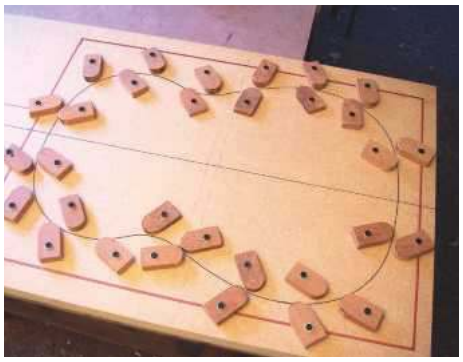
1 Will a quart fit into a pint pot?



3 Outline drawing of carrying case, seen from above



4 Drawing of the end of the carrying case



5 Cams screwed onto workboard to hold the ribs

1cm thick sheet foam rubber does a good job and is easy to cover with crushed velvet for a professional look. If 1cm thick foam is not easily available, I have in the past used a yoga mat, which worked well (**photos 3** & **4**). Next I bought a thick piece of MDF (25mm × 46cm × 85cm) and transferred the outline onto the board. This outline was drawn near the lower edge of the workboard.

So, I now knew what I was working with, and that was a space just 495 × 365 × 170mm. Finally, before the workboard could be put to use, I needed to find a way of holding the instrument in place during the construction process. In their excellent book *The Classical Guitar – Design and Construction*, first published in 1975 (see reading list), McLeod and Welford demonstrate a workboard in use and the key is to make a series of small hardwood cams, which are screwed to the board on either side of the outline of the soundbox on the guitar, working against each other. As the ribs are held flat to the workboard, alternate cams are pressed in towards the outline and screwed down tight. They grip the ribs (i.e. the sides of the guitar) firmly and prevent any movement during the various stages of the build. Each cam is around 40mm long, 25mm wide and 12mm thick with one end shaped on the disc sander to a semicircle (**photo 5**).

Preparing & fitting the ribs & tail block to the workboard

Once the outline has been drawn onto the workboard, the length of the ribs can be ascertained with a tailor's tape measure. I usually allow for around 25mm additional length at each end to permit a little leeway. The excess can be trimmed off after the ribs have been bent on the hot iron. In this case the ribs are each 580mm long, but initially cut to 620mm. On almost all classical guitars, the ribs taper slightly from the tail to the heel end. At the tail end, therefore, the depth is 94mm and at the heel, 89mm. The taper starts at the centre of the waist curve, i.e. around 290mm from the midpoint of the heel line.

Before being cut, the ribs must be reduced in thickness from the 5mm or so, as supplied, down to 2mm. This can be achieved with a drum sander, with a jig made to support a router with a rebate cutter fitted (**photo 6**), or by hand with a power sander and scraper plane (**photo 7**). By hand the job takes a while, but the result is usually better than the other methods. The router jig is easy to make provided the base is dead flat and the sides are parallel. The ribs are pinned down with spherical rare-earth magnets from above and flat ones inset into the base. Weights also help to stabilise the ribs while the cutter is in operation. The device removes stock quickly but can be difficult to control. People often ask me how just 2mm of thickness can be strong enough, and of course the strength comes from the curvature of the wood. Also, anything thicker can be very difficult to bend. One or two makers insist on 4mm thick ribs – for example, the very famous Daniel Friedrich – but these are normally laminated with each layer bent separately.

The ribs are then cut to the correct taper (**photo 8**) before being bent into shape. To bend the ribs, a hot bending iron is required (**photo 9**). These are relatively expensive, so if the intention is to build just one instrument, it's probably not worth it. Homemade bending irons are easy to make, and instructions can be found in several YouTube clips. These often involve a gas-fired blowtorch attached to a piece of iron piping. In his book, *The Guitar Maker's Workshop*, Rik Middleton shows how to make one using a hot air paint stripper attached to a length of steel piping. If you make your own, be sure to not set fire to your workshop; they can easily overheat, especially the gas-fired ones.

Bending the ribs can feel like a life shortening moment as there is always the sense that the 2mm thick rosewood could simply snap (**photo 10**). However, if the part being bent at any stage is kept wet, thus producing a steam cushion, and pressure is applied evenly and steadily with a rocking motion along the length of the rib, all should go well. It is important not to hold the rib against the hot iron without movement for more than a few seconds as it is very easy to scorch the timber, and some scorch marks can be very difficult to remove. If they are on the inside it is not too critical, but on the outside

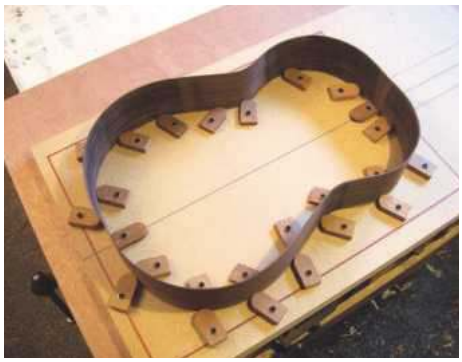
6 A homemade rib thicknessing jig

7 A scraper plane can be used to thin the ribs

8 The correct taper is cut into ribs

9 A commercially available bending iron

10 Bending the ribs can feel life shortening



11 The ribs are cut to length and attached to the workboard

12 The heel and tail blocks dry fitted

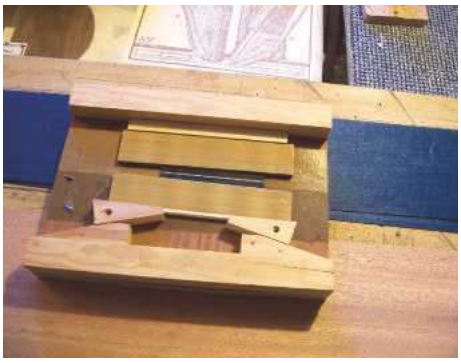
the appearance of the finished guitar can be seriously compromised. There is a good tutorial on bending ribs in Cumpiano and Natelson's book *Guitar Making – Tradition and Technology* (see reading list).

The heel & tail blocks

Once bent and held in place by the cams, the true length can be cut at the ends of each rib and preparations made to create a heel and tail block (**photo 11**). These blocks add strength to either end and, in the case of the heel, provides the point at which the Halsschraube socket and nut can be located. Both blocks are made from mahogany. The tail block measures around 106 × 70 × 16mm and has a gentle curve on one face to match the curve in the bottom of the guitar. The heel block is more robust and measures 91 × 75 × 35mm and can be kept flat, although Staufer used to curve the face that connected to the neck of the instrument. Each block should be exactly as long as the width of the rib where contact is made. A centreline should be drawn around the length of each block to ensure they sit accurately on the inside of the ribs, and exactly on the centreline of the workboard (**photo 12**).

Before the ribs and the blocks are put back onto the workboard and held by the cams, an inlay can be inserted onto the outside of the tail. This is to cover the join between the ends of the two ribs, and also offers the opportunity for some personalised decoration. Many makers choose to make very ornate inlays at this point; this one is a simple wedge shape made up from scraps of ebony and purflings that will match the eventual colour choices of the headstock veneer and bridge later in the build.

The inlay itself is made by first tapering a strip of 12 × 120 × 2mm ebony and gluing strips of white/black/white purflings (see suppliers list) along each edge. To keep the whole inlay flat and in place while the Titebond cures, a simple jig can be made from a flat piece of MDF and some lengths of pine 15 ×15 and 160mm long with wedges to push everything tightly together. It is really important to line the jig with parcel tape where the glue joins make contact with the base, otherwise everything gets glued together and you have to start again (**photo 13**). The housing for the inlay is first cut out with a fine dovetail saw (**photo 14**) and finished off with a sharp 6mm paring chisel (**photo 15**).



13 The tail block inlay jig

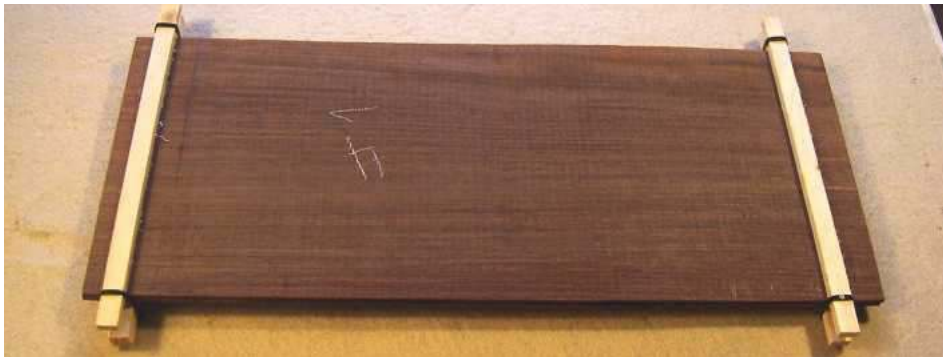
The back

At this point of the build I would normally make up the neck and head and proceed to fit it to the ribs. Because the Halsschraube mechanism needs a socket in the heel block, however, and the heel itself needs very accurate drilling, it is now time to fit the back to give the ribs some stability and to be in a position to line up the neck and heel correctly when it has been made.

The rosewood for the back is supplied in two 'book-matched' sheets cut from the same log, measuring 560mm long × 240mm wide × 5mm thick (**photo 16**). The book-matching is to ensure a symmetrical pattern when the two boards are joined. To create a perfect join, the inner edges of the boards must be trued to exact right angles with absolutely straight edges. At this stage it is possible to put a decorative inlay along the centre join, but whether or not this option is chosen, the edges must still be dead right. I normally use my 50-year-old Record No.5½ plane to begin truing the edges (**photo 17**), but to ensure the edges are

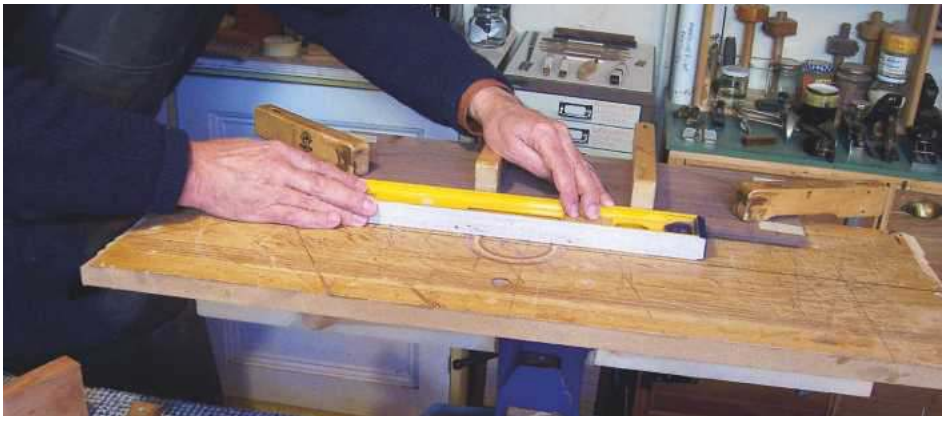
14 Sawing the tail inlay housing

15 Chiselling the inlay housing



16 Book-matched back in rosewood as supplied

17 My old 5½ plane is used to true the back join



18 Spirit level sanding tool accurately neatens the back join

19 The wedge and lace jig for joining backs and soundboards

exactly at right angles to each other, I run a 90° sanding tool against them. This tool is a builder's spirit level fitted with 80 grit abrasive along each edge (**photo 18**).

Once the join is determined to be perfect, which is established by holding the two edges together with a bright light behind to check for gaps, it is joined using a very old-fashioned device – the 'wedge and lace' jig. I have used this jig hundreds of times and it has never failed to give a perfect join. It is made from a length of floor joist and roofing 'scantling'. The joist is 600mm long, 134mm deep and 45mm thick, while the scantling is what traditionally has been termed 'two-be-one', with each strut being 510mm long. Lengths of thick nylon cord are attached to one end of each piece of scantling, which in turn has been housed at the halfway point into the joist. At the opposite end of the scantling a groove is cut to trap the end of the lace after it has been pulled tight. Each lace is around 3m long (**photo 19**). When the two halves of the back have been laced into the jig, long wedges are driven under the lacing and these push the two halves downwards while also pulling them tightly in towards each other. A clever bit of kit (**photo 20**).

The inlay that I chose was a simple strip of black/white/black purfling, which can be made by laminating veneer strips or are alternatively commercially available.

Once the adhesive has cured and the back is removed from the jig, it is time to bring it down to the correct thickness. Luthiers often dispute the correct thickness of the back, some saying a thicker one (i.e. around 3-4mm) will help to project the sound better, while others favour a thinner one to create a lighter and more responsive instrument. I normally settle on 2mm. This can be done by hand with an extremely sharp plane and finished with a scraper plane (**photo 21**). Some makers just use sanding machines,

20 The back in the wedge and lace jig with centre inlay

21 Thinning the back with a scraper plane

22 Back centre cross-banding strip in place

23 A shoulder plane cuts initial curve on the braces

24 A sanding stick completes the job

but whichever method is used, the back will be extremely fragile when it is finished and requires a cross-banded centre strip on the inside to protect the join. This strip is made from spruce and is normally between 12-15mm wide and no more than 2mm thick. The edges are feathered down towards the inside surface of the back (**photo 22**).

With the centre strip in place the back is more robust and can be prepared for bracing. Three or four braces may be used, each 12mm high, and 6mm wide. They are usually made from mahogany, but cedar or spruce are alternatives. Each brace is slightly curved to help produce a dish-like profile onto the back when it is put into place. This curve helps with the appearance, but most importantly acts as a sort of amplifier driving the sound out of the instrument. I usually begin the curve with a shoulder plane and finish all of the braces at the same time on a curved sanding stick (**photos 23** & **24**). This is made from a length of hardwood 145mm long, 40mm deep and 20mm thick and has a curve cut on the bandsaw. The amount of curve that I use is at a ratio of 3:145, which means that at the centre point of the back there will be a 3mm 'lift'. As the edges may be a little uneven when the hardwood strip is taken from the bandsaw, a length of thin plywood can be glued along the inside edge and this evens out any discrepancies. The plywood is cut to around 50mm in width (**photo 25**).

25 The curved sanding stick, which creates a 3mm 'lift'

26 Housing slots are cut in the centre strip for the back braces

The brace bars must be fitted through housings in the centre strip and should be at right angles to the centre join (**photo 26**). If a right angle is not achieved, the bars look odd and out of line when seen through the sound hole. After they have been curved the bars are clamped into position (**photo 27**), eventually gabled (**photo 28**) and the ends scalloped (**photo 29**). This is to reduce weight and to allow for a smooth airflow inside the instrument. The ends of the scalloping are just 3mm deep and will be housed into the top edge of the ribs to ensure they do not pop off over time. The housing will at first be visible from the outside but will eventually be covered by the bindings, which run around the edges of the instrument for protection (**photo 30**).

27 Clamping the back braces into place

28 Gabling the back braces

29 Scalloping the ends of the braces

30 Small housings are cut into the ribs for the back braces

NEXT MONTH

In part 2 of this project, Shaun describes how the back of the guitar is fitted and bindings and purflings put into place

READING LIST

- *The Guitar Maker's Workshop* – Rik Middleton – ISBN 1-86126-040-7
- *The Classical Guitar, Design and Construction* – Donald McLeod and Robert Welford – ISBN 0852190778
- *Guitar Making Tradition and Technology* – William Cumpiano and Jonathan Natelson – ISBN 0811806405
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- *Making Master Guitars* – Roy Courtnall – ISBN 0709048092
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FEATURES

- Keeps hands away from saw blades
- Ergonomic injection moulded design
- Wishbone shape with gripping, rubber feet

To find out more, see **www.woodworkersworkshop.co.uk**

HOW TO ENTER

To be in with a chance of winning 1 of 5 FastCap 10 Million Dollar Sticks, just visit **www.getwoodworking.com/competitions** and answer this simple question:

QUESTION: What shape is the FastCap 10 Million Dollar Stick?

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WORLD WOOD DAY 2019

THE STOCKMÜHLE RECONSTRUCTION

Taking place at the Austrian Open-Air Museum Stübing, **Mark Griffiths**, along with a group of carpenters, set about building a Stockmühle watermill to celebrate World Wood Day 2019

Timber delivery by horse

Synchronised axe work

Among the many woodworkers attending last year's World Wood Day in Cambodia, one small group stood out. Rarely seen at any of the festival events, they looked both exhausted and wired. I soon discovered that this close-knit group were the international team, brought together to complete, in just one week, a collaborative project celebrating this event. Little did I know that the following year I would be chosen by The International Wood Culture Society to collaborate on the festival's most ambitious project to date.

The finishing broad axe in action

Sporting riot police leg shields

A test of skill & stamina

It was the turn of Austria's beautiful city of Gratz to host this year's World Wood Day. Located a few miles from the city, the Stübing Open-Air Museum proved a perfect location for a festival of all things wood. Over the past 30 years, historic wooden buildings have been painstakingly deconstructed beam by beam, and then lovingly re-built in the museum's tree-lined valley. Visitors can wander through the many varied structures, reflecting on past lives lived in times more connected to the land and its nature.

Due to the scale of this year's project, our team arrived a week before the rest of the participants. We would be building, with traditional tools, a Stockmühle. Based on examples dating back 300 years, our mill would feature a horizontal waterwheel. This design relies on a wooden

viaduct channelling the water from fast flowing mountain streams onto the mill's inverted paddles. All parts of the building would be constructed using axe-hewn timbers. With a smaller team than originally hoped for, just four international woodworkers and five members from the museum, we knew the next two weeks would be a test of both skill and stamina.

Hewing & axing

On our first day we were given a guided tour with the museum pointing out various architectural details that related to our mill. Our tour ended at a patch of ground beside a small stream, the site of the new Stockmühle. The carpenters from the museum had started work a few days prior to our arrival and had already laid the stonework slab, on which the

Working on the logs

Teamwork makes the dream work!


Log with squared sides


Hewn logs ready for assembly


Turning a new mill shaft


Fixing the heated metal straps

mill would be sited, and made a start on the walls. After brief introductions, we rolled our sleeves up and made a start.

For the first few days our main task was to hew the spruce logs needed to build up the walls. Working in teams of two, we loaded each log onto strong wooden trestles, then held them in place with large spiked dogs. A horizontal centreline was scribed on both ends of the log, using a spirit level to keep it true. Out from each side of this centre two more lines were marked at 75mm, giving a total width of 150mm. The bark above these side markings was then removed with a drawknife. On to the freshly exposed white timber a chalk line was struck connecting one set of pencilled side lines with those marked on the log's opposite end. Working up to the chalk line, the team of two chopped 'V' slots into the side of the log at intervals of 300mm. These slots acted as a depth guide as the log's side was hewn flat.

The Austrian carpenters used an East European style finishing broad axe for this work. With its skewed, heavy, wide blade and stumpy handle, it definitely took some time to master. I preferred to stick with my Gransfors 1900 broad axe as I felt it afforded me more control. Even so, I still sensibly decked myself out in a pair of ex-Austrian riot police leg shields for protection.

Completed watermill

And so, our days were spent either preparing timber sections, or hauling the finished lengths up onto the top of the mill and cutting, in situ, the double halving joints that locked the walls together. The style and techniques employed


Fitting paddles to the mill shaft


Cutting a halving joint


Traditional tools

Drilling peg holes for locating the next beam

Building up the walls

Fitting shingles to the roof

in constructing these traditional buildings mirrored ones I had seen travelling around America, the skills having emigrated to the New World with the Northern European settlers.

The wonderful peace and quiet we had enjoyed during our fortnight at the Open-Air Museum soon came to an end as 500 woodworkers and over 1,000 members of the public arrived to celebrate World Wood Day. And one of the many attractions, in this incredible festival of woodwork and woodworking skills, was a newly completed Stockmühle watermill. The team, now bonded in that unique friendship borne of shared hard work, watched with pride as water rushed through the viaduct and hit the larch paddles of the vast turned shaft sending it spinning, and in turn rotating the heavy stone grinding wheels, housed above, for the first time.

The mill in action

Topping off ceremony

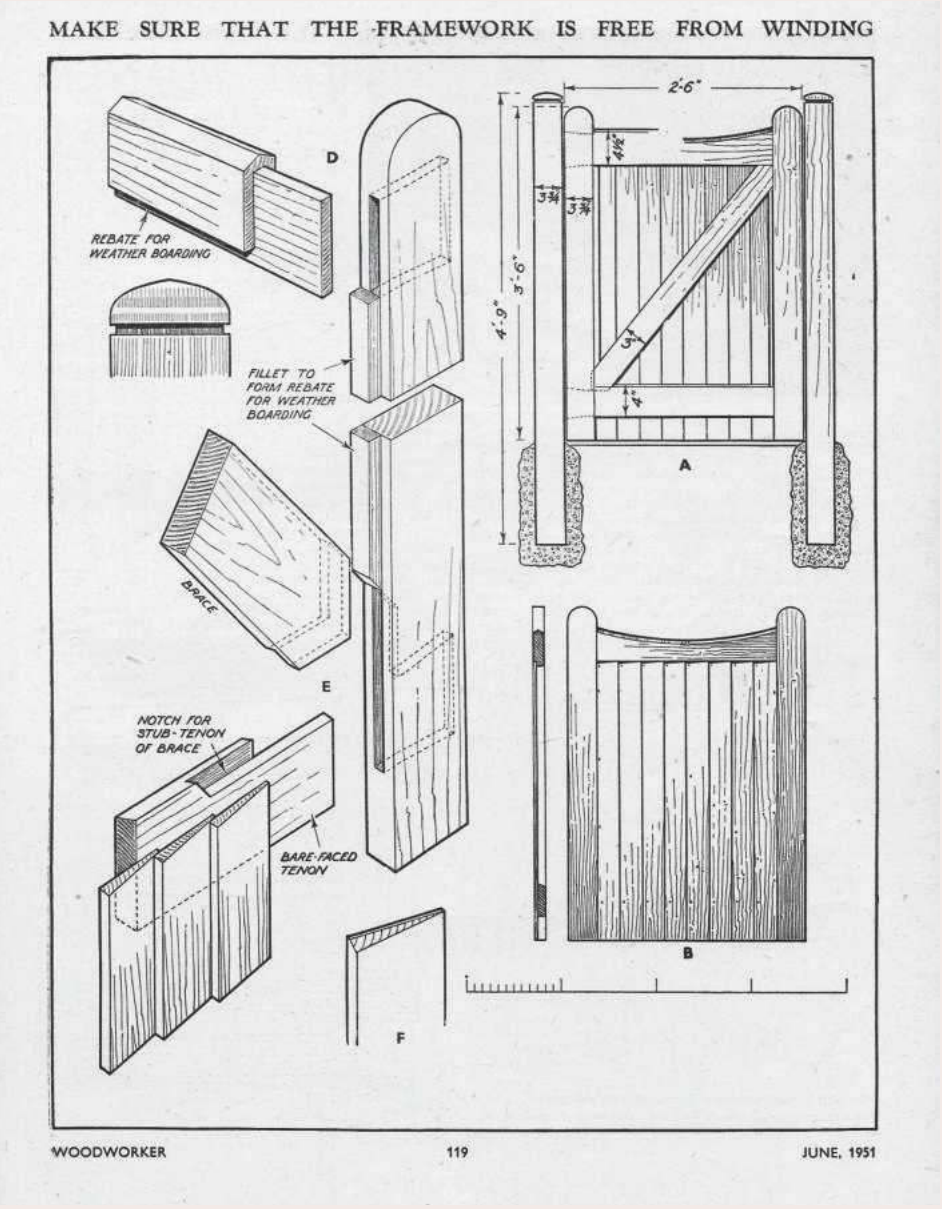
FURTHER INFORMATION

World Wood Day – **www.worldwoodday.org**
Austrian Open-Air Museum Stübing – **www.schladming-dachstein.at**

The finished mill

Garden gate

Robin Gates presents an open and shut case for a new garden gate, with a little help from the June 1951 issue of *The Woodworker*



A delightful inscription precedes the 244 pages of vintage woodwork in my 1951 bound volume of *The Woodworker*. 'To Joe, Wishing you many happy returns of the day, from Mary, 27 January 1952.' It was a perfect gift in the short cold days of the new year, I'm sure, filled with things to think about in the months ahead.

I imagine Joe with feet up by a crackling winter fire, mug of cocoa to hand, flicking through the pages, lingering wistfully over adverts for 'Norris Steel Planes' and gleaming 'Spearior' saws. And Mary, piping up while Joe's gratitude still shines: "When are you going to do something about our garden gate? The wood's so rotten, it's only the fungi holding it together."

Truth be told, Mary's voice is my uneasy conscience speaking, stirred by the postman's muttering as our own gate first refuses to open and then drags its drooping timbers across the path. I'm sure Joe would've been onto such a mundane problem with screws, glue and paintbrush long ago, while maintenance was still an option. Now, there's no alternative but to replace it, and that's why I'm poring over the details of this article from June 1951, unambiguously titled 'Garden Gate'.

Tenons & shoulders

"A walk round any suburban district shows many of the garden gates to be in a bad condition," the article begins, and suddenly I don't feel so alone, if no less guilty for my lackadaisical ways. "The essence of success lies in nicely fitting tenons and square, tight shoulders," it continues. Try square, mortise gauge, chisels and mallet; the author doesn't mention these, but I think we'll be needing them.

First, the timber. This is a working item to be used repeatedly through the day, day in, day out in all seasons of the year, and in our increasingly extreme climate the recommendation for sound timber, free of twist, rings truer than ever. It's stability and durability we're after, and although English oak is suggested, I'd be tempted by a decent piece of hard, resinous softwood like pitch pine if it were available. I've found early 20th century windows and doors in this timber as solid as the day they were fitted. Otherwise larch, at least for the weather boarding. They're both reliable boat building woods, and what works in water will doubtless work for a garden gate.

Besides taper-cut weather board, the other parts required are two stiles, top and bottom rails, the diagonal brace, fillets to make a rebate on the stiles for the weather board, and two posts. In my situation, with the gate opening to a paved public path, I'd be fitting the posts to existing garden walls rather than setting them in concrete.

The annotated illustration barely requires description from me, but I'll mention a detail or two. Note the flared mortises in the stiles, designed to accommodate wedged tenons, with wedges to be glued on backs and sides but not on faces so as to allow tenons to adjust to climatic conditions. See also how the stub tenons of the brace are housed, and that the bottom end of the brace points to the hanging stile so as to bear the weight and thrust. Bevelled edges to the rails prevent water pooling, and there's a lovely concave in the top rail, too.

Strap hinges

Almost as an aside, the author mentions "a pair of Collinge type hinges" and I had to look these up. They're sturdy cast-iron strap hinges to a design dating from the early 19th century, reminiscent of old coach house doors. Originally made in Lambeth, today they're made in Hereford, by pouring molten iron into sand moulds. It's good to know they still make some things the way they used to!

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THE ALAN PETERS FURNITURE AWARD 2020

Don't miss out on the opportunity to be part of this prestigious annual award, which champions UK furniture designing and making talent while celebrating the life and work of the late **Alan Peters OBE**

Alan Peters' 'Fan table'

This newly evolved annual award celebrates the legacy of one of Britain's most prominent furniture designer-makers of the late 20th century – Alan Peters OBE – while aiming to encourage emerging talent in the craft of furniture design and making.

Any woodworker who is a resident UK citizen over the age of 18, and who has a passion and talent for designing and making contemporary furniture, is invited to submit up to two items of furniture that echo the philosophy of Alan Peters. Judging is based on the appropriate use of wood, the quality of workmanship, functionality and originality of design. Both one-off designs and potential batch-produced designs are encouraged.

Applicants should be familiar with the work of Alan Peters prior to applying and are encouraged to read Jeremy Broun's 64-page video-integrated online e-book, which is offered free-of-charge (via the website link opposite).

The man behind the award

Alan Peters OBE (1933–2009) was one of Britain's most prominent furniture designer-makers of the latter part of the 20th century. He was apprenticed to Edward Barnsley and had a direct link to the English Arts and Crafts Movement. He was hugely influential internationally in his practice, teaching and publications. Above all, his respect and understanding of how wood behaves and the value of hand skill, yet moving tradition forward, resulted in the creation of many timeless pieces. He created affordable functional furniture, which was made to last, making an art of his craft in some of his subtle innovations.

History of the award

The original award was called 'The Alan Peters Award For Excellence' and was initiated by Jason Heap in 2010. The prize was offered to three winners, each of whom were given free exhibition space alongside the professionals at his annual furniture exhibition in Cheltenham. The award ran for eight years, and some of the past winning pieces are shown here. The judges were Jason Heap, Keith Newton and Jeremy Broun.

Anais Dancet's '10 Degrees' stackable stool – a 2012 winner of The Alan Peters Award For Excellence

Award judges

Jeremy Broun (organiser) – designer-maker and co-exhibitor with Alan Peters 1978–2002;
Andrew Lawton – designer-maker who worked with Alan Peters and on his last commission;
Keith Newton – early apprentice and employee of Alan Peters for 21 years.

Chris Wiseman's 'Oak Within' sideboard' – 2016 winner of The Alan Peters Award For Excellence

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Award deadline is **30 May 2020**. Entries can be submitted any time up to this date. A £20 entry fee applies and a maximum of two entries can be made (£20 per entry).

The judging ceremony will be held at Axminster's Nuneaton store on 29 June 2020, and an exhibition at the store will run from 1–13 July 2020.

Following this, the pieces will then be exhibited at The Wilson Gallery – dates to be confirmed.

To download an application form and the 64-page e-book, please visit **www.woodomain.com/alanpetersaward**. The form can be found at the right of the page. Payment for entry can also be made securely via the website.

For further information, please contact either Group Editor, Tegan Foley (**tegan.foley@mytimemedia.com**), Organiser, Jeremy Broun (**jb@woodomain.com**)

Alan Peters chest with silver inlay

Alan Peters and Jeremy Broun in 2005

Alan Peters chest

Photograph courtesy of American Woodworking Supplies and Custom Hardwoods – **www.americanwoodworkingsupply.com**

WOODWORKER'S ENCYCLOPAEDIA A-Z PART 7

In the next part of this series, **Peter Bishop** continues to look at everyday terms and phrases used within and about the timber and associated industries

In part 7, we cover excessive claims, through explosive stuff, and on to chasing things around and about. There must be more to working with wood than you can imagine!

Carpenter's boast

Not a boastful carpenter telling you how good he is, but a specific type of joint used in roof structures. The collar-tie is the horizontal length of timber that binds two opposing rafters together to stop them splaying out or bowing. The collar-tie, traditionally, was jointed to the rafters with a half dovetail housing joint called the carpenter's boast. This prevented slippage and the dovetail naturally tightened as downward pressure was exerted.

Carpentry

When working with wood, people often get confused when describing what they do or what they are looking for. Carpentry is simply the structural part of woodwork in buildings, engineering woodwork, and any associated preparation of materials for these items.

Collar-tie roof truss joint

Timber frame joint – detail

Carpentry joints

Carpentry joints can be described simply as constructional ones where some strength is required to achieve any of the structures previously described. These are 'big' joints, not those used in furniture, even though they are basically the same. Think of oak-framed buildings and the way in which these are jointed together. Apart from mortise & tenon, dovetail and halving joints, for example, they'll include bird's mouth, cogged, fish plate, saddle, scarfed etc., etc.

Carroty

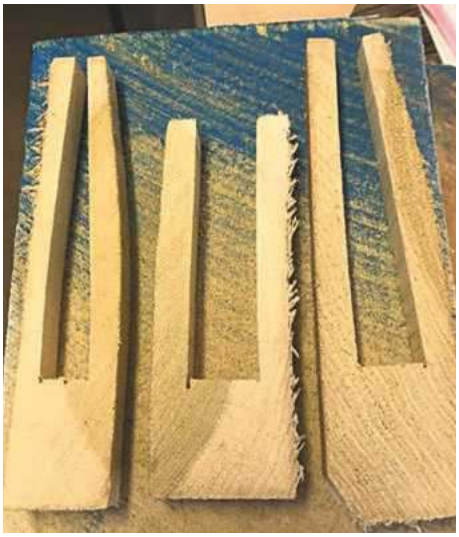
A general term that can be applied to wood that is short-grained or pithy.

Cascamite powdered resin wood glue

Cascamite

One of the best known powdered resin adhesives on the market, Cascamite has been used extensively for some time. Once mixed with cold water, to a thick cream-like consistency, it will set hard and rigid once applied and left to cure. This is one of the glues that does not 'creep' or move under pressure.

Timber frame extension



These test pieces show varying degrees of case hardening

Wood drying

Case hardening

Case hardening is a drying defect in timber. It's created when the outer layer of, say, a plank, has been dried quicker than the core, thus making a harder outside case or shell. Effectively the outside has shrunk more than the middle and this sets up tensions within the wood structure. These tensions can lead to distortion when larger pieces are cut down into smaller pieces. It can be fixed, however. The outer cellular layers need to have their moisture content increased to relieve the tension. A longer drying cycle then needs to be introduced that will help remove the core moisture but equalise the spread of moisture throughout the whole of the affected plank or planks. A quick test for case hardening is to cut a cross-sectional piece from a suspect plank then remove the middle from one edge leaving two long fingers attached to the remaining edge. If the ends of the two 'fingers' curl inwards, towards the middle, the piece is case hardened. Resawing case hardened material into smaller pieces can be difficult. Because of the tensions it will tend to bind on the saw blade as it distorts and this will probably create saw burn on the cut faces without taking into account the waste through bowing or twisting, etc.

Traditional casement window
Photograph courtesy of **Honiton Joinery**

Casement window

A window that has an opening casement, be it hinged or pivoted, is called a casement window.

Casings

Casings are another phrase used to describe window or door linings. These are the outer framework into which the window or door will fit. The phrase can also be applied to the side boxes of sash windows in which the weights are housed.

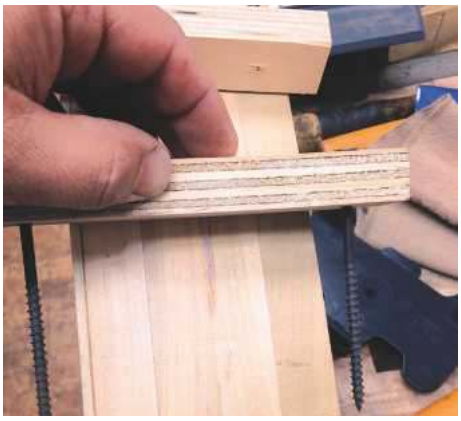
Cast

A plank of wood might have a cast in it, which means it could be twisted or bowed.

Round pivot window
Photograph courtesy of **Marvin Windows**

Catherine wheel window

Another name for a round window but one that has radiating bars like the spokes of a wheel.



Using a veneering caul

Caul

The caul is used in veneering. It's the appliance that holds the veneer in place and exerts pressure, and sometimes heat, while gluing that veneer onto its base substructure. A caul is usually fixed under pressure and then left holding the veneer in place until the adhesive has set.

A set of three caulking irons

Caulking a wooden deck

Caulking or to caulk

Caulking is basically filling gaps. Most of us will have a caulking gun into which, for example, we might fit a tube of caulk. This we can then apply to cracks in plaster to fill them. Traditionally caulking a wooden deck or the sides of a boat would involve tar-soaked string or rope being forced into the gaps between boards to make them watertight. A special steel caulking tool was used to force the cord into the gaps. Modern methods have superseded this in many ways. Using a gun and a tube of black mastic, the job is done much quicker, but is it any better one wonders?

Cellulose

Within the structure of wood, and other plants, cellulose is the main chemical that makes up its cells. It's an organic polymer and very strong. This strength is used to maintain the integrity of the cells helping them to remain sound when they take on water. Cellulose extracts are used to make a range of products including lacquers, clothing and explosives, for example.

Centre matched

Very similar to 'book' matching veneers. In this case, the veneers are laid in sequence so that the adjoining edges are matched.

Chain mortiser

Centauro CVS60 door lock and hinge mortiser from Scott+Sargeant UK

Mafell LS 103Ec chain mortiser – a portable alternative

These are the heavy-duty work horses of the timber manufacturing industry. They come in a range of sizes but have one thing in common: they can remove waste in bulk and quickly cut mortise holes. Because they are good wood gobblers, care must be taken when using them; if not, you'll quickly make a mess of your work. Originally found as fixed-base machines in production workshops, there are mobile versions available now. These tend to be used in oak frame construction, in and out of the factory, where it is much easier to take the portable machine to the wood than lug the great lumps to a machine. All chain mortisers are based on chainsaws, or vice versa, but with a bit more sophistication!

Chair rail

To prevent plastered walls from being damaged by the backs of chairs, if they were pushed or tilted against them, the Victorians fitted protecting rails. These are the chair, or dado rails, that are now sometimes employed as a decorative feature in a room.

Making a chalk line

Chalk line

If you haven't got a long straightedge or laser, this is an alternative marking solution. Using a chalk line will also avoid marking a surface with pencil or scribe, etc. A chalk-coated line is stretched between two points. It must be tight. Taking a firm grip on the centre of the string it is lifted, as close to vertical as possible, and allowed to snap back down onto the surface to be marked. The result should be a chalked, straight line, between the two fixed points.

Stacked maple plywood worktop with chamfered edge

Chamfer

When you remove more than the arris, the sharp edge of a corner, this will be a chamfer. Usually set at 45°, the face of the chamfer can vary in size and length. They are often 'stopped' each side of a joint. A chamfer makes a plain edge more interesting and, if stopped or straight through, becomes a decorative feature.

Stanley No.72 chamfer plane

Gunmetal chariot plane

Chamfer plane

There are a number of specialist hand chamfer planes available that are designed specifically to produce this feature. They come in a range of sizes and are ideal for creating a quick, through chamfer on an edge.

Chariot plane

Another specialist, small plane similar to a block plane, but with its mouth close to the front like a bull-nosed plane.

Chase

You might 'chase' something out. This is another word for groove, so while cutting you'll be chasing out the shape and chopping away the waste.

Chase mortise

This is a stopped mortise hole that has a chase cut into one side so that the tenon can slide in and the excess glue can escape. With a really tight fitting mortise & tenon joint, you'll often find that the tenon can't seat properly if the glue is trapped in the bottom of the mortise. A little chase/groove will enable it to come out, releasing any pressure, thus making the joint.

NEXT MONTH

In part 8 of this series, Peter will move on to looking at terms including chattering, chisels and closeboarded

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My two border collies, Kato and Indy

Farmer's bails, all stacked up

RECYCLING + TURNING = HAPPY BIRDS

Coming across some discarded plastic tubing that was destined for landfill, **Andrew Hall** has the idea to turn these 1m lengths into novel bird box designs, complete with an oak pagoda roof and base

This month's project was a result of my morning walks with our two lovely border collies, Kato and Indy. The sun was shining, the fields had been cut, and the bailer was making those huge round bails. I was speaking to the farmer and noticed some plastic tubes about 1m long × 100mm diameter and asked what he did with them. He told me that they just had to be disposed of in landfill as they couldn't be recycled, and this was when a little eureka moment came up. I wondered if they could be used for the main body of a bird box. We have a great selection of birds around and often have blue and grey tits in the nesting boxes in our garden. It's great if you can recycle rather than just throw things away, and combining turning and recycling is an added bonus. I used some old oak that I'd harvested about six years ago; it was still stable but had one or two cracks in it. I was sure the birds wouldn't mind, though.

Turning tools used for this project were a spindle roughing gouge, parting tool, bowl gouge, spindle gouge and a 15mm round M42 razor-edge skew chisel from Crown Hand Tools.

SAFETY TIP

Always make sure your callipers have rounded ends. Doing so ensures they will not grab the timber when cutting a spigot while the lathe is running. If in doubt, stop the lathe to check the dimensions

1 I started with a square section of oak and turned it into a cylinder using my new skew chisel, which I am very impressed with. It's nice to handle and keeps its edge well. I normally turn square to round with a spindle roughing gouge and position the toolrest 6mm below the quill, with the tool at an angle of 45° to the toolrest, which ensures it cuts on centre

2 When using a skew, my preferred position for the toolrest is 6mm above the quill; this produces a shaving that is similar to using a smoothing plane on the top surface of the material. I use the bottom third of the skew to create the cut. Avoid using the entire surface or positioning it above centre as a dig-in is likely to occur, which is not a pleasant experience!

3 Next, using a 10mm beading/parting tool – mine is ground at an angle of approximately 6° to reflect the dovetail jaws – I turned a spigot/tenon to fit my chuck jaws

4 The plastic tubes I used were 1m long, so I cut them to 200mm using a chop saw. I was able to make five little bird boxes from each tube

5 I gauged the actual size of the tube and, using dividers and the left-hand spur, scribed the groove to accommodate the tube

6 Using a 10mm parting tool, I then turned a section to the internal diameter of the tube…

7 … then, using a 3mm parting tool, I turned a groove to accommodate the tube's external diameter

8 At this point, I tried the tube for size; I wanted it to go into the groove by about 12mm

9 Next, I cut a groove and another tenon for the top of the bird box before parting off

10 I used a pull saw to finish the cut through the body section

11 I could now cut the base of the bird box spigot and groove as previously. Using the wing of a bowl gouge to round the base off ensured there would be no chance of water soaking into the base once it was sealed. When assembling, I sealed the top and bottom using Everbuild Weather Mate Sealant

12 Next, I measured the base and checked it against the tube

13 I cut a slight recess in the base to accommodate my large dovetail jaws; this would allow me to remove the tenon and slightly undercut the base with a 15mm swept-back bowl gouge

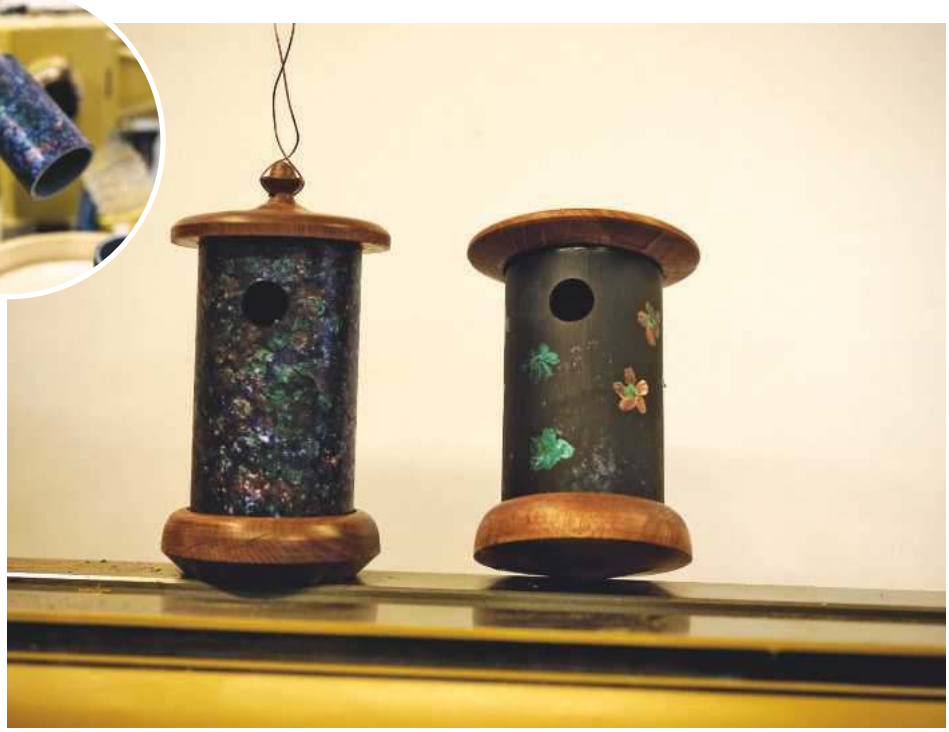
14 The offcut I had left for the top of the bird box was too large, so I parted off the material and made another base for the next box

15 I always part to a dowel section of 12-15mm and then finish parting using a pull saw. I protect the teeth of the saw with a piece of material; this stops them from being broken on the lathe bed, as if the saw drops down and hits this, the teeth are very brittle and therefore likely to break

16 Using a bowl gouge, I turned the top to a pleasing shape that would easily throw the water off – in this case, I chose to mimic a pagoda

17 Using a 10mm spindle gouge, I turned a bead and knob for the top; this would allow the bird box to be drilled to accommodate garden wire for hanging in a tree

18 I finished the top and bottom of the bird box using a wax finish. An oil finish or external lacquer could be used to keep the rain off and the top and bottom sealed with Weather Mate. The finished articles can be left plain or decorated. I had fun with the Joe Sonja's paints. I first painted the boxes with external black masonry paint, added decoration, then finally sealed them with a melamine lacquer



19 The bird boxes, all finished and ready for hanging. I'm sure the blue and grey tits will love their new homes in the garden!

CONFESSIONS OF A TIMBER GLEANER

Robin Gates explains his reasons for using wood from the wild and relives an alarming encounter on the beach

It's a poor walk in the wilds of Herefordshire that sees me coming home without a bit of natural grown timber in hand. Yesterday, for example, it was a sliver of straight-grained ash I'd picked up along the River Wye where a part-rotted tree had been felled, already planed and sawn down to a chunky coaster for the bedside mug of tea. A few days before that I'd been lured like a magpie to a gaudy orange slice of alder shining from the freshly-flailed hedgerow.

As an amateur woodworker, I'm sure I'm not alone in falling between the devil and the deep blue sea where the procurement of timber is concerned. On the one hand I'm dissatisfied by the knotty sap-laden 'whitewood' which is all that's on offer at the local DIY store, and on the other hand, I'm slightly intimidated by the prospect of approaching a pukka timber mill with my frankly minuscule requirements. It's a situation that's taught me to keep my eyes open in the countryside for what's lying free for the taking.

Waste not, want not

I used to call myself a scavenger until I twigged people had me down as someone searching through litter bins. Anyone who makes good use of what others throw away is on my wavelength, but I suspect timber is somewhat of a rarity in the bins around the bus station, so these days I'm going by the job description of 'timber gleaner'. A gleaner gathers what others have left behind, and it's a strong rural tradition, or was, when the village poor were allowed into the fields after harvesting to pick up what corn had been left behind. That said, I've heard timber gleaning is a contemporary activity in the forests of Vietnam where villagers follow in the wake of loggers collecting the timber they leave to rot.

In this country you can't walk off with timber from privately owned woodlands, but there are plenty of opportunities for finding small stuff on the public rights of way where tree surgeons and loppers from the Highways Department have been working. Oak, thorn, hazel, sycamore, elm and maple – I find them all, in small pieces, lying where they grew wild, and the knowledge of a timber's local origin certainly adds to its appeal. Sometimes there's a branch that's come down across a footpath in the wake of a gale, and also, sadly, timber that's been dumped in the hedgerow by fly-tippers. Dealing with that, I reckon I'm doing both myself and the next rambler along this way a service.

Bird attack

When we lived on the Isle of Wight, my hunting ground extended to the pebble beaches and rocky undercliffs where a fresh stock of driftwood was stranded by every falling tide. And it wasn't just the timber flotsam that drew me there, because whole trees came sliding down the cliff faces, too. Heavy rain filtering too slowly through the strata would pool above the clay layer, creating a greasy slipway on which chunks of land slid to the beach like cars of a funicular railway, taking the trees with them.

My biggest find was a raft of 8ft planks which must have washed off the deck of a cargo ship, and ended their days as our garden fence. But my most precious find was much smaller, and practically useless, turning up on the beach at Yaverland below the soaring sandstone cliffs. It was a concentration of tiny black fragments of fossil wood, some 120 million years old, and with the grain of its ancient vessels clearly visible.

On my knees and almost motionless, sifting the sand through my fingers, I heard something flapping in the breeze and stood up to investigate. Then I got the fright of my life. Coming out of the sun like a buzzard swooping on a dozy rabbit was a paraglider, boots first and unstoppable, about to press me flat as a fossil fern if I didn't move.

"Sorry!" he shouted, as I leapt blindly out of his path. Lying spread-eagled on the sand I watched him alight as gently as an autumn leaf, then gather in the great wing billowing around him. Somewhat shaken I picked myself up and searched in vain for the right thing to say.

"Didn't see you," the birdman called, chirpy as a lark. "From up there you looked like a lump of rock, bent over like that. Is something up?"

"No, not at all," I assured him. "I've found some fossil wood." "How exciting," he said, unconvincingly.

With that we exchanged awkward smiles and resumed our private ways, he folding his wing into a bag, myself heading for a calming paddle in the sea. Now when I'm gleaning for timber anywhere that high ground might provide a launch pad, I find myself keeping one eye to the sky for the man falling on my head like a piece of space junk.

Cartoon by **Tom Gates**

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WASTE NOT, WANT NOT

Rescuing some finest-quality Swedish kitchen knives from the bin, **Martin Pim-Keirle** strips off the original plastic handles and turns new ones using pieces of oak root, which he then polishes to a high shine

It is a sad fact of our consumer society that most people get bored of the things they own long before they're worn out. It's not unusual for products, especially simple ones, to be made of far more durable materials than their short life spans really require, meaning that landfill sites and recycling centres across the country are full of perfectly usable 'stuff'. And I think there's something quite pleasing about resurrecting and reusing what others have deemed fit only for the bin.

The kitchen knives you see here were being discarded by a neighbour, and are manufactured from finest-quality Swedish flat-pack steel. I neglected to take any 'before' photographs, but if you try to picture the dullest plastic handles you can imagine, you won't be far off. However, the blades themselves aren't bad: they hold a good edge and have a nice weight to them. And their shapes are rather pleasing, or rather, they will be with some hand-crafted wooden handles to help them look their best! Acquiring these knives happened to coincide with my being given a chunk of extremely well-seasoned oak root from a fallen tree. I gratefully accepted, knowing it would probably have some lovely swirling grain patterning inside, and might look great as the handle of a knife.

Removing the old handles

The old plastic handles were easily removed by clamping the blade in a vice and attacking the handle first with a Stanley knife, then with a screwdriver, and a hammer plus hardwood 'chisel', first splitting the handles with a blade and then driving them off the tang. The result was perfectly usable stainless-steel blades with rough, but quite strong, tangs for fixing.

Oak root is beautiful, but can also be quite brittle, with grain running in all directions. Sandwiching the oak around something straight-grained and strong, in this case a small offcut of

1 The knife blades have simple square tangs

maple for contrast, seemed like a good solution. This approach had the added benefit that, because the tang was flat and square-edged, a cut-out in the central strip of maple would create a hole for the tang once everything was glued together.

Drawing out handle designs

The first step was to draw out designs for the handles (**photo 1**). I did this by photographing the blades on a white background, then drawing a handle-shape around them on the computer and printing this out at actual size. The templates were glued to thin card and trimmed, though there was no need to cut out the central cavity as it was just a rectangle and could be marked easily enough using a pin.

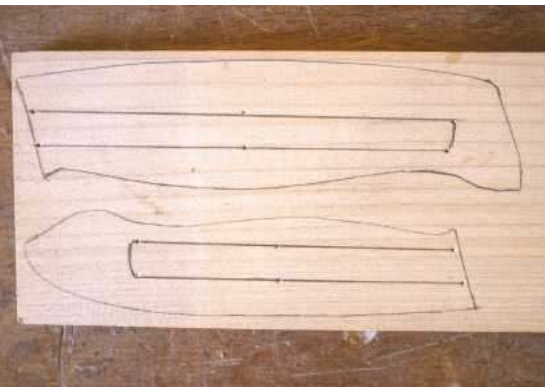
Preparing the parts

After a bit of time spent deliberating over which orientation of the knobbly root would yield the most usable wood, I cut it into approximately 10mm slices on the bandsaw (**photo 2**), running each newly cut surface over the planer so that the slices emerging from the saw were flat and smooth on at least one side. The maple (**photo 3**) required only planing to a thickness slightly greater than that of the blade tangs, at which point the templates could be used to mark out all the pieces for cutting (**photo 4**). I needed two pairs of handle shapes in the oak, and one each in the maple with pin-pricks to mark the corners of the central cut-out for the blade tang (**photo 5**). Once marked, I used a ¼in blade in the bandsaw

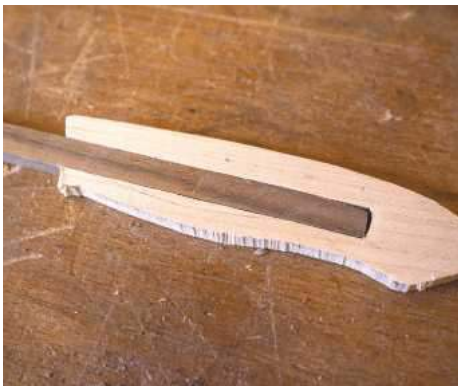
2 The oak root sliced up using a bandsaw

3 A piece of maple adds strength

4 The handle templates are laid out…



5 ... and their shapes marked out and cut



6 A simple stick will help hold the handles later

7 Sanding with a drum to clean up the parts

to cut out the pieces, always keeping at least 1-2mm from the line. A sharp chisel was used to clean up the cutout in the maple layer, checking this against the respective blade tang for a sliding fit. This done, a stick of hardwood was planed to match the same cross-section (**photo 6**). This would make it easier to hold and work with the assembled handles during the final shaping and finishing. The next step was to use drum sanding attachments in my pillar drill to carefully refine the shapes (**photo 7**), leaving just a hairline thickness of wood around the pencil line. It's important that this is done accurately if the handles are to clean up neatly once glued together, and with the blade emerging in the correct position (**photo 8**).

Gluing

I decided that epoxy might be more resilient than wood glue in this application, and maybe even lend extra strength. A little glue was mixed up and applied to the middle layer only of each handle. They were then clamped (**photo 9**), and the hardwood stick mentioned above repeatedly slid into each cavity, and wiped clean, to clear out any glue that had squeezed into the centre. I spread the remaining glue into any obvious gaps and cracks in the oak – it sets clear, and once sanded and polished, should be indistinguishable from the final lacquer.

Although I used quick-set epoxy, I left the handles to cure thoroughly for a day or so to become hard enough to sand easily. It was then back to the drum sanders to clean up the outsides of the handles, taking off enough material to true up the edges (**photo 10**), before doing a quick test fit of the blades (**photo 11**).

Final shaping

With this done it was time to begin the final shaping process. If this is the sort of thing you feel able to do with a carving knife or chisels, then you have my absolute respect. Personally, I would almost certainly have either broken lumps off the oak or whittled away so much wood that most of the new handles would be in chips on the floor! Instead, I opted to put an initial rounding on the edge using the router (**photo 12**), and then go back once again to the drum sanders for the final shaping.

Working with such small pieces on a router table never feels like the safest thing in the world, so if you're in any doubt, give it a miss. Personally, I feel that as long as you prioritise having a firm grip on the workpiece, always work in the correct direction, and remain ever-mindful that your fingers are just inches from a spinning blade, it's possible to make this process no more dangerous than any other use of a power tool in the home workshop. The advantage of creating a consistent rounded edge at this stage is that as soon as you hold the rounded handles, it's immediately easier to judge where more shaping is required.

With the initial rounding done, I then used a variety of sanding drum sizes to create a comfortable variation in width along the handles and then blended this into the profile of the design (**photo 13**). It was also necessary during this process to do a test-fit of the blades again, and mark a pencil line around the bolster as a shaping guide (**photo 14**).

Final finishing was done by hand (**photo 15**), running up through the grits to get a smooth finish that would look (hopefully) flawless under lacquer. Again, I spent a little time repeatedly testing the handles on the blades to ensure

8 Accuracy is important at this stage

9 The layers sandwiched together and clamped

10 Once cured, the edges can be trued up

11 A quick check to make sure everything looks OK

12 A router does the initial rounding

13 Final shaping is carried out using a sanding drum

14 The handles need to match the bolster shape

15 Final finishing is completed by hand

16 Repeated test-fitting ensures a good end result

a perfect fit against the bolster (**photo 16**). Even a small gap would not only show up once finished and fitted, it could end up being a water trap and spoil the handles.

Elsewhere, small cracks and voids (common in wood like this oak) were filled using repeated light applications of CA adhesive with the goal of achieving a perfectly smooth finish.

Finishing & fitting

Once sanded to a 400 grit finish the handles were cleaned using a tack cloth, and sprayed directly with some clear lacquer that I happened to have left over from restoring a set of alloy wheels (**photo 17**). I've used automotive lacquer on wood before with success, and it can be purchased very cheaply in discount shops such as Home Bargains. I gave the handles a couple of light coats a few minutes apart and left them to dry overnight before rubbing back with a very fine sponge sanding block, cleaning up again with a tack cloth, and then applying another two coats.

Finally it was time to unite the handles with the blades on a permanent basis. Masking tape along the blades and around the bolster protected my

17 Clear lacquer applied directly to bare wood

18 Masking tape prevents glue marks

hands from damage and the (newly polished) blades from marks. Similarly I wrapped the tops of the handles in tape to prevent marks on my shiny new lacquer (**photo 18**).

I'll be honest and say that getting the right amount of epoxy into the handle cavity was not the easiest thing to do, but with the help of a slim stick to act as a spreader inside the cavity, and by also adding a little epoxy to the tangs, I got there in the end. I spread a little extra glue over the end of each handle to seal the join between it and the knife bolster (**photo 19**), and removed the masking tape from the handle and bolster as soon as the blade was in its final position, to avoid the tape becoming a permanent feature!

After another overnight curing, the only remaining task was to give the handles a polish with light rubbing compound – T-Cut to you and me – and sharpen the blades. I hope you'll agree that the end result (**photos 20** & **21**) looks a lot less disposable, and hopefully a little less likely to end up in a bin any time soon.

19 Once assembled, the tape is wiped and removed

20 I think the end result looks pretty good!

21 The finished knives complete with matching chopping board

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THE LOST WORLD

A long time in the making, **Dave Roberts** hopes this turned applewood sphere will be even longer lasting

"Every woodworker," said David Burton in 2013, "has a special piece of wood put aside – a lovely bit of burr or beautiful timber that they've saved for the day when they find the right way to use it."

Back then, David's own collection of special pieces included around 12 tons from the heart of the world's oldest commissioned warship, HMS *Victory*, which, as Admiral Nelson's flagship at the battle of Trafalgar, became one of the most powerful symbols of British nationhood. Large as it was, however, David's cache (now sold) was really only the rump of the mountain of materials salvaged by the Royal Navy during the ship's 80-year long restoration: between 1922 and 2005, *Victory* gave up 10 tons of copper sheet, rivets and rods, and 34 tons of timber, the greater part of it oak.

Heart monitor: the seasons traced by the growth rings in this oak belonged to a different century

In 1999, these arisings were sold to a private consortium, Victory Ltd., which (to cut a long story short) created the 1805 Collection – a series of limited-edition pieces made from *Victory* oak and copper; a proportion of Victory Ltd's proceeds was then donated to the ship's restoration fund in the lead-up to the Trafalgar bicentennial in 2005.

Among the 65 or so cabinet and box-makers, turners and carvers who contributed to the collection, David came to be regarded as the 'default maker', mainly because he was the only one willing to produce items in relatively large numbers incorporating materials that were, frankly, difficult to work: the sizes and shapes of the pieces of salvaged timber were, for the most part, unsuited to being sawn into boards. So while the greater part of the collection was made up from smaller keepsakes – wine stoppers, spoons, and boxes; paperknife handles, pepper mills, and pen barrels, all crafted to provide enthusiasts with a little piece of history – David devised a way to make 'composite' *Victory* timber (See 'composite timber'), and in the course of working it he encountered a surprising manifestation of its link to the past. The salvaged timbers dated from various stages in HMS *Victory*'s life, but among those sections that were part of the ship when

she fought at the battle of Trafalgar, some – in particular, remnants from the gun decks – were so steeped in powder smoke David claims, that when he turned or sawed them the ghost of that famous action off Cadiz more than 200 years ago was re-awakened, and could be smelled in the acrid scent of the wood's dust.

The oak from HMS *Victory* was a particular case of David's theory regarding special pieces of wood, of course, but while the applewood pieces that I've kept as souvenirs of a vanished world neither served with Nelson nor survived Trafalgar, they have in common that quality which invites us (or maybe it's just me, I don't know) to think of wood as an enduring and tangible link to the past that will endure into the future, needing only the conjunction of inspiration and opportunity to bring the connections to life. And that's precisely what happened when I met John Gibbons at the Shropshire Association of Woodturners (SAW), and he agreed to try turning one of my pieces of twisted fruitwood, though, in fairness, most woods worth keeping have these shades of both past and future in their figure, don't they. Quickly tally the growth rings of this newly shaped purlin end, for example, and they number about 40; there was much more to the oak tree from which it was sawn, of course, so the years traced there in the heartwood must have come and gone in a world well before my time. And, soberingly, it should be weathering the passing seasons long after my time, too.

In this, wood has the patience of stone, but none of its mineral remoteness: though wood's stride can be measured in centuries compared to our brief three-score and ten, it always feels familiar, partly, perhaps, because it's organic, and partly because its ways are known, and the means of working it are also part of a long and continuing tradition. So while John, for instance, would have liked to have done more turning at school, when he had ambitions to work in wood (pattern-making was what he had in mind, but circumstances made an electrical draughtsman of him), woodworking was there to come back to in retirement, because the span of a working life is far too short to have seen much change in its practices. In the same way, John's lathe – bought when he was 60 but which waited 'til he'd retired to be set to work – would be understood by generations of makers as a recent but clearly recognisable extension of that woodworking tradition (though as an aside John tells me that it has already out-lived one of SAW's chairman, who was also out-lasted by his coachhouse-full of timber – a collection of special pieces, no doubt, saved for the day when he found the right way to use them…).

Nelson enthusiast David Burton with part of his cache of *Victory* timber

David found many ways of incorporating small pieces of *Victory* timber…

… into larger pieces of furniture

The lathe's rotating headstock allows awkward pieces to be mounted clear of the bed

Removing the wood's most eccentric parts eventually allows the apple to be spun at a working speed

Talking of life, maybe the connections that John now makes through turning – either with people who offer him timber or ask him to make pieces – adds another nuance to this warm, almost companionable idea of wood as a living thing whose natural beauty enables us to regard it is a deserving survivor, meaning that we're comfortable with the idea that it will endure even though we won't.

A planet-like sphere

Anyway, this circumambulation has given me time to take the grizzled applewood to John at his workshop near Hook-a-gate – a curious name, and one linked, it's suggested, to a waypoint on an old drovers' route through the borderlands – and for him to set up the blank on a faceplate. Being able to swing the whole headstock clear of the bed means that large pieces like this can be easily mounted, though turning proper can't begin until something has been done to improve its irregular shape. As John removes the most eccentric parts a little at a time, and tests its balance often, his chainsaw cuts begin to reveal the apple's lively figure, as well as the worm holes and tracks, and the inclusions that will all form part of its hoped-for character.

Once the lathe can be run at a working speed, the first step is to turn the rough blank to a cylinder; the wood – which might have been cut as long ago as eight or nine years – is hard, and John chooses a bowl gouge for this rambunctious turning because it's sturdier than a spindle roughing gouge, with its thinner tang. The diameter of the cylinder obviously determines the maximum size of the finished sphere, and shorn of its lumps and bumps, the apple promises a globe of around 7in in diameter, which serves to guide the next phase – working the ends to round the blank and introducing the beginnings of some 'spherical-ness'. For this, a pencil-line provides an equator from which the northern and southern hemispheres should curve symmetrically down to the 'poles', where John turns a pair of bosses that allow him to mount the workpiece between centres.

Continuing to work by eye, John slowly turns away the high spots, the tool guided by the ghosts, or shadows, created along the horizon of the rotating wood by irregularities on its surface. He's conscious all the while, though, of the deep inclusions, which blur into invisibility when the piece is turning, but which are waiting to catch the tools; the apple's many knots, meanwhile, play havoc with the cutting edge, sending John to the grindstone to refresh their edges.

Having shaped the piece thus far by working on a single axis, it's time to change to a second, perpendicular axis. After a quick sand with Abranet, John removes the bosses and sets about mounting the workpiece between two cups, and enters what his wife, Carol, calls 'mutter mode' – thinking out loud – as he tests and adjusts their concavity to match the workpiece: "I'll take a little bit more; don't want to take too much…"

When the turning resumes, small pieces of bark

The diameter of the cylinder determines the size of the finished sphere; with a pencil-line as an equator, the ends of the blank – the northern and southern hemispheres – can be shaped to curve down to the 'poles', where John has turned a pair of bosses to mount the workpiece between centres

John turns away the high spots, the tool guided by the ghosts created along the horizon of the rotating wood by irregularities on its surface

A quick sand with Abranet, and the bosses are cut away…

fly off like something escaping the gravity of the planet-like sphere, whose whorls resembles the dramatic atmospherics of Mars' surface, or maybe Jupiter's. The huge inclusion in the mid-latitudes, meanwhile, looks like an enormous meteor crater; it also limits the speed of the lathe, because the workpiece, though altogether more regular in shape, still isn't balanced. If it comes out of the cups, which way is it going to go? "Nobody knows," John answers, lending his ear as well as his eye to the task as he listens for any sign that something might be about to come adrift.

Working between the cups allows John to reposition the workpiece freely, shifting its axis so that he can chase the ghosts from the horizon and finesse the shape – "though you have to decide when to stop," he says, "or you'll end up with a grape."

The finishing touch, then, is some power sanding – taking care to avoid softening the definition of the inclusions – followed by a coat of cellulose sanding sealer to protect the surface from finger marks; this planet exerts an almost irresistible attraction, drawing people to pick it up and roll it in their hands.

COMPOSITE TIMBER

David Burton used resin to combine smaller pieces and offcuts of *Victory* timber into larger boards. The sections were arranged in a tray lined with plastic sheet, and the gaps between them filled with resin (epoxy, rather than polyester resin, which tends to shrink more); once dry, the whole tray was filled with resin to bind the sections together. When the resin had cured, the faces could be sanded to reduce the blanks to boards of uniform thickness. For turning, the reconstituted blanks were sometimes stabilised either by using a sacrificial backing, or by gluing fillets across the back to tie the parts together.

As these photos show, the combination of resin and wood opens up all sorts of possibilities for turners: you could, for example, turn a bowl, fill it with wooden pieces and resin, and then re-turn the interior. David also combined the *Victory* oak with gold leaf, painted leather, and pieces of the copper sheeting taken from the ship's hull, all of which add extra dimensions to the timber, and opportunities to introduce contrasting textures, colours, and detail

Epoxy resin can be used to combine small pieces of timber into larger boards such as the one used to make this table, which is also inset with a piece of *Victory* copper

Here, fragments of *Victory* oak have been embedded in opaque black

Victory fragments and resin were added to partially turned blanks, which were then finished to create inlaid bowls…

… in some of which the embedded fragments still retained their rind of ship's paint

From sapling to sphere, 'The Lost World', as it has already come to be known, has been a long time in the making, maybe half a lifetime or more. But then what's 30 or 40 years to a long-lived wood? Hopefully, like HMS *Victory*'s oak, it will still be around in 200 years or more, and the reason that it was made one summer in the borderlands – to provide a tangible link to a Kentish orchard and the long-vanished people who enjoyed it – won't be forgotten, either.

… the fixed centres making way for cups that allow the sphere to be freely repositioned

The workpiece's deep inclusions blur into invisibility when the piece is turning

The planet-like sphere's whorls resembles the dramatic atmospherics of Mars or maybe Jupiter, and a huge inclusion in the mid-latitudes looks like an enormous meteor crater

LETTERS

★LETTER OF THE MONTH

CARVING & CARPENTRY

Hi Tegan,
My name is Kev Dale and I've been woodcarving since last September. I'm such a woodworking fan that I've finally decided I want to become a carpenter. I start college in September, for one day a week. I work full-time as a gardener, but now, at the age of 52, I want a career change. I'm so excited when I finish work in the afternoon that I start woodcarving. I have made spoons and bowls for presents and they have been well received. I really like your magazine. At the end of the year, I'm even thinking about starting my own woodcarving blog.
Warm regards, **Kev Dale**

Hi Kev, many thanks for your email. I'm really pleased to hear you've discovered woodcarving and fantastic news that you're starting college and learning carpentry – this is a very inspirational story! It's clear you have a deep love of woodworking and great that you are going to expand your skill set when you start your course. We love your rustic carvings and look forward to hearing how your journey develops! Good luck with your blog too!
Best wishes, **Tegan**

This heart carving was given as a Valentine's Day gift

Thistle carving, inspired by the film *Braveheart*

BANDSAW OBSERVATION WINDOW

Hi Tegan,
This is really a tip and request for bandsaw manufacturers, although it's a simple modification for your readers.

I've only had two bandsaws – one a second-hand Draper and just recently a Scheppach – both of which are bench-top models. I have modified both bandsaws to give me the ability to observe the running of the bandsaw blade around the motorised wheels, so that I can adjust the position of the blade on the wheel during operation. All bandsaw providers ask the operator to adjust the blade to run on the middle of the wheel, but most modern machines have a safety cutoff when the doors are opened. So adjusting the track of the blade becomes a case of 'open door, observe blade position, adjust tracking slightly (hopefully in the right direction), close door, run bandsaw, open door, observe blade position... and continue until satisfied'. Occasionally, if you get it wrong, the blade will come off the wheels and you have to start all over again. The attached photo shows my solution. This was a little bit harder with the steel frame of the Scheppach – the Draper had plastic frame covers and was easily cut. For the Scheppach, I used an oscillating multi-tool to cut out the window – not easy to start with as you can see by the initial scratches – until a decent groove was established, but now I can see the blade running on the upper wheel, and can adjust during operation. There's no need to remember which way to turn the adjuster, either, as any adjustment instantly moves the blade across the wheel. I will clean up the cut-out and attach an acrylic window to the inside. This is such an easy modification that I wonder why no manufacturer has thought of it before? They would obviously do a much better job than me!
Best regards, **Colin Lloyd**

Colin's simple modification for his bandsaw – a handy observation window

Hi Colin, thank you for another useful tip! Yes, this seems a very easy mod, and you can't help but wonder why it's not used more commonly by manufacturers? Perhaps it's a case of not being thought of before, in which case, well done for coming up with it! Let's see if anyone else has developed a similar solution.
Best wishes, **Tegan**

ANOTHER HAPPY PLANE RECIPIENT

Hi Tegan,
The Veritas plane has landed! What a beastie. As you can see, I'm quite thrilled and can't wait to give it a go. Off to the workshop – thank you so very much!
Kind regards, **Denis Whittaker**

Hi Denis, what a great photo – I think that perfectly sums up your excitement! It is a fine beast indeed! I hope you enjoy using it to make lots more woodworking projects! Congratulations again!
Best wishes, **Tegan**

Recent readers' tip winner Denis Whittaker is just a little overjoyed with his new Veritas plane!

Geoff the BFG (Big Friendly Giraffe)

NOT ANOTHER GIRAFFE!

Hello Tegan,
Introducing Geoff the BFG (Big Friendly Giraffe), which I recently made for my youngest granddaughter. It looked a bit strange with eyes so we added false eyelashes (Boots' cheapest!) We thought he looked more like Geoff than Gilly!
Kind regards, **John Ingrey**

Hi John, well that's fantastic! Thanks so much for sharing and I love the addition of the eye lashes! I hope he brings your granddaughter many hours of entertainment and joy! We can't wait to see what you make next!
Best wishes, **Tegan**

READERS' HINTS & TIPS

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

USING INNER TUBE FOR CLAMPING

Hi, I'm 18-years-old and have just started the third year of a joinery apprenticeship. My tip is for using old inner tubes for clamping veneer to curved work. I came across this method for gluing veneer to curved pieces a couple of years ago when making a small table with all curved components and veneer on all the edges (**photo 1**). I took an old inner tube from a bicycle and cut it into strips, each about 25mm wide. Once the piece of wood had been cut to shape, the edges to be veneered can be smoothed and the veneer cut about 2mm wide and left plenty long. Once the glue has been applied, one end of the inner tube strip is taped to the workpiece wherever you want to start (**photo 2**) and then it is wrapped round and round until the whole length of veneer is clamped in place. When the piece is wrapped sufficiently, the inner tube can be taped or tied off (**photo 3**). Make sure that the inner tube is pulled tight each time it is wrapped around. If you run out of length of inner tube, it can just be taped off and you can start with another piece. I have seen this same thing done with tape or rubber bands, but tape can only be used once and rubber bands don't have much clamping pressure. With inner tube you can get a lot of clamping pressure so quite a thick veneer can be used, and it can always be double wrapped if more pressure is required. When the piece is unwrapped, any dried glue stuck to the inner tube cleans off easily. Inner tube is pretty durable so it should be able to be reused many times. Regards, **Jonathan Griffiths**

1 Veneered edge table made using inner tube clamping method

2 To start, tape one end of the inner tube to the work

3 Wrap inner tube tightly, clamping the veneer in place

SIX STARS TO D&M TOOLS

Hi Tegan,

In these days of all-too-frequent poor service, I would like to award not five but six stars to D&M Tools for outstanding personal customer service. When my Hegner lathe packed in (hopefully not permanently), I dragged out my old £100 Record as a stop gap but needed a spindle adaptor so that I could use my M33 × 3.5mm chucks on the ¾in × 16tpi Record. Unfortunately, I ordered the wrong one and had to return it. As soon as it arrived at D&M, I received an email from Ian Sims who had identified the correct adaptor but I did not read the email until late on a Friday afternoon. Nevertheless, at 5.27pm on Friday, Ian's colleague Will took my telephone confirmation of the order and shortly thereafter I received confirmation of dispatch. This was a small transaction but the communication and service was exceptional. D&M is a long-standing advertiser in the magazine and I thought you (and they!) should know how much I appreciated this service. Regards, **Ken Mackinnon**

P.S. As you can see from the attached photo, I'm still making great use of my Veritas plane!

Ken's Japanese-style pencil box, which he made using his recently awarded Veritas low-angle jack plane

WRITE & WIN!

We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about the magazine's features, so do drop us a line – you never know, you might win our great 'Letter of the Month' prize, currently the new Trend ¼in 30-piece Router Cutter Set, worth over £100. Simply email **tegan.foley@mytimemedia.com** for a chance to get your hands on this fantastic prize – good luck!

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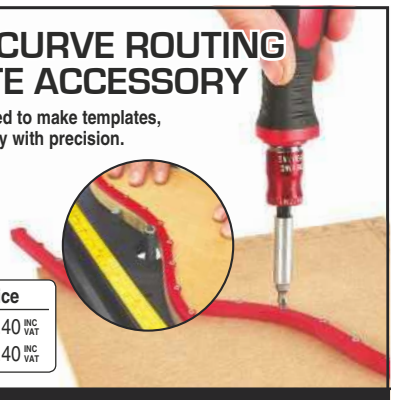

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MAKING SUCCESS HAPPEN

Anselm Fraser, Principal of **The Chippendale International School of Furniture**, introduces four professional course alumni, each of whom share their personal secrets of success

It's a tough world out there and, alas, there are no shortcuts to becoming a successful woodworker. At our school, our nine-month professional course equips students with all the skills they need to set up in business as fine furniture designers. As part of the course, we also make sure that students understand the basics of business planning and marketing, the two fundamentals that underpin success. It's our way of making sure that our students graduate with realistic expectations and an understanding that success takes perseverance. So what are some of the pitfalls? Let some of our former students offer their advice.

STUDENT PERSPECTIVES

Ewan Ogilvie

Scotland-based Ewan Ogilvie studied with us between 2012 and 2013, and cautions woodworkers to only design and create to the highest standards: "Your previous customers can be your best advertisers," he says, warning students also to have realistic expectations when they graduate. "It's a fantastic way to make a living," says Ewan, "and I wouldn't now change it for the world, but establishing yourself in the market takes time and hard work."

Ewan's company, Ogilvies of Haddington, gives employment to three other graduates from the school

Sam Rouse

Sam Rouse (2015–2016) from the USA has a more cautionary tale. After graduation, when he landed back in the USA, he found a voicemail from an interior designer on his phone. He had a client who'd just built a $1million dollar home and was looking for upwards of 15 pieces of furniture. Sam immediately set up a workshop in North Carolina, and one month later the client disappeared and stole the interior designer's designs. "That's how my story starts," says Sam. "New city, wife, one daughter, no work. That's the bad news. The good news? Three years later, I am making furniture at Sam Rouse Furniture and loving it. Although I am still new to woodworking, I have learned so much over the past three years."

Sam's advice is to start small to avoid taking on too much debt by buying expensive tools and machinery. He also cautions about pricing: "My first project was a desk that took two months to make and I charged $800. Terrible! But don't also fall into the trap of over-charging.

"Work out what you need to live and pay the bills, then slowly increase your prices as time goes on. That's worked for me."

Gary Staple

Gary Staple, Nova Scotia, Canada (2013–2014) also advises new woodworkers to keep their overheads low: "The first few years will be the most difficult and high overheads can sink a new company. My advice is not to rush out and buy lots of shiny new equipment, but do buy quality in the tools you use the most."

He also emphasises the importance of pricing: "It's easy to price too low, but the fact of the matter is that custom furniture is a high-end market product."

Gary Staple owns and runs his own business, Gary Staple Fine Woodworking

Sam Rouse runs Sam Rouse Furniture and loves it

He also advises new woodworkers to document everything and take lots of photographs: "The internet is your greatest sales tool, but only your best pieces should make it onto the website. Build your online presence with good content."

Lastly, Gary also warns new woodworkers to have sensible expectations: "Grow slow, be patient, and don't rush into your dream workshop until you're sure you can afford it," he says.

Mike Whittall

Mike Whittall, Scotland (2015–2016) was fortunate to 'hit the ground running' with a good commission from an ex-colleague, and advises new woodworkers not to underestimate their existing network of friends, relations or former colleagues. He set up his own workshop at home and made a plan to design and make new furniture, take on restoration work and run woodworking courses.

"The idea was to create three complementary income streams, which could fit round each other and show customers a variety of activity. For a creative, this might all sound a bit too much like business speak, but, ultimately, a business was what I needed as well as being an outlet for my creative ideas," says Mike.

"Just under three years on, the plan is starting to show growth. The commissions are beginning to come, restoration projects are now fairly regular, and I have also developed a series of weekend courses.

"I won't pretend it's been a walk in the park, but that's the reality for any business start-up. To extend an oft-used phrase, this whole thing has been a real journey, both frustrating and rewarding and I wouldn't change a single thing," finishes Mike.

Sage advice

All those students have now made it in the world of fine furniture design and making, but despite working in different parts of the world, and specialising in different areas of woodworking, their sage advice is much the same: be realistic, start small, don't pile up unnecessary debt on expensive equipment you'll rarely use, but, above all, persevere!

FURTHER INFORMATION

To find out more about courses offered by The Chippendale International School of Furniture, see **www.chippendaleschool.com**

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The variations that occur during the manufacturing process make each JAZ piece unique

IT'S NOT EASY BEING GREEN

Dave Roberts has a hard time with JAZ, a wood-substitute that's made from recycled paper

TOOLS YOU'LL NEED
- 6mm scraper
- Parting tool
- 12mm bowl gouge
- Electric drill for power sanding

When Louis Armstrong was asked, "What is jazz?" he replied, "If you have to ask, you'll never know." Well, this is JAZ, and if you haven't already heard of it, then I hope I have more success explaining this innovative material than Louis did with his music!

The story starts when Barbara White, who developed JAZ, visited an antiques fair and was surprised to find a chair made from papiér maché. This wasn't a decorative novelty, though: in the early 19th century, papiér maché was made from sheets of high quality, starched paper that were laid and pressed together, a process that gave the sort of structural properties that enabled it to

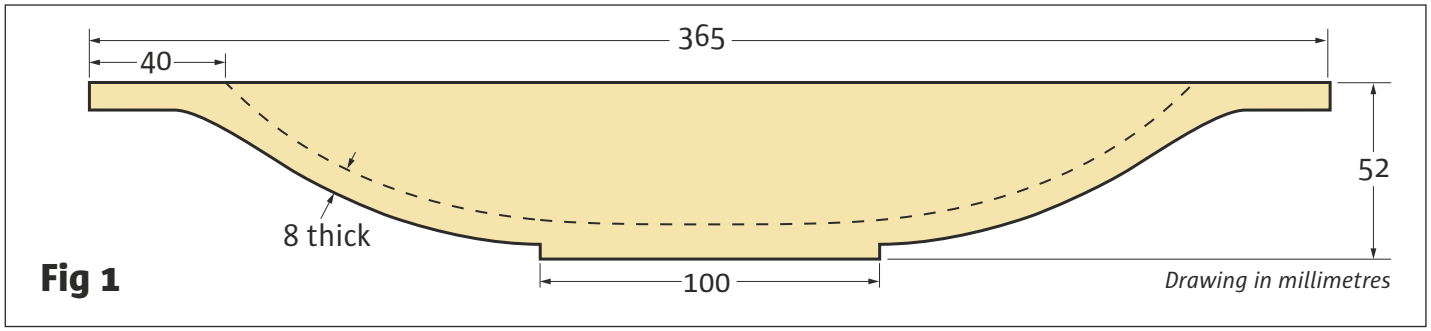


Fig 1

Fig.1 Dave's JAZ composition

1 Mark out a circle on the blank and cut it out on the bandsaw. The easiest way to turn the bottom...

2 ... is to mount it into large jaws. I made this set myself; the hard rubber pegs hold the work firmly without damaging it

3 Turn the spigot with a parting tool and shape the rest of the bowl's underside with a gouge

be used to make load-bearing objects like chairs. Barbara reasoned that, with today's technology and the ready availability of waste paper, it should be possible to produce a modern version of papiér maché from which furniture and other products could be made. So she started experimenting in her kitchen, cold-pressing starched waste paper that she coloured with vegetable dyes.

As work progressed over the ensuing 17 years, Barbara won European grants and support for her research from UCE Birmingham and Tufnol Composites. The culmination of her work was JAZ – a composite material that combines 80-90% recycled materials and (unlike MDF), non-toxic solvents and resins that are pressed together at 200psi.

JAZ, then, has plenty of credentials as an environmentally friendly product. In fact, because JAZ can be made from any cellulose waste such as straw and vegetable matter, research is now looking into the use of by-products from the bio-fuel industry. The long term aim is to make JAZ a viable alternative to wood, ivory, plastic, and other composites. So far, it has been used

Elbow grease: after the hard work of turning JAZ, and a thorough power sanding, all it takes to finish it is a light polish

4 Reverse the bowl into the jaws on a combination chuck, and then…

5 … use a freshly sharpened gouge to true up the outside of the bowl

6 Use a 12mm gouge to turn the inside and watch the pattern of the JAZ's layers reveal itself

to make furniture veneers, wall cladding and – the reason for my interest – woodturning blanks.

When it comes to turning, JAZ certainly has plenty of design potential, not least because it's rich in character. Just as with figuring in wood, the variations that occur naturally during the laminating process give each piece of JAZ its unique patterning.

As a result of the moulding process, the JAZ turning blanks are already dish-shaped, but they're also square. So, before I could do any turning, I had to use a compass to mark out as large a circle as possible within the blank and then cut the corners off on the bandsaw – the ideal tool for this job.

I planned to produce a finished bowl of 365mm diameter, and if you do the same, your lathe will need sufficient capacity. I turned this bowl on my short-bed Graduate, but a lathe with a swivel head should cope with the job.

Preparing the blank

I held the blank in my home-made jaws, which fit onto an Axminster four-jawed chuck. Had the blank not been dished, I would've mounted it on a faceplate. I then set the lathe to run at a low speed – 425rpm was sufficient for the whole process – and turned a spigot with which to mount the JAZ in a combination chuck. With a bowl of this size, the bigger the chuck the better, so I used a parting tool to turn a 100mm diameter dovetailed spigot about 6mm deep and this fitted into the Axminster Mega jaws, which have great holding power.

7 In the event of delamination, cut off the loose part and re-turn the surface to remove the flaw

Tough stuff

I could now turn the rest of the bottom, so I sharpened my gouge and started turning. Within seconds, I discovered just how hard and abrasive this material is: just a few passes with the gouge and I needed to sharpen it again. I found that I could sharpen my gouge, turn off the grinder and walk the three metres back to the lathe, then take a few cuts, blunt the tool, and be back at the grinder while it was still slowing down! The point I am making is that you shouldn't expect to turn this material quickly; it will take a fair amount of time and patience.

When I reached the finished shape, I took light cuts that would leave the underside with a reasonable finish, which was ready for sanding. I found that the best and quickest way to finish JAZ was to power sand and give it a light polish.

Turning the inside

I discovered it's very important that the blank is well anchored to the lathe, so I put the blank onto the chuck and made sure it was tight. I placed the toolrest near the outside rim and turned the blank around by hand to check that it cleared the toolrest.

I decided to leave the edge of the bowl flat, which I thought would suit the bowl better than having a rounded edge. Then, with a freshly sharpened 12mm bowl gouge, I attempted to turn the inside. This was no easier than turning the rest of the bowl, and I lost count of the number of times I went back to the grinder to freshen the edge of the tool.

As I was turning the bowl, I regularly checked the wall thickness with figure-of-eight callipers. I stopped the lathe while I did this, and moved the callipers around the bowl, noting where I needed to remove material to get an even wall thickness.

When I was turning the bowl I heard a ticking sound, so I stopped the lathe and noticed that a

EXPERIMENTING WITH TOOLS

Throughout the turning of this bowl I tried gouges of different makes and sizes; I even tried scraping the inside of the bowl. All the tools I used were high-speed steel, and I found that the gouges turned the bowl quicker and their performance was much the same as the scrapers

8 Correct use of the gouge will produce loads of shavings, just like a close-grained timber

9 I found that the best and quickest way to achieve a good finish on JAZ was by power sanding

10 Reverse the bowl into the jaws and turn the spigot into a foot

piece of the composite was hanging off. I had two options: one was to stick it down with CA adhesive; the other was to cut the piece off. It may be that it would have stuck down satisfactorily, but I decided to cut it off and turn the bowl a couple of mil' thinner.

This was the only occasion on which I had a problem with the JAZ delaminating. Otherwise it was fine, and you can see that the shavings it produced are the same as when you're turning a tight-grained timber. As long as I kept the bevel rubbing, I found I got shavings and plenty of them!

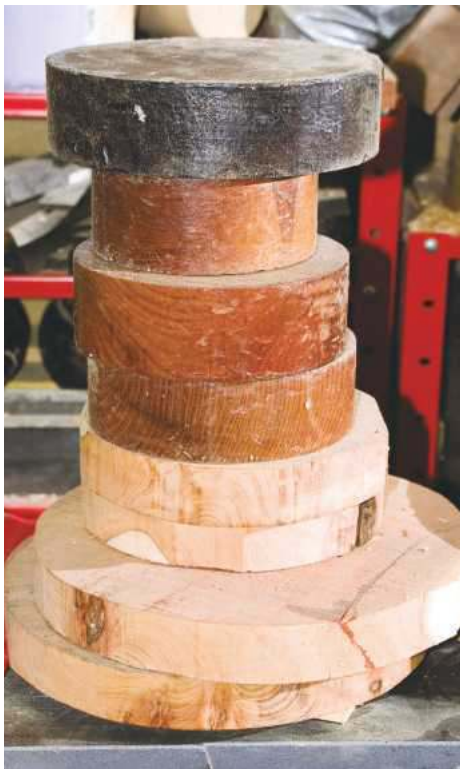
Sanding & finishing

Once all the turning was completed, I again used power sanding to finish the inside of the bowl. For those of you who have never power sanded, it's quite simple. The sanding discs, which can be bought from a variety of suppliers, are 50mm in diameter and the sanding pads themselves – which cover the range of sanding grades from coarse to very fine – are held on the discs with hook-and-loop. As long as you work through the sequence of grades, you'll get an excellent finish.

I started with 120 grit, which flattened the surface very quickly, and worked all the way down to 600 grit, which left a very satisfactory finish. Just one coat of sanding sealer did the job, followed by a rubbing back with '0000' gauge wire wool when it was dry. All that was needed then was a light coat of polish.

If you put on too much polish, you run the risk of having the bowl end up looking like a ploughed field, and the only way to overcome this is to stop the lathe and use '0000' gauge wire wool to remove the excess polish, before buffing with a soft cloth.

NEXT MONTH
Dave turns a tasty coat rack in yew laced with ebony



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AROUND THE HOUSE WITH PHIL DAVY

Needing to replace the entire roof of my garage recently meant installing new joists as well as OSB boarding on top. Checking around for prices from several local suppliers, I ended up buying timber from my usual hardwood merchant, who also stock softwoods. Although I didn't need the quality, it was cheaper to buy the wood I needed from them, rather than a builder's merchant. When I collected the timber I did feel slightly guilty, though. This was joinery grade, unsorted redwood from Scandinavia, some boards completely knot-free over their 4.5m length. It was untreated, but it's easy enough to brush on a couple of coats of preservative. Compared with the adequate but far knottier timber offered by regular builders' merchants, there was no contest. This is the same grade of timber I've used for joinery projects in the last few years. It certainly pays to shop around…

OUT & ABOUT

CORNISH DWARFS

You can find mature oak trees that are only around 1m high on north Cornwall's remote Atlantic coast

Known as Dizzard Wood…

In Britain we're fortunate to have a wide variety of both deciduous and coniferous trees, largely due to our temperate climate. But where can you find mature oak trees that are only around 1m high? On north Cornwall's remote Atlantic coast, where the cliffs drop steeply down to the sea overlooking Bude bay. Known as Dizzard Wood, these *Quercus petraea*, or sessile oaks, may only cover a fairly small area, but the woods are of international importance due to the rare lichens and mosses found growing on the branches, a sign of clean air. Stunted by the salt-laden air and frequent gales, these are dwarf oaks, fully mature but standing no more than waist high lower down near the shore. Remarkable for trees that are reckoned to be 150-years-old, at the top of the cliffs they're more recognisably oaks at up to 8m high, though still undersized. Anyone who is a regular visitor to north Cornwall will know the weather can be quite extreme at times, so it's little wonder these trees are so diminutive.

Fantastic contorted forms

This small tract of land has been woodland for some 6,000 years, so apart from a minor road running nearby little has changed to the landscape. The South West Coast Path runs along the top of the cliffs and passes through Dizzard Wood, so it's easy enough to reach from the lane by walking across a field or two. I first discovered the trees when walking the coast path about 20 years ago, though had previously heard about them from elderly relatives living close by. Returning in October 2016, it was wonderful to see the trees displaying their autumnal colours. A closer exploration at Easter this year, Mrs Davy and I came across some fantastic contorted forms that we'd missed before. Next time I must fight my way down to the beach, though the path is not easy to find.

Among the sessile oaks are wild service, rowan, birch and pedunculate oak (*Quercus robur*), too. Visit what has been described as temperate rainforest in spring and you'll see masses of bluebells and primroses. And you'll hardly see another soul, even on a Bank holiday…

… these sessile oaks may only cover a fairly small area, but the woods are of international importance due to the rare lichens and mosses found growing on the branches, a sign of clean air

At the top of the cliffs they're more recognisably oaks at up to 8m high…

… though still undersized

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TECHNIQUE

WORKTOP ROUTING JIGS

Worktop routing jigs are not exactly cheap, especially if you're only installing one kitchen. But if you want the tightest possible joints and cleanest cut-outs, then you'll need to use a router. Of course, you can make templates for curves or straight cuts from MDF or plywood and use a bearing-guided cutter, but for certain tasks (such as jointing postformed laminate worktops) it will be almost impossible to get a clean, precise joint without a dedicated jig. These are designed to be used with a guide bush fitted to the router base. This runs inside an appropriate slot in the jig, making the router easier to control when making deep cuts. Heavier worktops generally finish at 40mm thick, so a big router set at maximum depth can be a bit unwieldy to use. A dedicated jig makes the operation safer and you're almost guaranteed greater accuracy, with no chance of the router tipping.

Both UJK and Trend appear to make almost identical jigs, for which you'll need a ½in plunge router, plus a 50mm 12.7mm straight cutter and 30mm guide bush. I used a Trend Professional two-flute bit (⅜3D), which is ideal for worktop plunge routing in hardwood or laminate, plus their dedicated GB30 guide bush.

Both UJK and Trend appear to make almost identical jigs, for which you'll need a ½in plunge router, plus a 50mm 12.7mm straight cutter and 30mm guide bush

Sinks & hobs

Inset sinks and hobs will usually come with a paper template for the aperture required in the worktop. You simply tape or glue this to the surface and follow the lines with a jigsaw, followed by a router to tidy up the cuts. With hardwood worktops, I prefer to draw the cut-out required, which allows me to visualise the exact opening more easily and adjust it sideways if necessary. If installing a laminate worktop you'll get a cleaner jigsaw cut with the board upside down, unless you use a down-cut blade.

Although the sawn edges won't be seen, it's always neater to use a router for a professional finish, with a guide clamp or batten for straight cuts. However, the correct jig ensures you'll get dead accurate straight cuts, with the advantage of neater corners too.

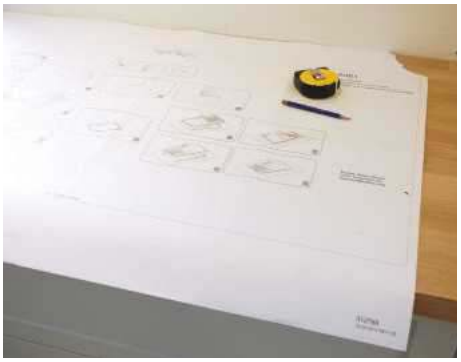
Worktop joints

It's arguably easier to make 90° joints in solid hardwood worktops than in laminate tops. You can true up an external sawn edge with a bench plane in an oak worktop, for example, though it's harder work with a laminate equivalent, which has a chipboard core. Here, a power planer tends to be more efficient than a hand plane as the carbide knives will not blunt nearly so rapidly as a tool steel blade. But achieving a dead square edge with a planer is far from easy. Run a router along a clamp or batten, though, and you'll get pretty accurate results.

Most kitchen worktop jigs include a straight slot, which is designed for routing a straight end with no risk of the cutter wandering off course. Again, this can be quite tricky to achieve using a circular saw on a laminate top, even with a really fine-toothed blade.

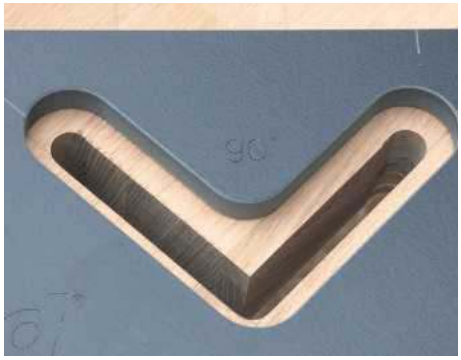
However, the problem with plastic laminate chipboard worktops is that front edges are usually rounded over, or postformed. This makes it almost impossible to get neat, 90° joints unless you have an appropriate routing jig. Along with a quality router bit and guide bush, you should achieve a professional finish every time, though. Whatever the material your worktop is made from, plunge cuts should not be more than 10mm at a time, preferably less.

I used a Trend Professional two-flute bit, which is ideal for worktop plunge routing in hardwood or laminate, plus their GB30 guide bush



Inset sinks and hobs will usually come with a paper template for the aperture required in the worktop

With hardwood worktops, I prefer to draw the cut-out required, which allows me to visualise the exact opening more easily and adjust it sideways if necessary



The correct jig ensures dead accurate straight cuts, with the advantage of neater corners too

Along with a quality router bit and guide bush, you should achieve a professional finish every time

Bolts & biscuits

Once you've cut matching joints in either hardwood or laminate chipboard, you obviously need to join them together tightly. The best method is to use worktop connector bolts, which sit in recesses routed underneath the top. A part-threaded steel bolt sits inside a channel linking circular cut-outs in each mating worktop. With standard connectors a spanner is used to tighten a nut that pulls the two edges up tight, with shaped washers spreading the load on the timber. Connector bolts are available in 150mm and 85mm lengths, the shorter ones generally used for 45° joints or where a joint is close to a sink or hob aperture. Three bolts are normally used in 610mm wide worktops. Joints are tightened from underneath once worktops are in situ, which can be awkward at the best of times. Much easier to use and faster are Zipbolts, which are tightened with a cordless drill fitted with a hex bit – see **www.axminster.co.uk**. The recesses required are the same size as those for conventional connectors. You don't actually need a jig for installing connector bolts, though this does speed up the process. Simply drill appropriate holes with a Forstner bit and cut a channel by hand or with a router.

To keep adjoining worktop surfaces aligned it's a good idea to use No.20 biscuits. Cut slots between bolt positions and glue the biscuits first, though don't use PVA adhesive if worktops are chipboard, then run beads of clear silicone along the edges (to prevent water penetration) before tightening the nuts. Clean up excess silicone from the surface and hopefully you'll have a perfect joint.

However, the problem with plastic laminate chipboard worktops is that front edges are usually rounded over, or postformed

Much easier to use and faster are Zipbolts, which are tightened with a cordless drill fitted with a hex bit

The recesses required are the same size as those for conventional connectors

You don't actually need a jig for installing connector bolts, though this does speed up the process

Cut slots between bolt positions and glue the biscuits first, though don't use PVA adhesive if worktops are chipboard

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USEFUL KIT/PRODUCT

TREND APERTURE & RADIUS JIG

If you need a jig specifically for routing apertures or adding curved corners to worktops, this product from Trend will do the job extremely well. Made from 12mm thick high pressure laminate (phenolic resin), it measures approximately 1,000 × 390mm. It's certainly substantial, weighing 4.6kg.

With one straight slot, maximum routing capacity here is about 840mm, more than enough for most standard width worktops, which tend to be around 610mm deep on common kitchen units. Anything wider than this and you simply fit a guide clamp across the surface and run the router against that.

The bulk of the jig consists mainly of slots for radiused corners, consisting of 40, 60, 80, 100, 150 and 250mm radii. There's also a 90° corner slot (for apertures), plus 50, 100 and 200mm radius outer curves only. Each curve is engraved with its size, though on one side of the jig only.

There's also a pair of circular cut-outs (35 and 26mm diameter) for routing holes in doors or carcass sides to suit standard cupboard hinges. Lastly, a 45° straight corner is included. Each slot has an etched sight line at either end (at 90° to each other), to help align the jig with pencil marks on the worktop. These allow for the offset created when using a guide bush and bit together. Sight lines appear on both sides of the jig and are used mainly for internal radii.

Locating pins

What makes most worktop jigs like this reliable are the tapered locating pins. Four are provided and fit through any of the 16 holes around the template. You push a pair of pins through the appropriate holes for your selected slot (external radii only). This enables you to locate the jig against the relevant edge of the worktop, the pins acting as stops. Holes are recessed, so the pin heads will sit flat with the jig, meaning there's nothing to obstruct the router base moving across the surface.

Line up the marks, cramp the jig and you're ready to rout. It's essential the jig is cramped securely, as a big router and guide bush could knock everything out of kilter, resulting in the cutter taking an unwanted step in the timber or laminate. As the jig sits across the worktop at 45° for most corners, I found it important to check positioning with a mitre or set square before cramping.

In use

Make a series of plunge cuts down through the worktop (no more than 10mm depth at a time) and allow the cutter to stop before removing the router. For sink or hob apertures you rout the corners first. Once cut all the way through, corner slots are joined by routing straight grooves between them. The process does take far longer than simply sawing an aperture with a jigsaw, but results should be pretty good.

With a couple of curved units in my new kitchen, the jig's 250mm radius was a pretty close match. Together with a new cutter it gave a really clean curve to both oak worktops, with very little sanding required.

Conclusion

It may be pricey, but this is an excellent jig for routing consistent curves and apertures. To avoid creating stepped cuts in the edge, always ensure you check with a mitre square when cramping at 45°, though.

You push a pair of pins through the appropriate holes for your selected slot (external radii only)

It's essential the jig is cramped securely, as a big router and guide bush could knock everything out of kilter

Make a series of plunge cuts down through the worktop and allow the cutter to stop before removing the router

With a couple of curved units in my new kitchen, the jig's 250mm radius was a pretty close match

SPECIFICATION

Corner angle: 90°
Slot length: 830mm
Radius curves: 40, 60, 80, 100, 150 & 250mm
External radius: 50, 100 & 200mm
End cut: 45°
Kitchen hinge recess: 26 & 35mm
Length: 1,000mm
Thickness: 12mm
Width: 390mm
Weight: 4.6kg

Typical price: £123.60
Web: www.trend-uk.com

THE VERDICT

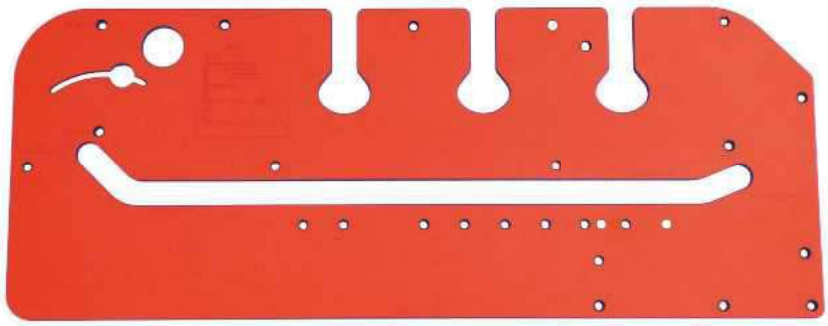
PROS
- Reliable, consistently accurate curves

CONS
- Routing an aperture can take ages

RATING: 4.5 out of **5**

USEFUL KIT/PRODUCT

UJK VARIABLE ANGLE WORKTOP JIG



If you're installing laminate worktops it's likely these will be postformed, which means front edges are already rounded. Unlike hardwood worktops (which can be rounded over after jointing), forming a 90° joint is a bit more complicated. This UJK jig makes the procedure easy, thankfully.

First, you need to establish whether the joint is left- or right-handed. Fortunately the instruction guide has clear diagrams, labelling adjacent worktops either male or female as appropriate. This is important, as depending on the joint you're forming, routing is carried out from either side of the jig. It sounds more complicated than it actually is, fortunately. The jig itself is inscribed on both sides and includes basic diagrams, so even without instructions all is not lost. Like the Trend jig it's 1,000 × 390mm in size, 12mm thick and made from phenolic resin, so it's extremely durable. Four tapered pins are provided for positioning. Postformed worktops up to 700mm wide can be jointed at 90°, while this reduces to a width of about 600mm if cutting at 45°. The worktop is routed either face down or face up, depending on whether it's a male or female edge you're working on.

Rough & finish cuts

Positioning the jig is straightforward, with either two or three tapered pins (male or female edge) inserted in holes along the front edge. A fourth pin is necessary for female cuts and is used in one of 10 holes according to matching the worktop width. These are marked from 250 up to 700mm.

It's vital that the jig is cramped adequately before routing and it's wise to do a practice run first on scrap material. The slots are a tad wider than guide bush diameter, meaning there's a bit of play. This is intentional, so you first make a series of stepped cuts right through the worktop by pulling the router towards you (slot edge marked 'ROUGH CUT'), working from left to right. Then, with the cutter set at full depth you make a final pass pushing the router away from you (slot edge marked 'FINISH CUT'). The difference between cuts is less than 1mm, but this is enough to create a completely clean, square edge. Once this has been cut, repeat the process on the mating worktop, remembering to reverse this regarding face side.

Out of square

Of course, not every kitchen has internal walls that are completely square, so there's a simple trick up UJK's sleeve. An optional variable angle insert can be fitted to the jig, enabling you to cut joints between 85 and 95°. It's adjusted via a bolt passing through a keyhole slot in the jig and costs just £16.

Bolts & hinges

Three cut-outs are provided for routing worktop connectors such as Zipbolts. These are straightforward to cut with exactly the same bit and guide bush set-up. If you're making your own doors or cupboard units, there's also a circular cut-out for routing standard 35mm hinge recesses, too.

When routing either bolt or hinge recesses, it's important to set your cutter depth so you don't inadvertently cut right through the material. Check the depth by making a cut on waste material first.

Conclusion

Although it's not necessary for hardwood worktops, this UJK jig is ideal for jointing laminate worktops precisely. Just remember that adjacent worktops need to be turned over when cutting.

It's vital that the jig is cramped adequately before routing and it's wise to do a practice run first on scrap material

Then, with the cutter set at full depth you make a final pass pushing the router away from you (slot edge marked 'FINISH CUT')

Three cut-outs are provided for routing worktop connectors such as Zipbolts

These are straightforward to cut with exactly the same bit and guide bush set-up

SPECIFICATION

- Phenolic resin jig covers all common cuts in kitchen worktop preparation
- Enables 45° and 90° male and female cuts
- Apertures for 65-150mm worktop connectors
- Peninsular joints, square and 45° and 22.5° angle cuts
- Hinge recesses and tap holes
- Optional Angle Adjustment Plate allows perfect out of square joints – 85° to 95° (sold separately)
- Supplied with full and comprehensive instructions and a pack of four aligning pins

Typical price: £94
Web: www.axminster.co.uk

THE VERDICT

PROS

- Perfect results for postformed worktops; easy to use

CONS

- Possible to get right-/left-hand components mixed up

RATING: 4.5 out of **5**

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USEFUL KIT/PRODUCT

DEWALT DWS5100 RIP GUIDE

When I tested DeWalt's DCS577 cordless saw back in the July issue, the optional rip guide or side fence was not available. Since then I've got my hands on this accessory to check how the tool performs in ripping mode. Although you can obviously run the saw against a guide clamp or batten for crosscutting or sheet material work, this is much more difficult when you need to rip sizeable timber such as joists down to size.

Made from lightweight aluminium, the guide consists of twin arms fixed to the fence itself. Folded and locked for storage, you slide and swivel the arms out, then lock them in place at 90° with a knob underneath. Like most circular saws, the arms locate in L-shaped slots on the magnesium baseplate and are secured with thumbscrews. Although these have springs to help retain them when using the saw without the fence fitted, I noticed that one had fallen out after a lengthy crosscutting session. Either remove these or tighten them down fully to avoid this happening. Perhaps buy a couple of spares just in case…

Both arms have metric graduations and these should be locked at identical measurements so that fence and blade are parallel. Maximum width capacity is a conservative 325mm, which is impressive, while the fence itself is almost 480mm in length. Its depth of 24mm means there's enough aluminium to run against your workpiece without it fouling on heavier timbers. Hard plastic caps at each end give some protection to the aluminium fence profile.

Faced with ripping down a quantity of 50mm softwood joists, the DeWalt saw coped admirably with the fence fitted

As I mentioned in the earlier test, the DCS577 saw is just as happy cutting sheet materials and worktops

In use

Faced with ripping down a quantity of 50mm softwood joists, the DeWalt saw coped admirably with the fence fitted. Don't rely entirely on the measurements shown along each arm, though they're a fairly good guide. Like any circular saw, it's best to make a small test cut first and check the finished width. As I mentioned in the earlier test, the DCS577 saw is just as happy cutting sheet materials and worktops. For narrower cuts the rip fence is easy to set up and use where you can't use a guide clamp.

Made from lightweight aluminium, the guide consists of twin arms fixed to the fence itself. Folded and locked for storage, you slide and swivel the arms out…

… then lock them in place at 90° with a knob underneath

Like most circular saws, the arms locate in L-shaped slots on the magnesium baseplate and are secured with thumbscrews

Both arms have metric graduations and these should be locked at identical measurements so that fence and blade are parallel

Conclusion

It's not a cheap accessory but you'll probably need this guide sooner or later for ripping if you buy the saw. It performs well enough and folds neatly when not required. And in case you were wondering, unfortunately the guide cannot currently be used with other DeWalt cordless saws.

SPECIFICATION

- 300mm rip capacity on left side for common rip cuts including stair treads and risers
- Up to 360mm rip capacity on right side for maximum width rips
- Light weight and durable aluminium construction
- Folds down to 485 × 76mm for easy storage
- Permanently laser-etched markings for fast and accurate setting

Typical price: £57.60
Web: www.dewalt.co.uk

THE VERDICT

PROS
- Lightweight but sturdy; folds for storage

CONS
- Thumbscrews can drop out of saw

RATING: 4 out of **5**

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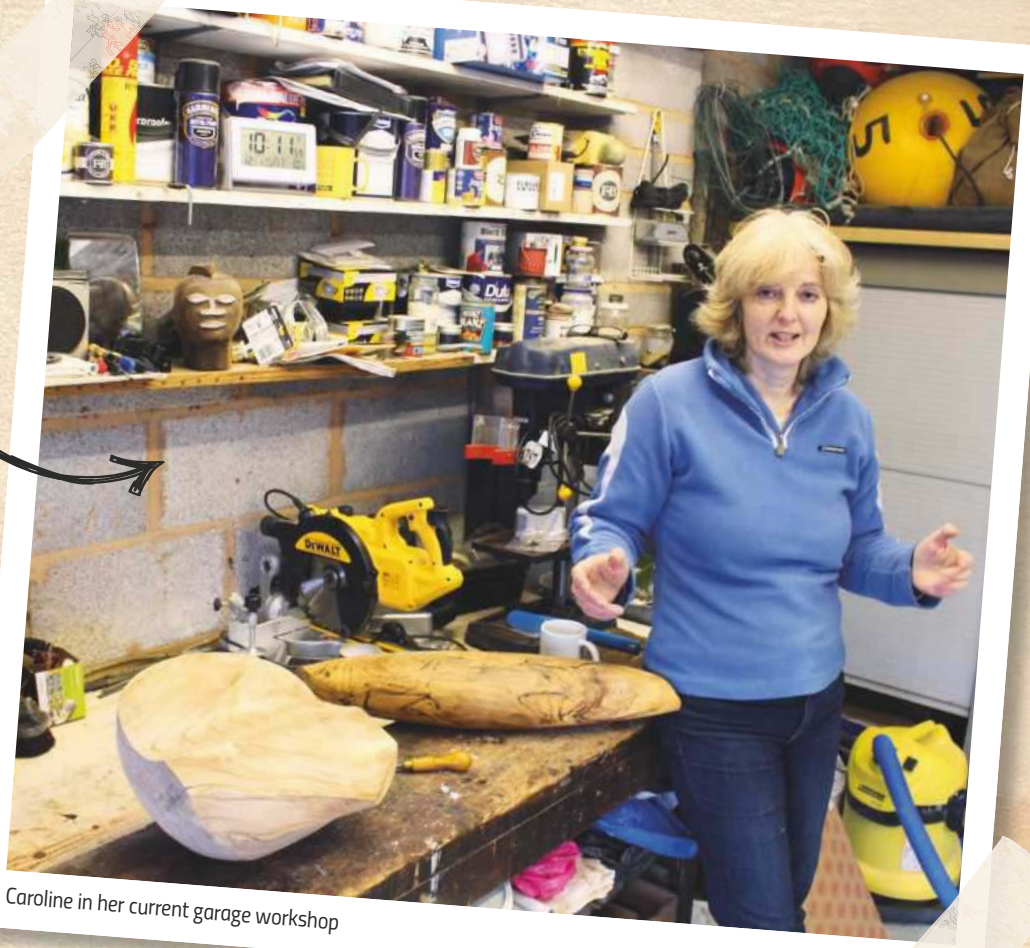
ME AND MY WORKSHOP

Caroline Arbon

While Devon-based artist, sculptor and furniture maker **Caroline Arbon** waits for a new workshop, she's making the most of her garage



Caroline in her current garage workshop

1. What is it – and where is it?
My workshop is currently part of our garage. I'm waiting for my new workshop, so at the moment it's a bit of a compromise.

2. What's the best thing about it?
It's quite spacious and has a nice flat floor. My old workshop was cobbled and I ended up with wobbly benches.

3. And what's the worst?
It's not yet my proper workshop – I'm getting a lifting hoist in the new one.

4. How important is it to you?
It's essential; life without a workshop is just a frustration – you have ideas and you can't make them.

5. What do you make in it?
Sculpture is my main thing, but bits of furniture when we need something out of the normal. At my previous house, I did quite a lot of repair work such as rebuilding window joints.

6. What is your favourite workshop tip?
Tidy up at the end of every day – sweep the floors and put the tools back. You see your work clean and uncluttered the next day, and it helps to spot where you need to make changes.

7. What's your best piece of kit?
My gouges; I can't work without them.

8. If your workshop caught fire, what one thing would you rescue?
The gouges – my grandad was a furniture maker and I wish I'd inherited his tools because they had such sentimental value.

9. What's your biggest workshop mistake?
Working on an uneven floor. I didn't realise a piece of restoration work wasn't square to the ground; I had to take it apart and rebuild it.

10. What's the nicest thing you've ever made?
My favourite item is a copy of a Jacob Epstein sculpture. I'd seen it exhibited a few times and just loved it.

11. And what's the worst?
A piece I thought was really good, but the removal men thought it looked like the back end of a horse.

12. What's the best lesson you've learned?
Keep the workshop tidy.

13. If you won the lottery, what would you buy for your workshop?
An even bigger workshop, with a stunning view and a cocktail bar!

NEXT MONTH

In the next issue, we head to Wales to find out more about the life and workshop of woodworker and reader, A.B. Allwood. We'd love to hear about your workshops too, so do feel free to send in a photo of your beloved workspace, and please answer the same questions as shown here – just email **tegan.foley@mytimemedia.com**

SHAKE THINGS UP

Les Thorne comes up with two different designs for a pair of salt and pepper shakers, both using oak and paduak: one with a toothpick holder and one without

In my experience as a woodturner, when making cruet sets, they tend to use a grinder or a similar type of mechanism. This project is a break from the norm for me and a trip down memory lane as I used to make cruet sets for the craft fair market. My father, who used to own a woodturning supplies shop, sold hundreds of these inserts every year and they are quite simple to make, meaning they were always popular.

I thought that I'd better add something to the project to give the whole thing extra value, and the addition of the stand fulfils that need perfectly. The cross member of the stand has the advantage of being turned from a flat piece of stock, which is something that many of you might not have tried before. It is an interesting technique and not as difficult as you might think. I wasn't sure whether or not to add the toothpick holder to the top, so I decided to make two design variations. The inserts are available from Turners Retreat and luckily are still relatively inexpensive.

One thing to remember is that any item that will be used and handled a lot requires the addition of a durable finish, and ideally one that can be wiped over with a cloth.

1 This project requires a surprising amount of timber. I decided to go with oak and padauk, which will give an interesting contrast of colours to the finished piece

2 First, mount the base, which is 135mm diameter and 30mm thick, on a short screw chuck and true it up using a bowl gouge. Working towards the left means any breakout of the grain will be removed when shaping the top

3 A recess is fine for small pieces such as this base. Transfer the diameter of the jaws to the bottom using a pair of dividers, ensuring only the left-hand point touches the wood

4 After removing the bulk of the waste with a gouge, clean up the recess using a skew as a scraper. I've ground this tool at an acute angle, which allows me to fit into this tight spot

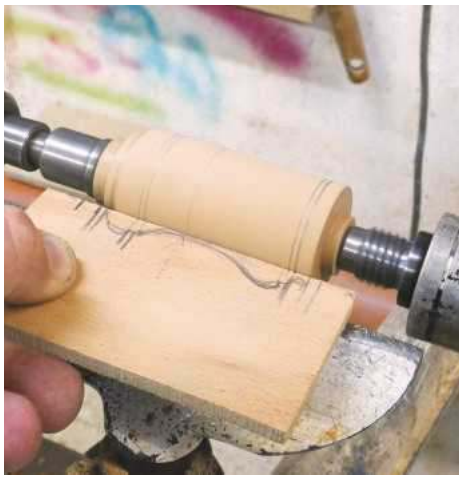
5 I'd normally attach a piece of baize to the bottom, but in this case I decided to leave it as plain wood, which will allow the whole thing to be cleaned after it's been used. Therefore, the bottom needs to be sanded to a fine finish

6 After remounting the recess in the chuck, drill a 25mm hole to accept the stem. A sawtooth machine bit will cut a clean hole when mounted in the tailstock chuck on the lathe

7 The majority of the shaping can be carried out using a bowl gouge, but having the toolrest close to the work means I can use my preferred tool. I find that the signature spindle gouge often gives a cleaner cut

8 Once the base is sanded, mount up the spindle blank, which is 90mm long × 40mm square. Make the whole thing round and cut an accurate 25mm spigot on the bottom

9 The relationship between the stem and base is very important and will make the whole thing look balanced. There will be a small fillet on the stem, which needs to be the same diameter as the circle on the base



10 Draw a rough idea of the shape you want to create onto a piece of scrap wood, then transfer the relevant sections onto the spinning wood

11 Whether to use the skew or the gouge depends on which one you find quicker, but in this case, I prefer to use the spindle gouge for the majority of the process. Keeping the bevel in contact with the surface affords you control and a great finish

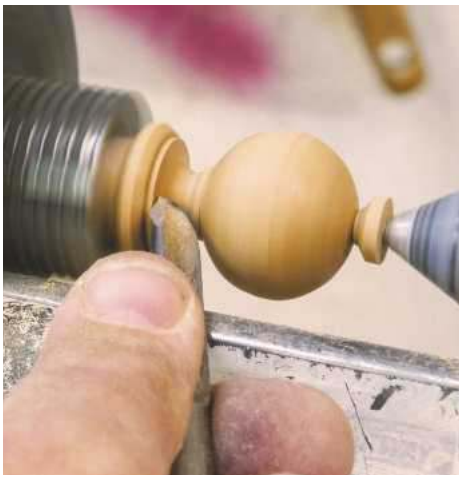
12 This is the top section for the toothpicks. Into a blank measuring 70mm long and 40mm square, drill a 45mm deep hole, 20mm in diameter, then mount it in the chuck once it's round. The mark left by the drill point can be removed using a small scraper

13 Clean up the top surface of this section with a gouge before remounting it back between centres. Turn the required tulip shape and sand to a fine finish

14 The last part of the stem is the alternative top section, which is made from a 55mm length of the same timber as before. Because you are going to hold the spigot in the chuck, finish the bottom bead as the chuck will be in the way later on

15 Grip the 20mm spigot in some pin jaws if you have them. If you do not have this type of jaws, alternatively, you could do all this between centres; it just means that the last bit would need to be sanded off the lathe

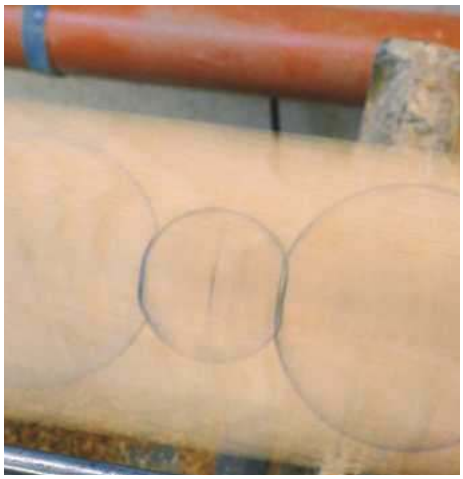
16 A common mistake that I see is when the turner does not allow enough waste at the tailstock. I like to leave at least 5mm if not 10mm; this means I don't end up with an unsightly hole in the top of the ball



17 The narrow width of the cove at the base of the ball requires you to use a smaller spindle gouge. Ensure to not allow the unsupported right-hand edge of the tool to catch the right-hand side of the cove

18 Gently turn the top of the ball away to leave a perfect curve with little or no grain tear-out. Then, once again, sand the finial to 400 grit, the same as for the rest of the project

19 Now comes the interesting bit. Draw a rough idea of the shape you want for the cross piece, which needs to be 180 × 70 × 15mm thick. You could quite easily cut this out by hand, or use a bandsaw or fretsaw, but where is the sense of adventure in that!



20 When the lathe is spinning, you can see the outline of the drawing quite clearly. Set the speed of the lathe quite high at around 2,000rpm; this will allow the tool to cut more cleanly

21 This was a bit of a learning curve for me and the best tool I found to clean up the ends was a 25mm rolled edge skew used with the long point doing the cutting. You can see I'm using a ring centre rather than a point, as this could act like a wedge on the thin section timber

22 The project should start to be taking shape by now. Once again, allow 10mm waste at each end. Keep the toolrest as close to the wood as possible; this will act as a guide to where the wood starts, and means that when the tool is over the rest, it will start cutting

23 The importance of keeping the bevel in contact is no more important than it is when cutting something like this. If you approached this with a scraper-type tool, then you'd find that the edges of the flat section would splinter very easily

24 I hadn't thought about how to sand the item when I first started this project. My first line of attack was to use a firm foam block and hold it against the spinning wood; this seemed to work quite well but did sand one side slightly more than the other

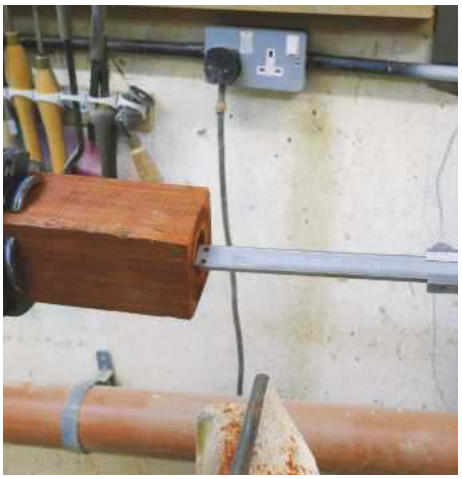
25 To overcome this you can put the lathe in reverse; this is a function that I don't use very often but does come in handy at times like this. If you don't have this available on your lathe, you'll need to do more by hand

26 When I tried a dry fit of the base, I realised that the cross member was too thick and therefore made the piece look cumbersome, so after drilling some 38mm holes to accept the salt/pepper pots, I decided to cut the timber to about 10mm thick on the bandsaw

27 An often overlooked function of a lathe is the fact it can be set up as a disc sander with the addition of an MDF disc, some double-sided tape and abrasive

28 Not only a disc sander but also a clamping device. Glue the base, stem and arms together. As you can see, I've not decided to commit to either of the two top designs at this stage

29 Here are the inserts newly delivered from Turners Retreat. These seem to be of a very high quality, which is very important when you've spent a lot of time and effort making the wooden parts



30 Take a piece of padauk measuring 70mm long and 40mm square and grip it straight in the chuck jaws; this will allow you to drill the depth of 49mm, which will leave the threaded part of clear section protruding out of the top

31 The shape I wanted required me to use a jam chuck, so I turned a piece of pine to 25mm, which would allow the hole to fit tightly over it

32 The initial stock removal should be carried out with tailstock support. The bead at the left-hand end needs to sit on top of the cross member. The skew is by far the best tool for working this shape down to a point

33 The jam chuck will grip the project enough to allow you to turn the point, then the whole project can be sanded. If it does come loose, put a piece of tissue into the hole before inserting it onto the pine

34 A durable finish is a necessity on a project like this and either an acrylic or melamine-based gloss lacquer is perfect. Give each section about three coats and cut back lightly between each one with 600 grit abrasive

35 Whenever I glue plastic, glass or ceramic onto or into wood, I never use a hard glue like epoxy. The mirror adhesive will allow a small amount of flexibility in case the wood shrinks or expands, and silicon will do a similar job

36 The completed salt and pepper pot sets in oak and paduak should look something like this

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ANYONE FOR NIBBLES?

Denis Whittaker uses pieces of scrap to make two alternative designs for tapas or 'nibbles' trays

A revamp of my daughter's kitchen included the fitting of 40mm thick oak work surfaces, which produced some pretty useful offcuts that she was kind enough to offer to me. Like so much donated timber, the pieces have been in my odds and ends collection for a few years and a recent clear-out got me wondering what to do with them. My wife came to the rescue (again!) by suggesting some kind of board from which to serve tapas or other small eats. I have since made seven, in both round and rectangular shapes, using the freebie oak and other timber offcuts. Here's how I went about it.

CIRCULAR TAPAS TRAY

The circular version came first but at 40mm the oak was too thick for purpose. I first cut a piece 320mm long × 165mm wide and using my bandsaw, sliced off two 16mm thick boards, which would finish at 15mm. After cleaning up and squaring off one edge of each, these were glued up to form a 320 × 320mm square. Obviously not everyone will have kitchen work surface to hand and the board will need to be made up by jointing whatever timber is chosen. In any event, following the undermentioned will result in success!

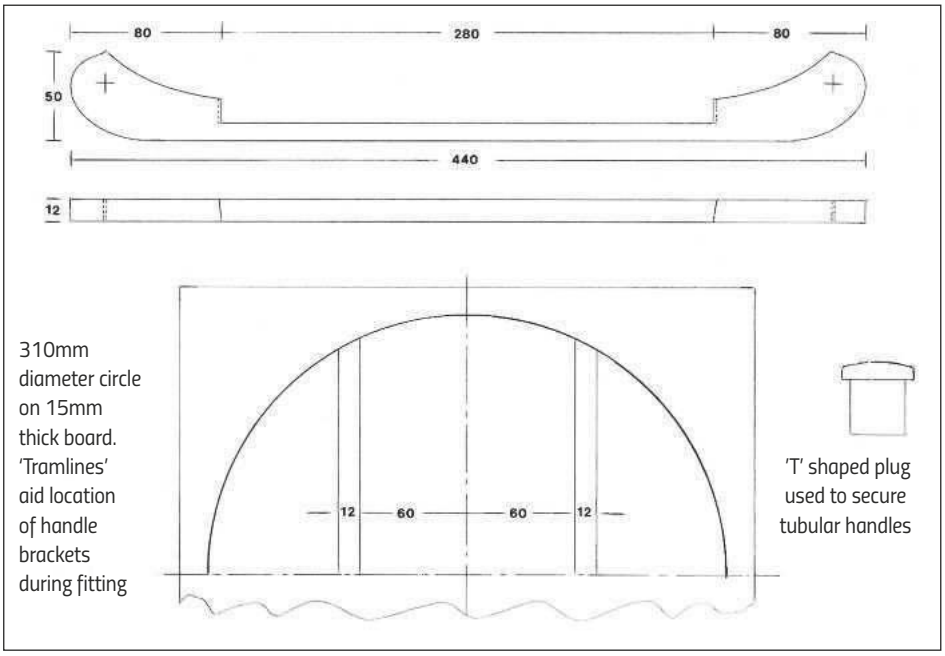

Fig.1 Circular tapas tray dimensions

Creating the circle

Clean off any glue residue, check for squareness and on the underside of the tray, mark a centreline and centre point. Draw two sets of 'tramlines' 12mm apart starting 60mm each side of the centreline. These are where the handle brackets will fit and are much easier to accurately draw from a square edge. Next, draw the 310mm diameter circle before trimming off the waste and sanding the edges to form a perfect circle.

Handle brackets

The handle brackets, which also serve to slightly raise the tray, come next. Using **Fig.1**, make a template using 6mm MDF or similar and drill small diameter holes at the centre of where the handles will fit. Check the template against the circular base and mark the outline and the centres for the handle holes onto a 25mm thick piece of timber. Cut to shape and sand to a good finish.

The holes for the handles are best drilled using a pillar drill since the holes must accurately line up once the handle brackets are fitted. The hole size will depend on the diameter of your chosen handle. For the one shown here I used 15mm diameter golden plated pipe, but chrome plated copper pipe works well and is readily available from plumbers' merchants. With the holes drilled, slice to produce a matching pair of 12mm thick handle brackets. After cleaning up, offer these up against the tray base using the parallel lines previously marked, and trim to provide a good fit. Lightly mark the board on each side of the handle brackets and round over up to these marks on both the top and underside to 'soften' the edge of the tray. The handle brackets can now be fitted using screws and glue.

There are many options for handles, but if using tubing, cut to length to fit just within the outside width of the handle brackets. Turned 'T' shaped plugs fit inside the tubing with the plug tops coming up snug against the outside of the handle brackets. These can then be fixed in place using epoxy resin.

OVAL TAPAS TRAY

An oval tray, using **Fig.2**, offers an interesting variation. The one shown is made from American white ash with sycamore handle brackets and African blackwood 'T' plugs.

Handle brackets

As before, use a template for the basic shape and for the handle brackets. The handle brackets are also slightly thinner at 6mm, which facilitates easier fitting around the gentle curves. Careful positioning of the clamps is needed to achieve perfectly equal spaces for the handles. A trial dry fitting establishes the correct placements. Make pencil marks where the handle brackets part company with the curve of the tray and with the cramps removed, round over the open ends of the tray up to the pencil marks before gluing the handle brackets in place. The central part of the handle brackets can now be finished flush to the tray.

Three coats of food-safe finishing oil, applied 24 hours apart and rubbed down between each coat, produces a pleasing finish – and, in this case, a smiley wife! Dishes are of course optional. The addition of small feet can also help to give the tray a lift and emphasise its elegant shape.

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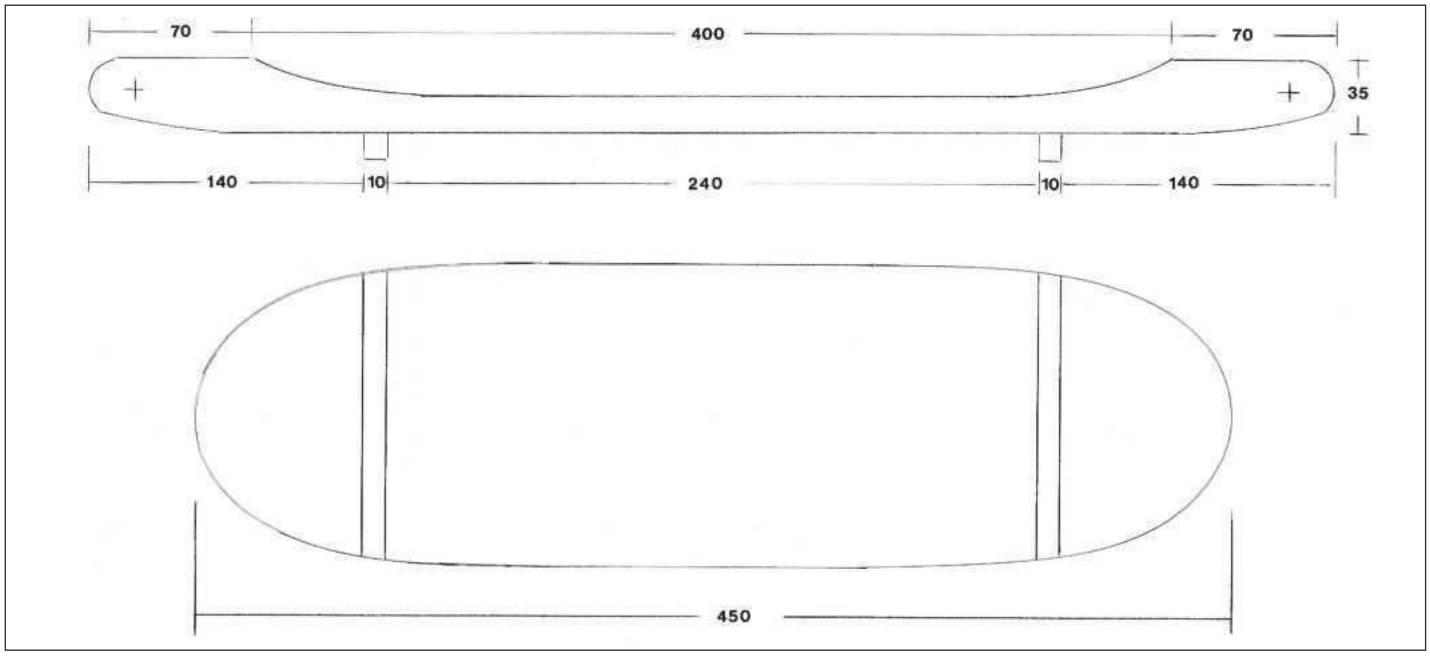
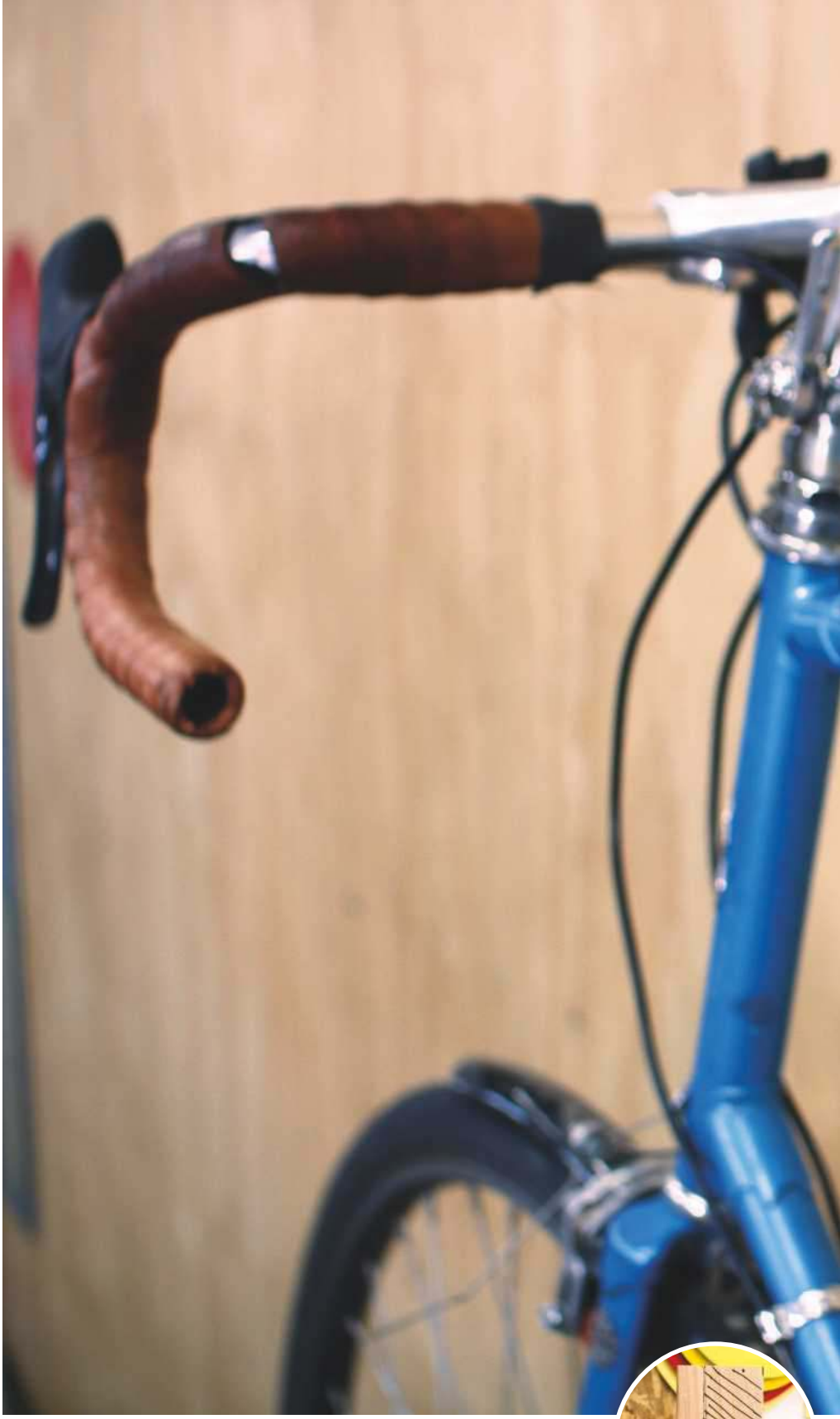


Fig.2 Oval tapas tray dimensions

HANDS FREE!

Johnny Wikk's clever and simple design for a bike rack makes use of wall space when floor space is at a premium



TOOLS & MATERIALS REQUIRED

- Bandsaw
- Hand saw
- Table saw
- Range of abrasives (bench top sander is easier for some parts, but not necessary)
- 12 × dowels
- Wood glue
- Finish of your choice
- Paint of your choice
- 2 × keyhole hangers
- Pocket hole jig, or similar tools that allow you to ensure the dowels are entering the wood in a straight orientation

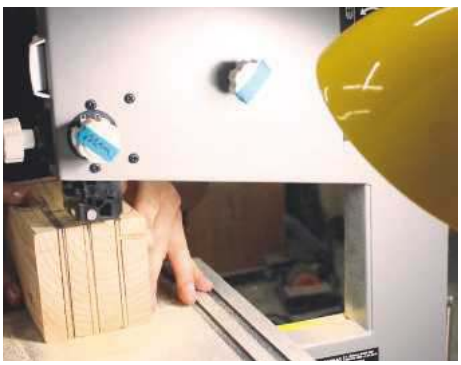
I needed a bike rack and came up with the design shown here. If you want to watch the YouTube video of the making in full, just see details at the end of the article.

This was a fun project and it works really well. I use it consistently. The process of working out how to make the hands was a learning curve and I'd even consider creating some coat hangers that are similar in design.

Making the hands

For the hands, you'll need two pieces of wood, each measuring 90 × 90 × 140mm (**photo 1**). After drawing out the shape, using a bandsaw (**photo 2**), proceed to cut the spaces between the fingers at intervals of around 5-6mm.

1 Two pieces of wood are required for each hand



2 Using the bandsaw to cut the spaces between the fingers

3 Cutting out the side profile of the hand

4 Cutting out the space around the thumb to reveal the palm

5 Marking out the rounded parts of the palm and fingers

6 Rounding details using a bandsaw

7 Checking everything is symmetrical

8 Abrasive wrapped around a thin piece of wood ensures the spaces between the fingers are uniform

9 Using a belt sander to further shape the hand

Next, cut out the side profile of the hand (**photo 3**), ensuring to measure your bike and making the area that holds the frame 3-6mm larger than the top bar of the bike frame. The next step, which I unfortunately missed in the video, is to cut away the remaining palm area (**photo 4**), but make sure you leave the thumb in place. This can be carried out using a hand saw.

Finishing

The next step is to sand all the components down to 220 grit and use your choice of finish – I chose a Poly finish. Use a thin piece of wood wrapped in abrasive to smooth the areas between the fingers and a rounded piece of wood to sand between the thumb and fingers (**photo 8**).

Making the wall mount

The wall mount I made used pieces of wood that I had lying around, so any offcuts will be suitable for this. The back panel measures 229mm wide × 229mm long × 125mm thick, and the horizontal piece is 150 × 292mm (**photo 10**). It's important to make sure the bike is far enough away from the wall that the pedals don't make contact and potentially cause scuffing. The 150mm plus the depth of the hand made my bike sit 2,033m off the wall. I used a pocket hole jig by Milescraft to ensure the dowel holes were being placed correctly (**photo 11**).

Mounting the hands

You need to mount the hands using a pocket hole jig and dowels as previously. Ensure to carry out some extra measurements here because the last thing you want is for the hands to be a little off and potentially ruin the whole project .

Hanging the rack

You want the mount to lay flush against the wall, so you therefore need to embed two keyhole hangers into the back piece: one on the top and one on the bottom (**photo 15**).

The last step is to add a little support to the rack, just for some security, then it's finished and ready for hanging.

10 Mounting the horizontal piece onto the back mounting piece

11 Once the pocket holes are drilled, place wood glue into the holes, insert the dowels and marry the two pieces up together

12 Drilling pocket holes in the hand...

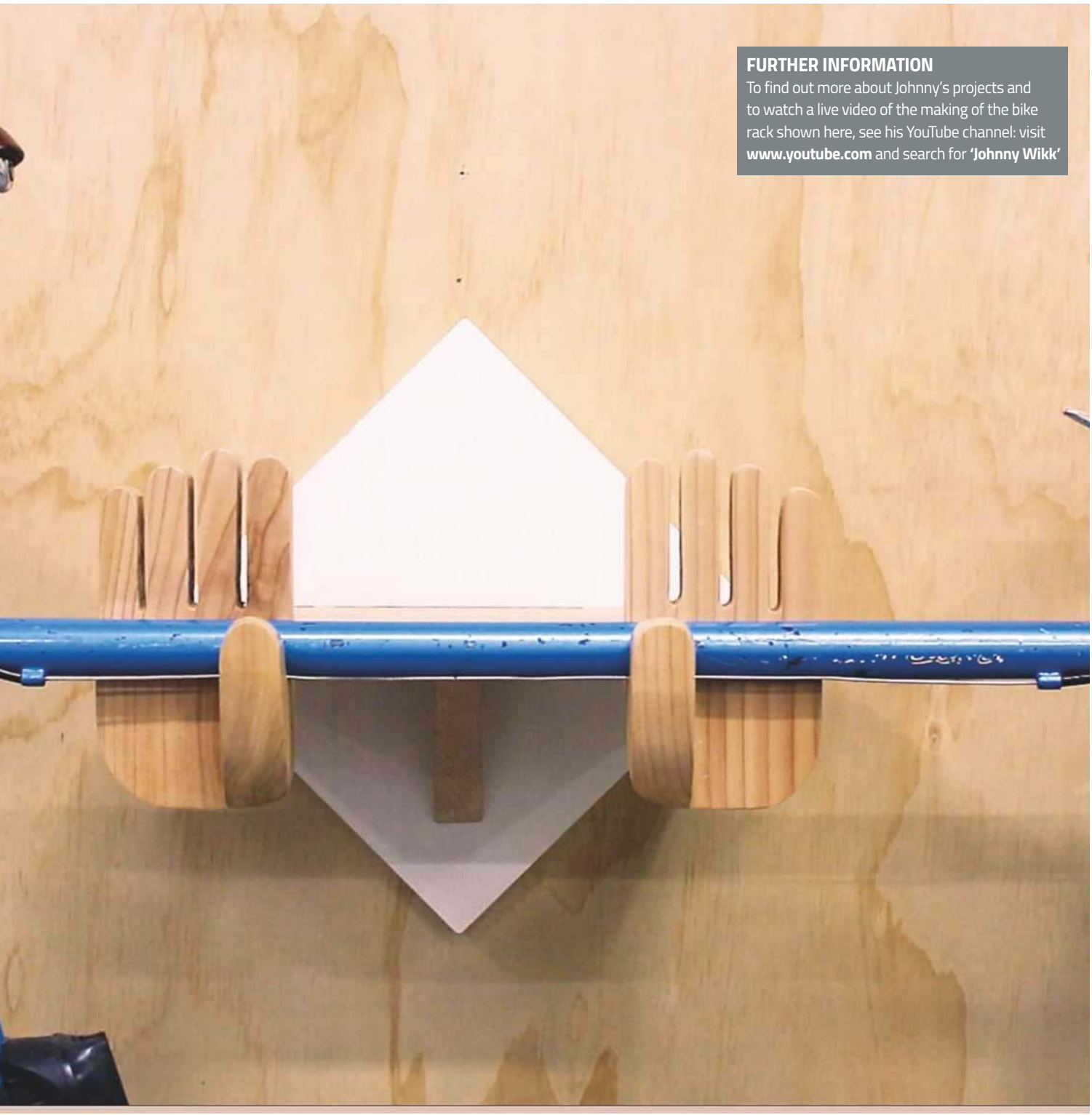
13 ... and in the mount

17 The completed bike rack in situ

14 Gluing everything up

15 Embedding two keyhole hangers into the back piece to ensure it lays flush against the wall

16 Adding some extra support



FURTHER INFORMATION

To find out more about Johnny's projects and to watch a live video of the making of the bike rack shown here, see his YouTube channel: visit **www.youtube.com** and search for **'Johnny Wikk'**

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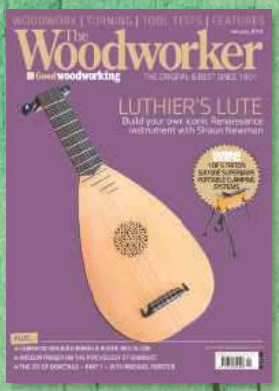

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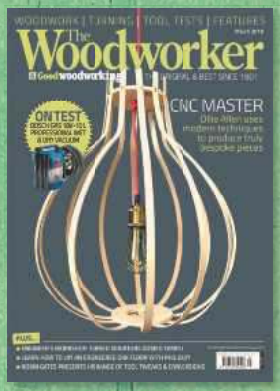

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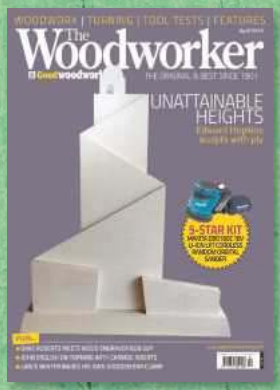

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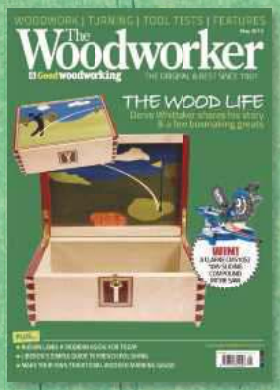

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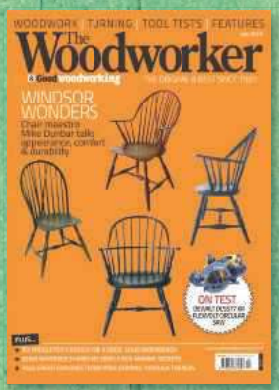

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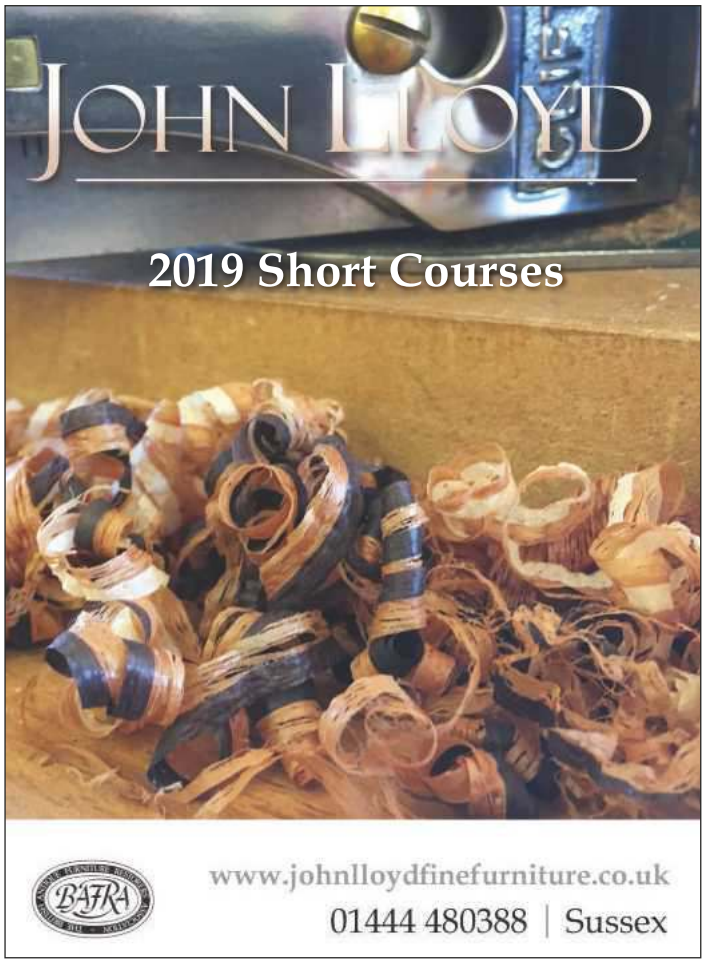

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FOR SALE

Record Power SS16V scrollsaw – purchased two months ago; now surplus as not large enough for project; has had minimal use, mounted on a baseboard; 75W motor; max cutting capacity – 50mm; throat depth – 406mm; £70 – collection only
07770 676 605 (Somerset)

Record Power DX5000 dust extractor – in good condition, rarely used – buyer to collect; £200
01245 633 818 (Essex)

WoodRat joiner – in excellent condition. Used but fully operational – comes with manual and DVD. See WoodRat website – £600 new; selling for £300 plus P&P
07906 296 058 (Manchester)

Free to collector – a number of beautifully bound copies of *The Woodworker* magazine covering certain years between the 1940s and 1970s. Merely seeking a good home for them – please call for details
01689 850 473 (Kent)

Hegner Multicut-1 scollsaw & bespoke metal stand – £230. Also, Rexon 8in drill press – £40
01993 779 363 (Oxon)

Axminster bandsaw with cabinet – £125; bench drill – £40; set of Flexcut carving chisels – £35; set of Narex carving chisels – £20
07904 433520 (Newark)

Multi 12in saw bench – single-phase, in good working order – clean machine & little used; £250
01371 870 759 (Essex)

Ashley Iles carving set – 17 chisels, top quality; £170. Also, Freud 1,000W router & shop cabinet, with steel top; £150 – buyer collects
01942 716 985 (Cheshire)

***Fine Woodworking* magazines** – 218 copies – issues 17-267 (incomplete), from 1979–2018. Sensible offers – collection only
0121 705 4437 (Birmingham)

Nova 3000 lathe – 17 × 12in cut, 8 speed, swivel head; £250 ONO
01747 871 402 (Salisbury)

Tormek T4 – nearly new, only used three or four times – genuine reason for sale; £200
01428 682 802 (Surrey)

Woodcut Bowlsaver Max3 with 1in toolpost stem. New, unused, in box; £300 – collect or P&P extra
01494 763 152 (Bucks)

Large range of Triton equipment including router table (new), router, jigsaw kit, saw bench extension table & biscuit joiner; £400
07815 103 021 (West Sussex)

Veritas bevel-up 22in plane jointer; £150; Veritas 15in low-angle jack plane; £150; 15 box handle chisels; £150
07904 433 520 (Newark)

Retired boatbuilder selling air-dried Burma teak – call for sizes; buyer to collect
01692 405 389 (Norfolk)

Sedgwick planer/thicknesser 12in single-phase – in full working order – collection only; £400
07931 296 863 (Cornwall)

Axminster dust extractor – 240V, single-phase – in good working order; £100
07931 296 863 (Cornwall)

WoodRat WR5 36in, excellent condition, inc usual kit plus plunge bar and mitre box, but not router; £300
01386 430 043 (Stratford upon Avon)

Jet spindle sander; £225; Plano glue press; £120; Bessey angle clamp WS6 (new); £35; Triton saw bench; £50
01386 430 043 (N. Cotswolds)

Tormek 1204 Super-Grind with extras – in very good condition. Extras include leather honing wheels, SP650 stone grader & cover; £120
01698 262 531 (Motherwell)

Startrite tilt arbor table saw – single-phase – in great condition; £400
07931 296 863 (Cornwall)

WANTED

Copies of *British Woodworking* magazine – issues 1 to 40
01635 34238 (Newbury)

Fence plus guide rails for a Wadkin 10in AG5 table saw
07724 386 061 (Wrexham)

Stanley No.1 plane & Stanley No.2 plane – one of each wanted by novice collector
01572 723 976 (Rutland)

Dust extraction spout for DeWalt 1150 planer/thicknesser
023 8089 8123 (Southampton)

Spiers/Norris/Henley planes wanted by private collector; any quote beaten. Ring Ron Lowe on
01530 834 581 (Leics)

Woodworking hand tools, especially old wood and metal planes, wanted by collector. Write to Mr B Jackson, 10 Ayr Close, Stamford PE9 2TS or call
01780 751 768 (Lincs)

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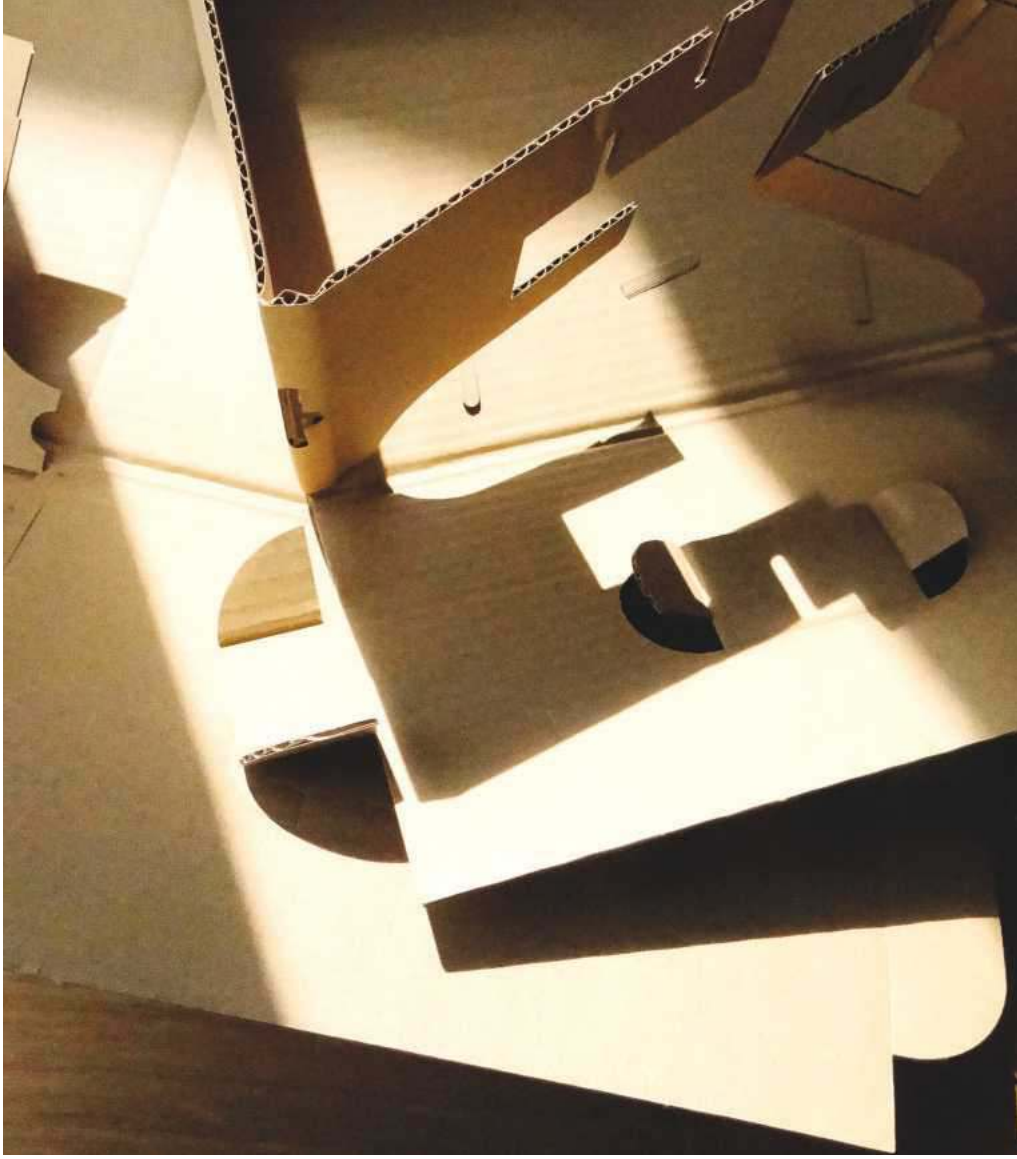
BOXING CLEVER

Origami woodwork (with ship-building)



I've just made loads of furniture. All in the last half hour. And wooden furniture at that (to stretch a point). Furniture: noun: the movable articles that are used to make a room or building suitable for living or working in, such as tables, chairs, or desks (Google) and boxes (me). I'm on the move, and I need boxes. Cardboard boxes are like hardcore. If you don't need them, they get in the way. If you need them and don't have them, you're stuffed (either way you're immobilised). It seems wrong that the very same article can be a complete nuisance one minute, and an utter necessity the next. (Now that would be a good use of technology: a website for the free trafficking of hardcore – though you might have to call it something else).

I bought flat-packed cardboard boxes from a supermarket. Faced with an unfamiliar constructional challenge, I had a tingle of apprehension (surely we've all had bad IKEA moments?). Then as I folded and unfolded this and that according to instructions, and got the hang of it, I saw how neat it was. How effective! How the handle directly carries the weight of the floor. All from a flap of cardboard stamped out by the mother and father of pastry cutters. Industrial origami. A real act of creation. Floppy stuff in two dimensions made rigid in three (the essence of corrugation – for the cardboard itself is little more than shapely paper). Something out of next-to-nothing, and with wit! Cardboard design is very clever. I'd like to meet the people who do it. There must be lots of Aha! moments as the creative spark hits home. I'd like to think that there's lots of laughter. Somebody prototypes a bottle crate that a check-out operative can flip open with one hand: how could you not laugh? Quieter triumphs as components are packed safely and separately in a box by folded shelving. I wonder too how many sighs show disappointment that by and large such brilliance is taken for granted. Not even noticed. Thrown away.

My biggest box

My 28 cardboard boxes are easily sturdy enough. This is reassuring. A collapsing box is a miserable affair. This was in my mind as I assembled the biggest cardboard box of my career. A box that under no immediate circumstances must collapse. A cardboard coffin. Patrick didn't want to make a fuss. He knew he'd be gone before long and he didn't want to disturb his wife, so he asked me (I am a furniture maker after all) if I'd deal with it and keep it in my loft until the day came. 'Of course,' I said, but I didn't have a loft.

When it arrived, I didn't want to leave it unexamined. I wanted to put it together now, so that I wouldn't be rushed later. I didn't find it easy to assemble. It involved plastic rivets and the holes didn't always align. I actually phoned the manufacturers at one point and said I didn't understand the instructions, and I'm reasonably good at instructions (and making things).

I completed this origami/woodwork/shipbuilding puzzle, but I had a few rivets left over. This is never good. Count your components first to see if it'll be you or them. Do you imagine that a disgruntled packer might occasionally add extra pieces just to confuse you? I, however, was not perplexed. I could see where they should be, I just couldn't get them in. Would their omission compromise structural integrity? Patrick was a big bloke. I decided, a little unhappily, that I could get away with it.

Hammerless horror

Here's a question: if you don't have a loft, but a cottage that you let out does: is it better to tell your tenants that there is a coffin in their loft, or hide it so they won't notice? What if they do notice? Is it not more Transylvanian to find a coffin in your loft (not knowing what might lie inside), than to know that an empty coffin is up there minding its own vacuous business, just maybe occasionally whispering about the transitory nature of life? Which box holds the more heebie-jeebies?

By the time Patrick died he had moved house. I took his coffin from the loft. It wouldn't go in the car. After the tussle I had putting it together, I wasn't going to take it apart, so it had to go on the roof. The weather was inclement. A soggy coffin doesn't bear thinking about, so I had to cover it. The tarpaulin wasn't quite big enough. Did it look bad like that? Like a see-through disguise? (When I was a student I worked for a while as a mortuary porter. I remember the blanket and pillow theatrically perched on the lid of the trolley of death, as if that would fool anyone).

Short of taping polythene all over it, it was the best I could do. I wondered if I'd be stopped along the way. 'Excuse me, Sir' etc.; or give passengers in overtaking cars (overtaking an undertaker) a sudden spasm of grief or horror. I dealt with that one. I didn't look. I stayed in the inside lane, and drove at a respectful speed. The box stayed put. The tarpaulin chattered in the wind. It didn't rain. I pulled into the undertaker's yard with a surge of gratitude, untied the box and took it off the car. 'Over to you', I said to the undertaker. Then I reached out my closed hand and dropped a few rivets into the palm of his.

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Don't miss woodworker and Rycotewood Furniture Centre tutor **Matt Estlea** demonstrating at these Axminster stores over the coming months. Matt will cover sharpening and dovetailing together with plane setup and use, as well as talking about his experience as an online personality.

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Warrington	14	September
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