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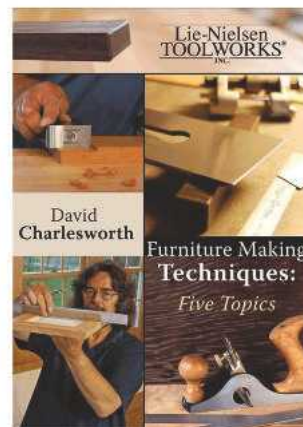
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David Charlesworth (1951–2022)

Bidding farewell to one of the most influential woodworking writers and teachers of the last century is never an easy thing to do, and especially so when that person happens to be David Charlesworth. David was incredibly well respected by all that knew him and owing to the popularity of his ground-breaking methodologies, was well revered the world over. The chances of a woodworker having not encountered David's work – in one way or another – is incredibly rare. In fact, someone will likely be using one of his workshop hacks as I write this!

Attention to detail

During my time working on *Furniture & Cabinetmaking* magazine, David was one of our key authors – in fact, he'd been a contributor since the very first issue. I recall being amazed by the sheer technicality, complexity and incredible attention to detail included in his articles, which, I have to admit, was somewhat lost on me. Maths is definitely not my strong point, so I was stumped by the numbers and formulas, methods for working out angles, not to mention the practical side of what he was describing, in such great detail. As such, I was very grateful that I was able to check things with him to ensure they were correct prior to going to press, as inevitably, there were always a few corrections required. I also remember being very aware of altering the text for fear of omitting something vital, or doing so and the whole thing making no sense! Luckily, however, David was very well written and his work required little sub-editing. I also had the pleasure of meeting him many times over the years at various woodworking events, which he attended around the UK as well as further afield. His demonstrations were always hugely popular and well attended, drawing a sizeable crowd – he'd certainly mastered the art of capturing people's attention.

A professional cabinetmaker by trade, David went on to produce a wide range of books and DVDs – in

conjunction with Lie-Nielsen Toolworks – as well as teaching furniture making courses from his workshop in Hartland, Devon. Regardless of medium, however, he was able to successfully communicate the attention to detail he'd become so synonymous with. Some woodworkers may never find the need to explore these subjects in such great depth, but this was a language David spoke fluently.



The 'Ruler Trick'

A sharpening technique David will forever be remembered for is his 'Ruler Trick', which aims to greatly reduce the set up time required to polish a hand plane's blade ready for use. Indeed, this useful tip is still used to this day by woodworkers in their millions.

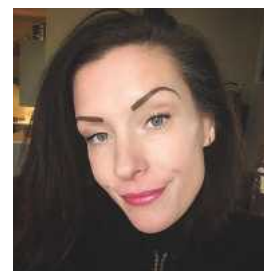
Rather than being led by the work of past masters, David endeavoured to discover new ways of doing things; this often saw him coming up with better methods, which he'd go on to share with his loyal international following.

The Woodworking Hall of Fame

As a result of an incident in 2016, which saw David being hospitalised due to respiratory problems, he was sadly no longer able to travel and teach abroad, although he still offered classes from his Devon workshop. Following a long illness, David sadly passed away on 22 May 2022, although the wealth of knowledge he leaves behind will endure and continue to be passed on. It's fair to say that David certainly has a place in the imaginary Woodworking Hall of Fame and his memory – and incredible body of work – will live on indefinitely.

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John Bullar looks at different types of woodworking adhesives aimed at the furniture maker and how their uses differ, as well as exploring application and holding methods for setting

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4,000 shingles later, new Community Shelter is finally ready & open

After years of planning, and taking just over five months to build, the brand-new Community Shelter is now open at Westonbirt, The National Arboretum. Sitting comfortably in its woodland setting, the shelter will provide a lasting, calm and protective space to community programme participants.

Designed 'by the community for the community', members of Westonbirt's Community Programme have been integral to the shelter's creation, from design through to final stages of the build. Over 600 people from under-represented audiences undertook a range of traditional green timber carpentry techniques, with participants' various skill levels carefully considered at all stages. These activities included steam-bending timber and producing hand-made shingles for the roof.

Andrew Smith, Director of Westonbirt, The National Arboretum, said: "Our new Community Shelter gives us a permanent, inspiring place here at Westonbirt for our community groups; a space where participants can feel at ease. We included future users of the community shelter through each stage of its creation, which helped build not only ownership, but the self-confidence, pride and aspirations of everyone involved. This is one of the many ways we're supporting positive mental health and wellbeing through an inclusive programme of inspiring activities."

The shelter's design and build are the result of a unique partnership between architects, Invisible Studio; timber structure specialists, Xylotek; hundreds of people from community groups; Forestry England volunteers and staff; in addition to the support of project funders.

Jude Shackell, leader for one of the participating community groups, the Apperley Centre, commented: "The real life, interesting, fun and perceived 'riskiness' of the shelter build has been hugely motivating for group members. While sometimes being a bit anxious about the tools, they've all had tremendous fun and learnt so much. They're moving on eager to learn more and try new things in all areas of their life."

An inspiring and 'armadillo-shaped' building, the shelter also demonstrates what can be achieved with locally sourced timber and materials. The timber used to build the shelter was sourced from oak and western red cedar



Photograph courtesy of Johnny Hathaway

Westonbirt Arboretum's brand-new Community Shelter

trees felled as part of the arboretum's sustainable woodland management. The timber was also milled on-site at Westonbirt Woodworks and the roof shingles produced by Westonbirt coppicers, community groups, volunteers and staff.

The Community Shelter project wouldn't have been possible if it weren't for the generous donations from local companies, third parties, trusts and grants, in addition to fund-raising by The Friends of Westonbirt Arboretum charity. With generous help from supporters, The Friends of Westonbirt Arboretum raised a magnificent £105,000 from a mix of external grant funding and membership donations, in addition

to significant legacy gifts left to Forestry England and investment funding, with special thanks in particular to Players of the Postcode Lottery, Herman Miller Cares Foundation, Cotswolds National Landscape, Kirby Laing Foundation, Gloucestershire County Council and Barnwood Trust.

The shelter, as part of the Community Programme, will continue to play a vital role at Westonbirt, to help connect a wider range of people with trees while at the same time improving their quality of life. This is far more than just a shelter in the woods. For more information on Westonbirt, The National Arboretum, see www.forestryengland.uk.



Photograph courtesy of Piers Taylor

The 'armadillo-shaped' building features steam-bent timber and hand-made roof shingles

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Liberon Decking Oil is available in a choice of Clear, Medium Oak and Teak finishes, in either 2.5 or 5l sizes. For further information on Liberon and the company's extensive woodcare product range, see www.liberon.co.uk.



MIRKA adds DEROS Edge Protector to its accessories range

Mirka UK is expanding its accessories range with the introduction of the Edge Protector for its DEROS 150mm sander. This new product has been designed to fit easily and will prolong the lifetime of the backing pad as it helps prevent damage to the pad's periphery. In addition, the Edge Protector safeguards adjacent surfaces as it avoids scuffing or damaging when the user is sanding into corners and edges.

Peter Sartain, National Sales Manager Industrial for Mirka UK, says: "We're constantly listening to feedback from our customers and are confident that the new Edge Protector will ensure the Mirka backing pad works better for longer."

For further information on Mirka UK, see www.mirka.com/uk/uk.



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FESTOOL CTC MINI/MIDI cordless compact dust extractors

Festool is expanding its 18V range with the launch of two new cordless compact dust extractors – the CTC MINI and CTC MIDI – both of which combine a mobile, dust-free and healthy working environment. Whether for mobile sawing, sanding or drilling, the compact on-site extractors fit perfectly into the Festool 18V system, making it even more mobile, independent and dust-free.

Say goodbye to dust and hello to good health – even without a socket

The CTC MINI/MIDI cordless compact dust extractors love dust and are perfectly coordinated to Festool cordless tools. In addition, the innovative Bluetooth autostart or practical remote control ensures ideal interaction between cordless tool and extractor. Both functions switch on the extractor automatically when the cordless tool starts up. The CTC MINI and CTC MIDI extractors excel with maximum suction power thanks to the 36V turbine with two 18V battery packs, meaning they rival the corded versions. As already stated, both models are ideal for a variety of mobile sawing, sanding or drilling applications.

Festool has equipped both with manual de-dusting, which means that using the manual main filter and filter bag de-dusting, the suction power can be quickly and easily recovered when the filter or filter bag is clogged. This significantly increases the maximum achievable fill level. The suction power can be adjusted to one of three levels according to application. Therefore, battery run time increases for the corresponding level. Both extractors are fitted with a smooth, flexible suction hose, which is ultra-robust and offers extremely flexible handling, while also gliding gently over every edge. Its conical geometry ensures improved suction power.

Trip-proof & independent

It doesn't get any more mobile than this: compact design, low weight and cordless. Both dust extractors are the new partners for every day, with no need for a socket. Regardless of the mobile sawing, sanding or drilling application at hand, their compact design and low weight make them the perfect partner for your day-to-day work. The large internal

hose holder makes it very easy to stow the suction hose, ensuring safe and clean transport. Combined with four battery packs and the new TCL 6 DUO rapid charger, work can be completed in most cordless applications without interruption. In the new energy sets, everything is conveniently packed and charged in a flash: battery packs and rapid charger in the Systainer³ – a perfect addition to the cordless extractors, as well as the new KSC 60 cordless sliding compound mitre saw.

There's energy sets for every application, and these are also compatible with Festool's 18V range. And, just as usual with Festool, everything is compatible: extractor, smooth suction hose, cordless tool and T-LOC Systainer connection. In short, the system offers all-round perfection. The CTC MINI and CTC MIDI, in addition to chargers and battery packs, are all fully covered by Festool SERVICE, giving you peace of mind for your day-to-day work.

The new CTC MINI/MIDI cordless compact dust extractors are available at specialist retailers, in a variety of options depending on container/filter bag capacities, dimensions and dust class. The CTC MIDI is available in dust class L and M. To find out more, visit www.festool.co.uk.



MAKITA puts the power in your hands

Makita UK has expanded its powerful XGT 40VMax range to offer professional users even more high-power products to aid their efficiency and productivity.

LS003G XGT 40VMax 305mm brushless slide compound mitre saw

The new LS003G has been designed for high precision and consistent smooth cutting and features an LED lamp that casts a helpful shadow of the saw blade onto the workpiece, acting as an accurate cutting line. The LS003G delivers an impressive no-load speed of up to 3,600rpm, has a maximum mitre range of 60° to 60° (L-R) and a bevel range of 48° to 48° (L-R). For maximum versatility, the rail forward design means that the rear of the machine can be placed close to a wall, and the sub-base supports a wide workpiece.

For improved safety, the LS003G also features Makita's Auto Start Wireless System, which automatically connects the LS003G to compatible dust extractors via Bluetooth so that when the machine is in use, the dust extractor automatically runs.



VC001GL & VC003GL XGT 40VMax L-class dust extractors

With Makita's powerful XGT 40VMax technology at their core, the VC001GL and VC003GL dust extractors deliver impressive output that's equivalent to corded alternatives.

Both machines can house two XGT 40VMax batteries so that when the first battery runs out of charge, the second one automatically kicks in to keep the machine running for longer. To further improve productivity, the VC001GL and VC003GL have large tank capacities of 8l and 15l respectively, which prevents the need to regularly down tools and empty the dust bag.

With numerous power options available, including 'high power' and 'quiet' modes, users can easily select the most appropriate setting for the application. The VC001GL and VC003GL can also be used for both wet and dry vacuum cleaning, providing professionals with a solution for every job. For wet vacuuming, the machines benefit from IPX-4 water-resistance rating.



CW001G XGT 40VMax cooler/warmer box

The perfect jobsite companion, the CW001G 20l cooler and warmer box has seven temperature settings ranging from -18°C up to 60°C, for year-round usability. It also features a bottle opener and USB output port for charging mobile devices. For ease of transportation, the CW001G has large 100mm castor wheels and a carry handle with grips for added comfort. The CW001G can be powered by four sources, so it can be easily added to any tradesperson's existing Makita collection. Users can choose from either XGT or LXT batteries, car DC utility socket, or an AC adaptor.

For further information on these and other tools from Makita, see www.makitauk.com.



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TREND T18S CORDLESS SANDERS

Phil Davy looks at the three sanders in Trend's new T18S cordless range

These days, most power tool manufacturers offer a sander or two of some description in their cordless line-up, assuming battery tools are part of their range. Trend have taken this a step further by launching no less than three different portable sanders, all based around their 18V T18S cordless platform. There's a choice of 1/2 detail models, which should cover most sanding tasks. Each tool is supplied bare, without battery, so you'll need to factor in a charger and a couple of power packs if you're new to the Trend system. Lithium-ion battery options are 2Ah, 4Ah or 5Ah, and will recharge fully in just over 30 minutes for the 2A version, while the 5Ah pack takes nearer 55 minutes.

Each tool is supplied with three sheets of Trend's long-lasting abrasives in the format to suit the particular pad: 80, 120 and 180 grit. There's 80 grit Zirconium and aluminium oxide in two finer grades, which is enough to get you started.



T18S/TSSB 1/2 sheet sander

T18S/TSSB 1/2 SHEET SANDER

Trend's T18S/TSSB is referred to as a 1/2 sander. In theory, this means you can get three pieces from a standard abrasive sheet, which measures 280 x 230mm. Its hook-and-loop pad has eight holes for dust extraction and

measures 185 x 95mm. Unlike the other two sanders tested, this one can be fitted with plain, unbacked paper. A pair of steel lever clips are opened out to release retaining clamps at each end of the pad, enabling you to tuck the ends of a sheet in snugly. This clamping system is strong, gripping the paper securely. The 5mm-thick rubber pad is stuck to a rigid metal platen, which in turn is screwed to a substantial plastic base. Everything seems sturdy enough,



Measuring 185 x 95mm, the 1/2 sheet sander's hook-and-loop pad features eight holes for dust extraction



The lever clips provide a strong clamping system, which grips the paper securely



Standard sheets or rolls of abrasive are unperforated, so a plastic plate is provided, which allows you to punch holes if necessary



The sander can be held either single-handed or gripped with both hands



With 2Ah battery fitted, the 1/4 sheet sander is the heaviest of the three, weighing 1.8kg overall



Easy to reach, the front on/off rocker switch is shrouded against dust ingress



The fabric dust bag fits snugly over the rear port



Tested on a variety of hard and softwoods, the T18S/TSSB performed well enough

with a particularly effective hook-and-loop grip to the pad.

Standard sheets or abrasive rolls are supplied unperforated, so Trend provide a plastic plate to allow you to punch the holes if necessary. Alternatively, this sander accepts mesh sanding sheets, which are anti-clogging and don't require extra holes to be made. Mesh can also be rinsed in water and re-used.

For comfort and to reduce vibration, the upper half of the plastic body is covered in ribbed, soft-grip rubber. There are several ways of holding this sander: single-handed using either the front or rear handles, or gripping it with both hands, which makes it straightforward to keep under control. With a 2Ah battery fitted, this is the heaviest of the three, weighing 1.8kg overall.

Easy to reach, the front on/off rocker switch is shrouded against dust ingress. With a fixed speed of 13,000opm and orbit diameter of 2mm, this tool is designed for finish sanding on larger flat or slightly convex surfaces, though it can cope with heavier jobs if necessary. The fabric dust bag fits snugly over the rear port, though if you prefer to use a vacuum extractor, then a stepped rubber adaptor is included.

In use

I tested the T18S/TSSB on a variety of hard and softwoods and it performed well enough.

Slightly noisier than the other two sanders, extraction was fine with the dust bag fitted, though for indoor use, a portable extractor makes more sense. Ear defenders are also recommended for continuous sanding.

A real benefit here is that you can choose almost any type of abrasive, though you

may need to cut unbacked paper to size before clamping.

T18S/DSB DETAIL SANDER

Designed for getting into corners of cabinets or drawers, louvres and close up against edges, Trend's T18S/DSB sander is another



T18S/DSB detail sander



With a base size of 150 × 102mm, the detail sander's 5mm-thick pad incorporates 11 holes for dust extraction



Like the other two models, once you've attached an abrasive sheet, slide a battery into the rear port and you're ready for action



The familiar shrouded rocker switch is located up front, within easy reach



An adaptor allows you to hook up a portable vacuum extractor



The tip of the detail sander allows you to get close into rebates, sand quirks or round edges...



... and it's also handy for cleaning up drawer corners or cabinet interiors

single-speed tool. Running at 11,000rpm, orbit diameter is 1.6mm, which is pretty fine. More compact than the 1/4" it accepts conventional hook-and-loop sheets. With a base size of 150 × 102mm, its 5mm-thick pad incorporates 11 holes for dust extraction.

An advantage with detail sander abrasives is that you don't necessarily have to change the entire sheet. Perforated across the centre, you can just replace the triangular front section or rear half, depending on what you're sanding. When working into corners, the tip often wears faster than the remainder of the sheet, so just re-attach this in a different orientation.

Like the other two models, once you've attached your abrasive, slide a battery into the rear port and you're ready for action. It's nicely compact, weighing 1.45kg with a 2Ah battery fitted, making this the lightest of the trio. Again, there's plenty of soft-grip rubber across the top and front of the body.

The familiar shrouded rocker switch is positioned up front, which is within easy reach. A fabric dust bag fits on to the rear dust port, while an adaptor allows you to hook up a portable vacuum extractor instead.

In use

This tool is ideal for removing paint or varnish on window sills, door frames and general sanding in confined spaces. The tip allows

you to get close into rebates, sand quirks or round edges, while it's handy for cleaning up drawer corners or cabinet interiors. Although it has a smaller pad size, larger surfaces such as worktops aren't beyond its scope.

T18S/ROS125B RANDOM ORBIT SANDER

The ROS125B is the only variable-speed sander from Trend, with a range from 6,000-12,000rpm. This is easy to adjust via a thumb dial towards the rear of the body, which is more convenient



T18S/ROS125B random orbital sander



The random orbital sander features variable speed, which is easy to adjust via a thumb dial towards the rear of the body



The T18S/ROS125B is well suited to preparing figured oak boards

for right-handers. With a pad diameter of 125mm and thickness of 8mm, there's eight holes for dust extraction. Four retaining screws mean this is straightforward to replace should it eventually wear out. Orbit diameter is 2mm, while overall weight is 1.55kg with battery fitted.

Again, for comfort, there's plenty of ribbed soft-grip rubber around the upper body. You attach the battery at the rear, making this fairly compact for a cordless tool. A rocker switch at the front activates the motor,



Three sheets of Trend's long-lasting abrasives, in the format to suit the particular pad, are supplied in 80, 120 and 180 grits



With a pad diameter of 125mm and thickness of 8mm, there's eight holes for dust extraction



Variable speed is a real advantage on delicate surfaces such as veneers

and at its slowest setting the tool runs whisper-quiet. A fabric dust bag is supplied as standard, plus rubber adaptor for attaching an extractor hose.

In use

A tad quieter than the other two, this sander is a cinch to control. It's capable of fairly coarse sanding at full pelt, or finer work if you reduce the speed. Sanding veneered MDF resulted in an excellent finish, while equally at home



A rubber adaptor allows you to attach an extractor hose, as pictured

stripping painted softwood or preparing figured oak boards.

Conclusion

All three sanders are priced the same and represent good value, so your choice depends on what sort of work you expect to be doing. If you envisage much vertical sanding, then a 2Ah battery is going to be less tiring than a larger pack, irrespective of model.

In terms of buying abrasives, the $\frac{1}{2}$ sander is arguably the cheapest to run, as you're not restricted to specific hook-and-loop sheets. A decent power tool for sanding larger areas, you can swap hand positions during those long sessions.

Probably the most versatile of the three is the random orbit model, which guarantees no swirls on the surface. Its variable speed is a real advantage on delicate materials such as veneers, or even for de-nibbing between coats of lacquer or varnish, though you'll struggle to find hook-and-loop abrasive finer than 240 grit. It's also handy for sanding filler on internal walls.

For outdoor renovation work the detail sander may be a better choice, especially if you have timber windows or door frames to strip prior to refinishing. As always, shop around to find the best deal, and don't forget to factor in the cost of a Trend charger and batteries. ✕

SPECIFICATION

Typical prices: All three models – TSSB, DSB and ROS125B – £79.97 each

Web: www.trend-uk.com

THE VERDICT

PROS

T18S/TSSB $\frac{1}{2}$

- Choice of hook-and-loop or unbacked abrasives

T18S/DSB detail sander

- Hook-and-loop abrasives; dust-shrouded rocker switch

T18S/ROS125B random orbital sander

- Variable speed sanding

CONS

T18S/TSSB $\frac{1}{2}$

- Single speed

T18S/DSB detail sander

- Single speed

T18S/ROS125B random orbital sander

- Battery is extra

RATING: PERFORMANCE

T18S/TSSB $\frac{1}{2}$ – 4

T18S/DSB detail sander – 4.5

T18S/ROS125B random orbital sander – 5

RATING: VALUE

T18S/TSSB $\frac{1}{2}$ – 4.5

T18S/DSB detail sander – 4.5

T18S/ROS125B random orbital sander – 5

UJK MULTIFUNCTION SQUARES

Phil Davy tries out two new workshop aids

From basic marking out of timber to checking fences and blades on machinery, a reliable square is another vital workshop tool. Not all squares are created equal, however, as this interesting matched pair from UJK demonstrate.

Instead of a traditional blade and stock, each one is essentially a slotted equilateral triangle. A pair of powerful, rare-earth magnets on both 90° 'arms' allow you to attach squares to cast-iron machinery tables, which is perfect for checking fence accuracy.

You can also fit a steel bar, which is used to register the tool against a workpiece. Two 25 x 4mm bars are included and can be set to overhang the face of each square. These are also useful if you want to prevent magnets deflecting a blade when checking a bandsaw table, for example.

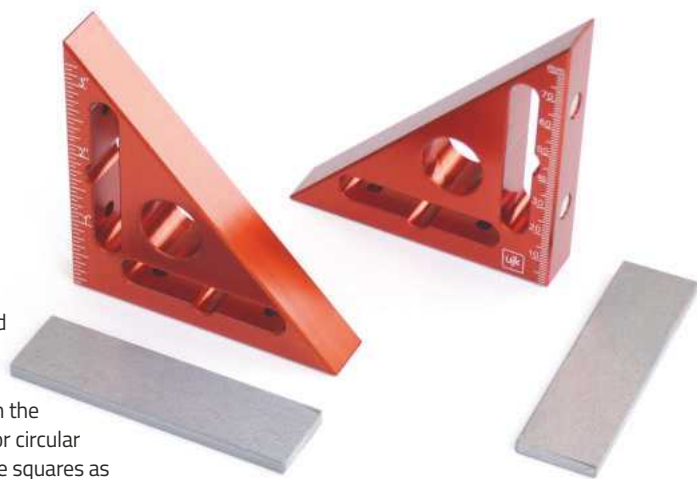
Made from anodised aluminium, each square is quite chunky at 18mm thick. Each arm is 90mm long, while one face has etched metric graduations, the other imperial – handy when setting cutter height on a router table or similar.

The hypotenuse is unmagnetised and can be used for marking out 45° mitres, or adjusting fences. A 20mm diameter hole in the centre of each tool is designed for circular bench dogs, so you can use these squares as reference stops on a suitably-drilled bench top.

So why two squares? They're intended as cramping aids when assembling 90° joints, frames or corners, so for this task two's definitely better than one. A pair of slots in each square accept narrow UJK fence cramps, though I was unable to check these out. I made do with a couple of mini spring cramps, which did the job, though probably not quite as well as dedicated ones.

Conclusion

Although specialist tools, these compact squares are surprisingly versatile. Setting up machines, marking out small components, gluing up boxes – I'm sure that any woodworker buying this pair will find a plethora of uses for them. The clue's in the name, I guess.



SPECIFICATION

Typical price: £24.88

Web: www.axminstertools.com

THE VERDICT

PROS

- Accurate squares with a multitude of uses

CONS

- You may need UJK cramps for corner assembly

RATING:

PERFORMANCE: 5 OUT OF 5

VALUE: 4 OUT OF 5



A pair of rare-earth magnets on both 90° 'arms' allow you to attach squares to cast-iron machinery tables



The bars are also useful if you want to prevent magnets deflecting a blade when checking a bandsaw table



The hypotenuse is unmagnetised and can be used for marking out 45° mitres, or adjusting fences



A couple of mini spring cramps do the job, though probably not quite as well as dedicated ones

SHINWA H-201C STEEL RULE

An accurate steel rule is an essential item for many woodworkers, and if properly cared for, a decent one will last a lifetime. My trusty Rabone Chesterman rule is 50-years-old and almost as good as the day it was bought. Japanese company Shinwa make some of



With a satin, non-reflective finish, graduations are clearly etched, making it easy to read

the best measuring tools available and they don't cost a fortune, either. Among them is this simple, 300mm version. Made from hardened stainless steel, the blade is 25mm wide and 1mm thick. With a satin, non-reflective finish, graduations are clearly etched, which makes it easy to read. It's marked in metric on one side – millimetres and half mm – and imperial on the other – down to 64ths and 50ths of an inch along opposing edges.

A hole at one end means you can store the tool on a hook, rather than leaving it lying on the bench. If you'd prefer another length, Workshop Heaven stock 150 and 600mm rules as well as narrower, flexible alternatives.

Conclusion

This is a top quality tool, especially handy if your eyesight isn't what it used to be!



And for those who need to know, Shinwa tools conform to Japanese Industrial Standards – JIS – so there's no doubting their precision and reliability. ✕

SPECIFICATION

Typical price: £11.80

Web: www.workshopheaven.com

THE VERDICT

PROS

- Metric and imperial; easy to read

CONS

- Don't let anyone borrow it!

RATING:

PERFORMANCE: 5 OUT OF 5

VALUE: 5 OUT OF 5

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WOODFOX MINI POCKET-HOLE JIG



If you want a pocket-hole jig for the occasional project, the **WoodFox** is a good option to consider

Pocket-hole joinery is a fast way to build carcasses, framework or jigs for the workshop. Whether using solid timber or sheet materials, so long as adjoining edges are cut exactly at 90°, you can't really go far wrong. You need a jig for drilling the pocket -holes, plus a unique stepped drill bit and screwdriver bit. If you're new to the technique, then this kit from WoodFox is a good way to get started, though you'll also need a suitable clamp and cordless drill/driver.

The jig is supplied in a plastic storage box with a 10mm drill bit (hex shank), depth collar and hex key, square-tip screwdriver bit and a selection of zinc-plated screws. These vary from 25-65mm, which means you can

try a few sizes before ordering more. No information is provided as to which length screw suits a given timber thickness, so it's somewhat a case of trial and error. Screw threads are coarse, so therefore better suited to softwood and MDF, although they can also be used with hardwoods.

Setting up

The jig is made from high-density plastic and consists of an upper drilling block with two hardened steel bushes. Built-in magnets allow this to sit firmly in a baseplate, which you adjust for material thickness. This is necessary in order to set drilling depth before cramping to the workpiece. Adjustment is a cinch as you just slide the upper block until the timber is



Built-in magnets enable the upper drilling block to sit firmly in a baseplate, which is adjusted to suit material thickness



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



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



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



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



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

sandwiched against a plastic end stop. The stop protrudes below the jig for this function, but can be reversed to sit above it – more on that later. Scales beneath the plate mean you can read off the thickness, though you'll need good light to see the graduations. Oddly, there's both metric and imperial graduations, but when you come to match up location arrows on the jig sides – for jig positioning – it's imperial only.

Drill depth

Correct hole depth is set by laying the drill bit in a channel on the underside of the baseplate, then locking the stop collar with the hex key. Once that's done, you're almost ready to drill. Scales along each side of the upper block allow you to then position the jig for drilling. A 'V' symbol on the end stop indicates which side to use – they're slightly different – depending on the drilling task. The end stop is simply reversed for drilling corner joints, for example.

I found it easy to get both side scales mixed up, which allows for the end stop thickness when drilling – rather like the zero hook on a tape measure. Once you've got the hang of things it makes sense, though it's best to experiment on offcuts first. Ideally, it'd help to identify one side with a label or paint to avoid confusion next time around. The drilling bushes are spaced at $\frac{1}{8}$ in centres, making them perfect when working with 50 x 25mm – 2 x 1in – PAR softwood. Elongated slots in the baseplate mean you can easily position the jig against a pencil line, should you want accurate spacing across a wider board.

Drilling into hardwood, softwood and MDF is straightforward, though don't forget to use a clamp. Some pricier pocket-hole jigs have one built-in to anchor workpiece and jig together, though a standard quick-grip clamp



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



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



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



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

will suffice here. Once holes are drilled, you're ready to swap to the screwdriver bit and assemble the joint. Ideally you'll need a face clamp when jointing same thickness components, such as framework – perhaps WoodFox could look at offering this as an optional accessory?

Conclusion

Instructions are confusing and peter out once you've set the jig and drilling depth. There's nothing on actual jig positioning or using a clamp, so it's really a case of experimenting on offcuts. Also, you're not able to store the drill bit in the box once the depth collar is fitted, which is slightly irritating.

If you want a pocket-hole jig for the occasional project, then the WoodFox is reasonable value. Initially frustrating to set up, once you've got the hang of it the system is easy to use and also convenient. However, it makes more economical sense to just buy the jig, drill bit and screwdriver bit. Without screws, the package will set you back around £21, so with this kit you're paying £15 more for a storage box and 50 screws. If you need them, packs of plastic plugs to fill the holes are available in five different colours. ✕

SPECIFICATION

Kit contents:

- Twin jig with base; 1/8in drill bit; 150mm driver bit; depth stop collar; hex key; 50 x assorted screws; full instructions; fitted storage case

Typical price: £33.35

Web: www.quality-woodworking-tools.com

THE VERDICT

PROS

- Quick to adjust for different thicknesses; easy to use once you've got the hang of it

CONS

- Side scales easy to mix up; no face clamp option available

RATING: 3.5 OUT OF 5

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MANUFACTURER: Laserliner

D&M GUIDE PRICE: £119.95 (inc VAT)

This compact, inexpensive video inspection system from Laserliner allows easy visual inspection of hard-to-reach locations such as pipework, suspended ceilings and vehicles. Six powerful LEDs on the waterproof camera unit, adjustable in 10 settings, ensure effective illumination of the object during use.

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FEATURES

- Effective problem localisation behind or in objects, walls, pipes and cavities
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NEW



MIRKA® DEOS 343CV IS PERFECT SIZE FOR HARD-TO-REACH AREAS

MANUFACTURER: Mirka®

D&M GUIDE PRICE: See our website

Mirka® is spearheading sanding innovation in 2022 with the addition of the new DEOS 343CV sander to its DEOS product family. The tool has been designed to handle multiple applications, ranging from detail sanding to furniture and window frames, while the tool's 75 x 100mm pad allows easy access to hard-to-reach areas.

The Mirka® DEOS 343CV has been developed by the R&D team in Jeppo, Finland, with the user in mind. Its low profile allows the tool to gain closer access to the surface, making it easier to control. The lightweight ergonomic design provides the user with a comfortable grip that allows the tool to be used for extended periods, while also making it easy to move from job to job. Even though the Mirka® DEOS 343CV is a compact direct electrical orbital sander, the brushless motor provides the power that enables it to perform at the same level as larger members of the DEOS family.

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WINDS OF CHANGE



Peter Dunsmore makes an attractive garden windmill using standard timbers and recycled bicycle wheel hubs for the pivots

This attractive garden windmill will make a feature in any garden space and could be built over the course of a few weekends. To aid construction, I've used standard timber from a local builders'

merchant as far as possible, plus various offcuts from the workshop scrap pile. I've endeavoured to keep construction as simple as possible, but in order for a project such as this to work properly, care must be taken throughout assembly and,

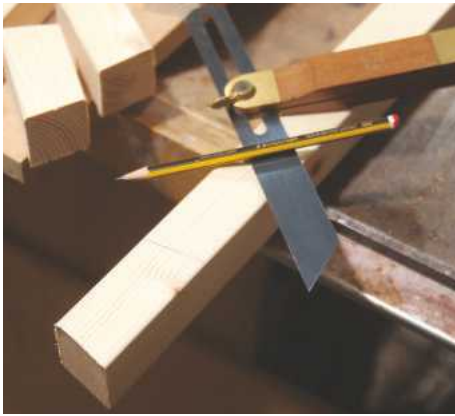
in addition, the three revolving parts must turn freely. One of the most efficient ways is to use the hubs from old bicycle wheels. Ideally, you need two rear wheel hubs and one from a front wheel for the rear guiding



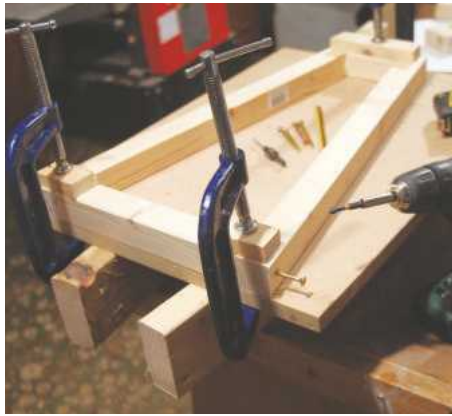
CUTTING LIST

The following is a list of standard-sized timber, which can be readily sourced from timber yards and should provide sufficient material for the majority of the project

- **Base frame:** 2 @ 2.4m × 38 × 38
- **Shiplap covering:** 4 @ 1.5m × 125 × 20
- **Head:** 1 @ 1.5m × 145 × 20
- **Sail spars:** 1 @ 2.1m × 32 × 32
- **Sails including rear sail feathers:** 5 @ 2.4m × 38 × 4
- **Rear sail support arms:** 1 @ 0.9m × 38 × 8
- **Rear sail:** 1 @ 2.4m × 9mm diameter dowel
- 12mm plywood for the head base and 6mm plywood for roof and sail tips
- 3 × bicycle wheel hubs



1 Set a sliding bevel for the angles



2 Outline frame dimensions onto a piece of board



3 Ensure all lower rails line up with one another

sail. These can be greased and adjusted to give first class results.

Although hubs can be purchased from cycle shops, I looked on a well known online auction site and picked up five for £5 plus postage, which I thought was a bargain. The local recycling centre is also a good source of rusty bikes and buckled wheels. The main body comprises a sturdy wooden frame covered in shiplap or featherboard cladding. A floor built into this part leaves plenty of space for some sand or bricks, which will weigh down the windmill, and coach screws on the underside level the project as well as keeping the timber elevated off wet ground.

A point worth mentioning at the outset is that hubs come in varying lengths and designs and some adjustment will obviously be required during construction. Similarly, timber merchants may stock different dimensioned timbers as standard, so this should be considered

as construction progresses and a little tweaking here and there may be required.

Fig.1 & 2 below provide overall dimensions and there's a degree of flexibility in the making, depending on the timber sourced. It's also an ideal opportunity to use up some left over plywoods and timbers from odd jobs. The end result is well worth the effort, so let's get started.

The main body

I made up the frame using 38mm square timber from B&Q, but anything of similar section would be just as suitable (**Fig.1**) – you just have to ensure it's strong (**photo 1**). As an aid to assembly, I found it useful to draw an outline of the frame onto a piece of MDF or similar (**photo 2**), then clamp the frame before screwing the timbers together. Remember that screws will also be fitted at right angles when joining the frames;

the pilot holes need to be offset slightly to account for this. Screw two of the side frames together before cutting or planing a bevel along the top edge; this will provide a flat surface onto which a plywood platform will be later placed to support the hub. These two frames can then be joined together using the four remaining rails, which completes the main frame.

There's a few points worth mentioning here: the lower rails don't require bevelling so long as they're in line with one another (**photo 3**). The lower base slats will be screwed onto these lower rails. Drill pilot holes into the end of the posts for coach screws, but locate these towards the inner corners; this will ensure you avoid the screws already fitted in place (**photo 4**). Once assembled, treat the frame to a couple of coats of clear wood preservative to prevent the assembly rotting in future. While treating

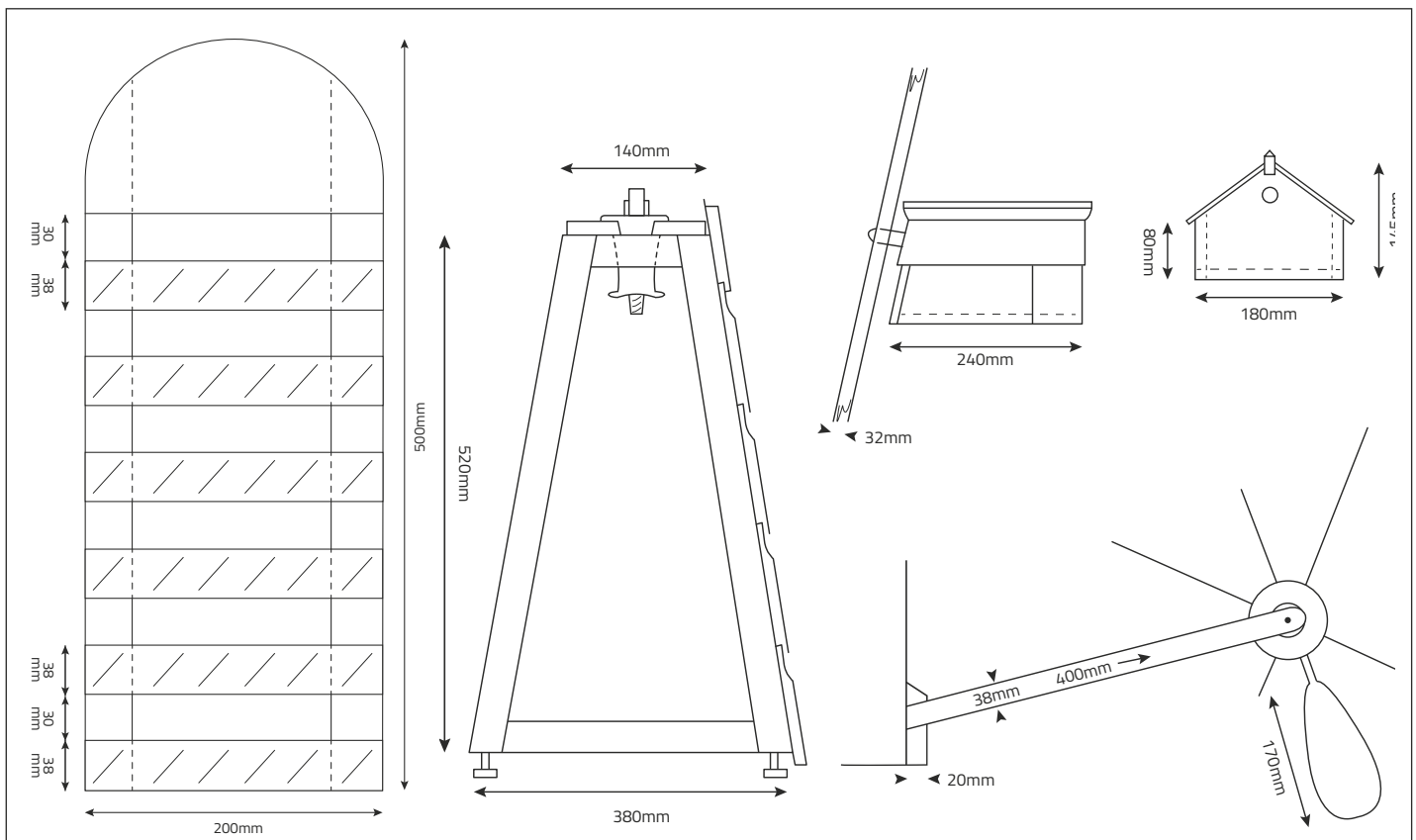


Fig.1 Windmill frame dimensions

Fig.2 Dimensions for windmill base frame, head, sails, sail spars, rear sail support arms and rear sail



4 Fit coach screws to the base of each post

this, for the same reason, it's worthwhile brushing a couple of coats onto the cladding's inside surfaces before cutting to length. Fit the cladding to the frame by cutting a 45° bevel at the same slope as the frame. To gauge this, hold the first board against the frame with its lower edge resting on the bench and run a pencil line up against the frame (**photo 5**). A small circular saw set to a 45° bevel makes quick work of this. Take a suitable piece of scrap MDF and make a guide at the correct angle; this can then be clamped in place on each board.

Using a couple of black plaster board screws, which contract well with the timber, hold each board in place. The completed windmill will be left in its natural state, so it's therefore important to ensure that all screws line up with one another. To help locate each screw in the same relative place on each board, mark a piece of scrap timber (**photo 6**). Work your way up the sides to complete the fixing. Once you've cut all the boards, remove each piece

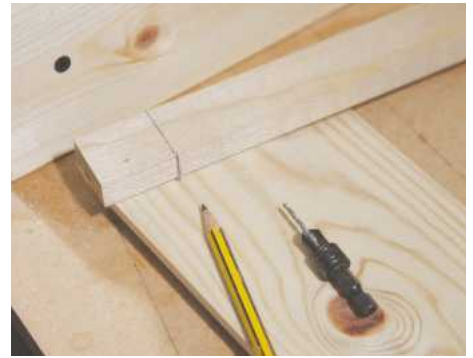


5 For the slope, run a pencil line against the post

and make an appropriate reference mark on the posts, which will allow the end-grain to be soaked with preservative. Once complete, adjust the coach screws so that the assembly stands off the ground and treat the outside with some preservative.

Fitting the first hub

A little tweaking may be required depending on the hub assembly you've managed to source. Those from a rear wheel are of a different design as they usually have to accommodate the rear gear assembly, which isn't part of the front wheel hub. Cut a square piece of sturdy plywood to fit onto the top of the frame and draw diagonals to locate the centre point. Cut a hole to suit the axle used – in this case, a 35mm hole suited the rear wheel axle from a geared bicycle wheel and the hub pushed in place (**photo 7**). Secure with four small self-tapping screws through slightly enlarged spoke holes. Note that the hub assembly is located on the underside of this platform, leaving a short length of axle protruding from the top of the base.



6 A simple method of keeping screw heads in line

The cladding's top edges may need to be trimmed nearer the plywood's surface. Prior to screwing the plywood to the top of the base assembly, ensure the axle rotates freely and that it's suitably greased. Using the nuts that would've originally held the wheel to the bike, secure the floor of the head to the hub axle.

Making the head

The head of the windmill is fairly straightforward – it consists of a plywood floor let into rebates cut into lower inside edges of the back, front and side walls. It's important to bear the following points in mind: 1) Although the structure is similar to that of a basic box shape, it should be noted that the front face slopes backwards at the same angle as the windmill base's walls (**photo 8**); 2) The front of the side wall needs to be sloped to the same angle as the base in addition to a slight adjustment to the front wall's lower rebate. A small router makes light work of cutting the rebates, or a table saw with depth of cut carefully set (**photo 9**). Cut the rebates



7 To cut the required hole, several different methods can be used



8 Ensure the tops of the ends are all level



9 Cut the rebates, allowing for a slope on the lower front edge



10 Note the bevel on the front face roof support



11 Plane to a smooth finish



12 Careful use of a table saw makes light work of this stage



13 Chisel a notch for the roof ridge piece

slightly deeper than the plywood's thickness, which allows the sides to act as a rain drip to help prevent water running into the base axle. The hub, onto which the sails are fitted, needs to be secured to the front face and its hole cut square to the front piece. Using this method, the sails, when viewed from the sides, will be parallel with the base walls and able to rotate freely around the base without clipping the lower corners.

Locate the centre by drawing diagonals onto the plywood floor and drill a hole to suit the hub axle. Screwing the base into the sides will allow the base to be removed at a later stage if required. For the roof slopes, remember to cut the front slope at a tilt. Remove any excess with a saw (**photo 10**) before planing to a finish (**photo 11**). Bevel the top edge of the sides to suit the roof's slope and rebate lower edges to accommodate the floor (**photo 12**). Before gluing the sides together and to support the ridge piece, cut a notch out of both front and rear faces (**photo 13**). Use 20mm-thick timber for the



14 Plane the ridge piece's top edge to a point

ridge piece and plane the top edge to a suitable point (**photo 14**). The ends should overhang the walls by about 10mm or so. Before gluing a piece of timber on each side to support the roof panels, their undersides need to be rounded. Plane both pieces to a bevel to suit the roof's slope (**photo 15**). Ensure the ridge piece is a push fit into the notches; the roof panels hold this in place. To allow access to overhaul the hubs, these will be screwed down later. With a couple of large washers either side of the plywood floor and a wheel nut, secure the head in place on the body.

The main sail

In order for the wind to turn the sails efficiently, the blades must be tilted at a slight angle on the spars, which requires careful cutting. As with the making of the rest of this project, using a table saw makes life much easier as the blade can be tilted slightly and a cut made part way along one side of a 1,050mm length of 32mm square timber. Tip the timber over and cut



15 Note slope to secure the roof

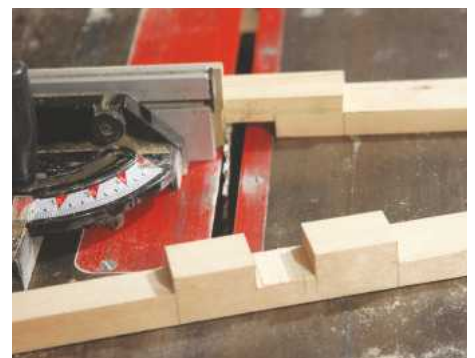
from the opposite end so that both bevels are sloping in opposite directions. For the second spar, repeat on another piece of timber (**photo 16**), ensuring that the waste is still attached to the timber. With a saw and chisel, remove the waste and leave the centre section 100mm long (**photo 17**). Carefully mark out and remove waste to form a half-lapped joint on both timbers. If available, use a table saw with the depth of cut set a little under half the timber's depth (**photo 18**), followed by a chisel for final adjusting and to ensure a good fit. Alternatively, use a router to level the joint's base (**photo 19**). You'll notice that the bevels all slope in the same direction around the cross (**photo 20**). The sails are straightforward to make using some off-the-shelf 38 x 4mm timber. Cut 24 x 200mm lengths, glue these onto two supports for each sail and finish the end with a semicircular plywood disc. By chance, I discovered that the table depth on my disc sander was 200mm, so it was a simple matter of cutting the timber slightly over length, squaring one end on the sander, ▶



16 Note how the slopes alternate



17 Saw the centre section square and remove any waste



18 Ensure fingers are kept away from the table saw blade...



19 ... or use a router if you prefer



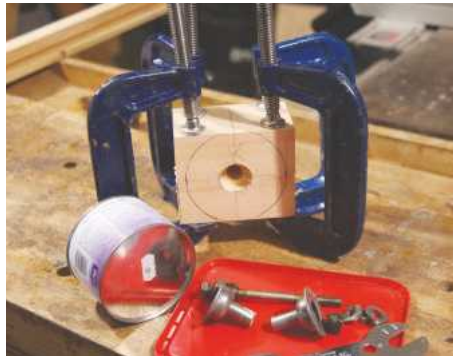
20 Note how the bevels all follow round the spars



21 Using off-the-shelf timber, produce 24 identical pieces for the sails



22 Make a simple jig to help with this stage



23 Note how the axle has been sawn in half



24 Ensure the drill bit is pointing towards the hub's centre

then flipping it over and using a piece of scrap to push the timber onto the sanding disc until the scrap reached the table's edge (photo 21), leaving 24 very quickly and accurately made sail cross-pieces. In a similar way to making the side frames, I found it useful to draw an outline of the sail onto a piece of MDF, then glue the components together. Check that the first piece is square to the sides, then use a spacer piece to keep the subsequent parts equally spaced. Use a suitable piece of timber and a couple of clamps to hold everything together as the adhesive dries (photo 22). Once you've completed all four, remove any squeezed-out adhesive with a chisel, then make a semicircular plywood disc and glue it in place. Apply preservative to all parts and when dry, screw the four sails in place onto the main spars. Ensure the lower ends are butted up against the centre squared section and that the outside edges are parallel with the spars.

The rear guiding sail

A front bicycle wheel hub is ideal for this and needs to be fitted through a wooden hub. To begin, measure the distance between the two rims that locate the spokes – in this case 90mm – and make a cube to this dimension. Accurately locate the centre from opposite sides and drill a hole right the way through the cube to suit the diameter of the axle centre's section. Undo the nuts on the axle, dismantle, and carefully cut the axle in two. Next, open out the hole on each end to suit the part of the axle that houses the bearings. A router set to the appropriate depth of cut is best used here. Once complete, draw a circle around the cube using a suitable tin or similar and cut to a circle (photo 23). Finish using abrasive wrapped around a sanding block or by eye on a disc sander. Divide the perimeter of the circle into eight equally spaced segments and mark the centre point. Use a 9mm drill bit and drill to a depth of 25mm; this will ensure you avoid going through to the axle hole. Keep the drill pointing towards the wheel centre and repeat for all eight blades. If available, a mortising machine makes this much easier as the drill bit can be kept vertical and the hub held against the rear fence (photo 24). Use pieces of 38 x 4mm timber for the blades, then glue together, cut to shape and fix in place to 9mm dowel previously cut to length. To provide a better gluing surface area, flatten



25 Paint the hub prior to fitting the feather piece

one side of the dowel using some abrasive wrapped around a sanding block. Once complete, glue these in the hub remembering to tilt slightly during insertion. Using small screws or nails to secure axles in place, the wheel hub can now be assembled onto the wooden hub. As with the other cycle parts, keep everything clean and free running by applying grease to the bearings and adjusting for just a whisper of free play. Drill two pieces of timber at their ends to suit the axle, then screw to a block fixed at the rear of the head; these will hold the completed assembly in place. Cut a shallow bevel along the top edge to allow any rain water to run off, and as with previous steps, soak these components in preservative prior to assembly (photo 26).



26 Old coffee cups have many handy uses

Final thoughts

I wanted to keep the timber looking as natural as possible and as the project progressed, I put a lot of effort into soaking the parts with a clear oil-based preservative. To break up the colour a little, I used a matt black acrylic barn paint left over from a previous job, for the plywood roof, sail tips and rear wheel hub, which I know has excellent durability. Take extra care to ensure the plywood edges and roof underside are adequately protected. When fully assembled, hold two opposite sails horizontally and, if required, use a small lead weight to balance them. Repeat for the other two sails. Adjust coach screws so that the base is elevated off the ground and enjoy the spectacle on a breezy day. ✂



27 The completed garden windmill should look something like this

Robert Sorby

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A jig too far?

While honing neglected hand skills, Robin Gates discovers intriguing jigs and rare techniques for sawing in *The Woodworker* of October 1915

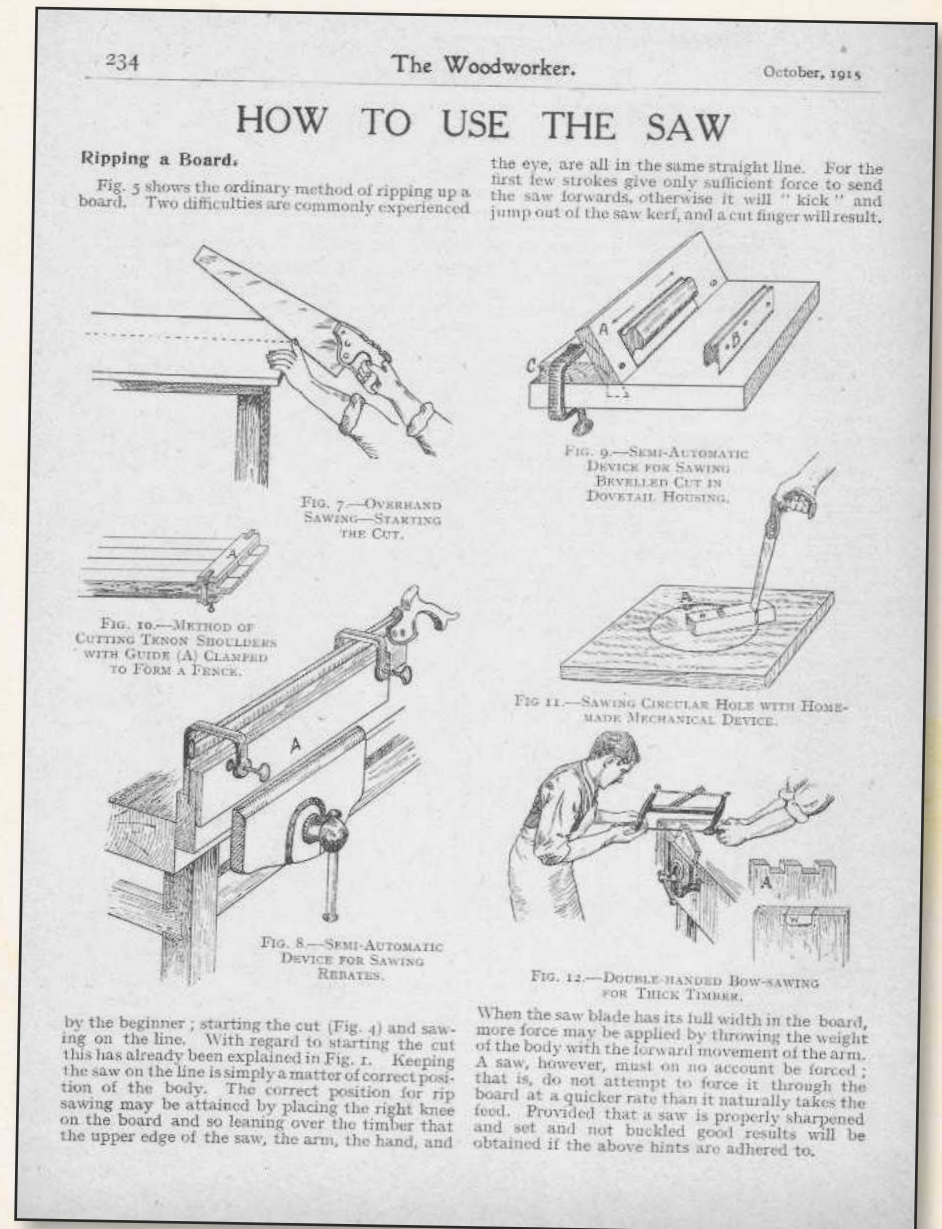
These days, working with hand tools may be regarded as a slow and misty-eyed indulgence. So much you can do with them can be executed with greater precision and speed using machinery. Put your four-square block in the grip of a five-axis CNC wood shaping robot and the flawlessly-carved piece will be completed before you've finished honing your chisels. And yet, the old ways aren't without their merits. Cometh the day a robot's vital sprocket fails and its replacement lies stuck in a ship wedged across the Suez Canal, cometh the well-honed hand skills to the rescue.

That said, keeping hand skills well-honed isn't easy given life's responsibilities and the distractions of our age, not to mention the creeping decrepitude of advancing years making themselves felt in those of us of a certain age. Indeed, as I was flicking back-to-front through the October 1915 issue of *The Woodworker*, my eyes dwelt longingly on plans for a folding deck chair. Birch- or beech-framed, rails notched 'for the purpose of regulating the lean of the back', complete with canvas seat and canopy, I suspect this deck chair and I would spend more time together than the toboggan I'd been studying last week.

'The workmanship of risk'

In the meantime, I think I need more jigs. Eyes not being what they were, hands never having been quite what they should, some guidance in sticking to the line would be appreciated. After reading David Pye's *The Nature and Art of Workmanship* some years ago, I'd been captivated by his concept of 'the workmanship of risk' describing a quality of work dependent on the 'judgement, dexterity and care' of the maker, and I'd been determined not to use 'jigged' tools. That resolution failed the moment I picked up a hand plane, surely for many the very symbol of hand craft and yet as boldly jigged as any machine because its cutting edge is positioned and guided by the tool itself. Sharp, properly set and pushed in the right direction, the risk with a hand plane lies only in going too far – and even that's eliminated if it has a fence and depth stop. So perhaps it's not so much of a cop-out as some have suggested if the hand tool woodworker should delegate responsibility to some simple device for, say, keeping the saw on task.

I'm sure the majority of my errors arise from poor sawing. To a certain extent, as the blade sinks further into the wood the developing kerf assists the hand and eye in guiding the



tool, but if concentration should drift – 'I wonder what's for dinner tonight?' 'Did we tax the car?' – the kerf develops a wandering mind of its own. Some external channel is required, pre-set to the angle of the cut – like a mitre box, for example, for sawing corners of a square picture frame.

Intriguing jigs & rare techniques

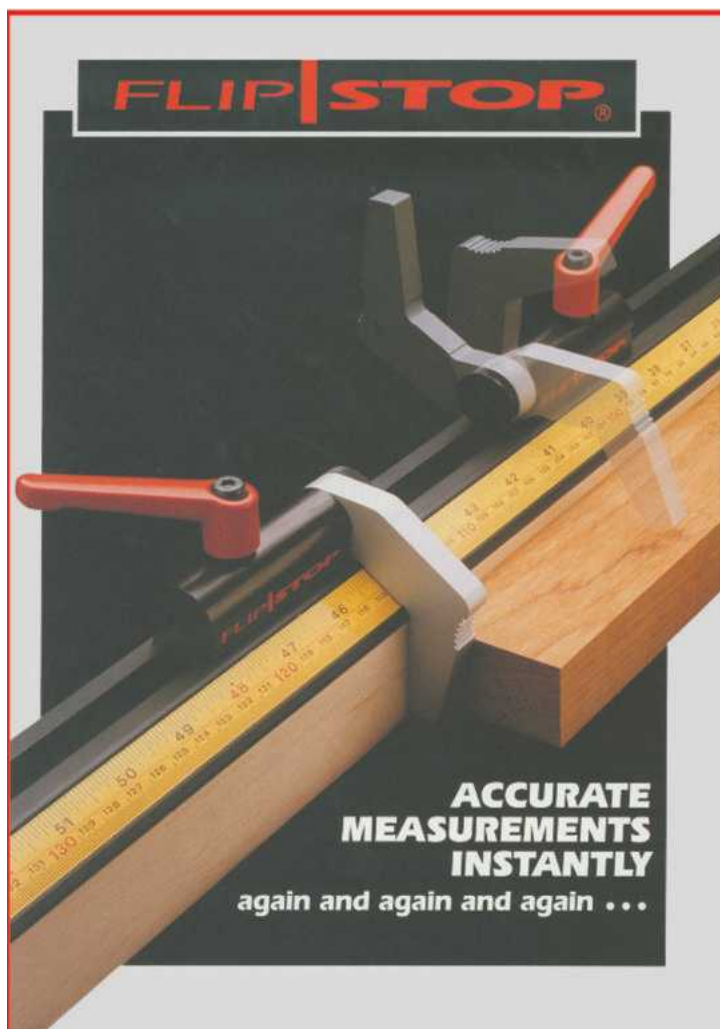
So this 1915 magazine, with the first in a new series on tool manipulation, fell open at the right moment because its coverage of 'How to use the saw' shows some intriguing jigs and rare techniques. It shows how work

as small as 1in may be worked to and fro on the saw braced upside down between body and bench, for example, and an upright slotted jig for sawing tenon cheeks. On this page you can see a bevelled block for sawing dovetail housings, a rotating slotted arm for guiding the compass saw and – perhaps looking a tad cumbersome – three pieces of wood and two clamps comprising a 'semi-automatic device for sawing rebates'. So now I'm wondering if this may be going 'a jig too far', the jig being so complicated and unwieldy that it runs the risk of undermining rather than reinforcing hand skills. Any thoughts? ✂



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To be in with a chance of winning **1 of 2 Trend T18S 18V sander kits (complete with 2 × 4Ah battery and 6A charger)**, visit www.thewoodworkermag.com/category/win and follow the instructions given. This competition involves two-part entry, requiring you to sign up as a member of our website and forum as well as answering the multiple choice question below:

QUESTION: What is the base size of the T18S/TSSB 18V ½ sheet sander?

A: 190 × 94mm **B:** 182 × 92mm **C:** 184 × 93mm

The winners will be randomly drawn from all correct entries. The closing date for the competition is **22 July 2022**. Only one entry per person; multiple entries will be discarded. Employees of MyTimeMedia Ltd and Trend are not eligible to enter this competition

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Alan Peters

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2022

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Woodland Heritage – Patron of The Alan Peters Furniture Award 2022

Woodland Heritage was established as a charity 27 years ago, in 1994, by two cabinetmakers keen to 'put something back'.

A membership-based organisation, the charity supports the resilient management of woodlands, development of the timber supply chain, furthering of knowledge and skills within the forestry and timber sectors as well as within the general public, and tackling of threats to the future supply of high-quality UK timber.

As well as running the popular 'From Woodland to Workshop' courses and a Field Weekend each year, Woodland Heritage produces an annual Journal for its members.

For many years, the charity sponsored the 'Best use of British Timber' award at the Celebration of Craftsmanship & Design exhibition in Cheltenham, which recognised the creative talents of both established woodworkers and those relatively new to making.

Since 2016, Woodland Heritage has owned Whitney Sawmills in Herefordshire, with its support for research into Acute Oak Decline dating back to 2009, since which time £2.5m has been raised to tackle this threat to our most popular tree.

HRH The Prince of Wales has been Patron of Woodland Heritage since 2005. For more information, see www.woodlandheritage.org



2019 winner of Woodland Heritage's 'Best Use of British Timber Award'
– Adrian McCurdy's 'Ark'



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This annual award celebrates the legacy of one of Britain's most prominent furniture designer-makers of the late 20th century while aiming to encourage all talent in the craft of furniture design and making. Any woodworker who's a resident citizen of the British Isles, over the age of 18, with a passion and talent for designing and making contemporary furniture, is invited to submit up to two pieces made primarily of wood. These can also include, if applicants so wish, other complementary materials that echo Alan Peters' design philosophy. Judging is based on the appropriate use of material, quality of workmanship, functionality, as well as originality of design.

Both one-off designs and potential batch-produced designs are encouraged and the piece(s) doesn't have to be large. Applicants should be familiar with the work of Alan Peters prior to applying and are encouraged to read organiser Jeremy Broun's 64-page online video-integrated e-book, which is offered free-of-charge here: www.woodomain.com/alanpetersaward2022.

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, while moving tradition forward, resulted in the creation of many timeless pieces. He created affordable, functional furniture, which was built 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 event in Cheltenham. The award ran for eight years and the judging panel comprised of Jason Heap, Keith Newton and Jeremy Broun.

Following the success of the 2021 online award, this year a physical exhibition, plus prize-giving ceremony, will take place at Axminster Tools' Nuneaton branch on 12 October.

Expert judging panel

Jeremy Broun (Organiser) – designer-maker and co-exhibitor with Alan Peters from 1978–2002

Andrew Lawton – designer-maker who worked with Alan Peters as well as on his last commission

Freya Whamond – Yorkshire-based woodworker and furniture designer-maker. ✂

2021 AWARD WINNERS

1ST PRIZE

Overall winner of
The Alan Peters Online Furniture Award 2021:
Andrew Laphorn's
'Remnant' table



2ND PRIZE

Aidan Donovan's
'WAGA' table
in English elm



3RD PRIZE

Nick Newlands'
'Art Chest' in cherry
and sycamore



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3RD PRIZE

£300

Judges' prize

This award is open to any resident citizen of the British Isles, aged over 18, who has an enthusiasm and flair for woodworking. A piece of furniture – indoor or outdoor – is to be made and six high resolution JPEG images submitted, together with a Word document description. Shortlisted applicants will be asked to engage in a Zoom video call or submit a one-minute mobile phone video introducing themselves and describing the piece(s).

Judging of entries will take place in September followed by a judging ceremony and exhibition on 12 October

Despite the award deadline having been extended to **31 August 2022**, it's still important to get designing and making as soon as possible. To download an application form and view the free e-book, visit www.woodomain.com/alanpetersaward2022. The entry form can be found at the right of the page. Payment for entry can also be made securely via the website. For further information, contact Tegan Foley tegan.foley@mytimemedia.com, or Jeremy Broun (jezbroun@gmail.com)

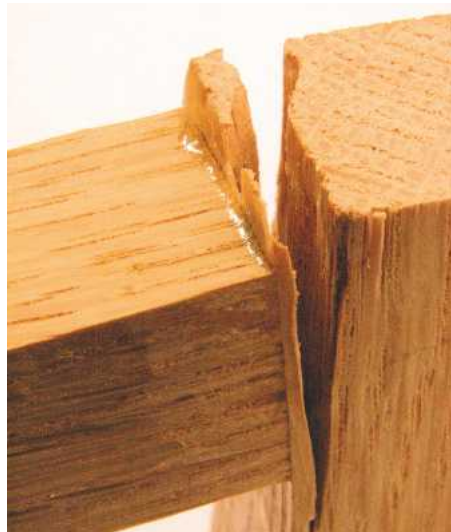


GLUING UP FURNITURE

John Bullar looks at different types of woodworking adhesives aimed at the furniture maker and how their uses differ, as well as exploring application and holding methods for setting



1 Oak boards, which were glued edge-to-edge, then snapped using clamps. The break occurred 10mm to the left of the glue line, which shows that the glue was clearly stronger than the wood



2 Two pieces of oak, glued in a right-angled butt joint, with force applied to snap the joint. Again, the wood broke before the glue, which demonstrates the strength of the glue joint, even an end-grain



3 When it comes to general furniture work, PVA-type glues are among the most common as well as being easy to use

Nearly all furniture, traditional or contemporary, relies on glue of one kind or another to hold its joints together. If the glue fails, so does the furniture, so it's important to use the correct type in the correct way.

In this article, we'll look at the different types of woodworking adhesive available to the furniture maker and how their uses differ, rather than just being a matter of personal preference. We'll also look at how glues are applied and held during setting. 'Organised panic' is how some furniture makers describe the glue-up process; at every other stage of construction, you can work as slowly as you like in order to get things right, but once glue is applied, you must move swiftly before it starts to solidify.

Stronger than wood?

Some furniture makers may claim that their woodworking adhesives are stronger than the wood itself, but can such a bold statement be taken seriously? To make sense of this, we need to take a closer look at how strong the wood actually is. On the face of it, the stronger an adhesive is the better, although there's more to it than this. For example, some glues need to be flexible

rather than brittle even though the brittle type may theoretically be stronger. Some have to fill gaps and cope with climatic changes in wood dimensions, while others must be removable to allow for repair.

Testing strength

Wood consists of long, thin fibres, which lie side by side in layers. Pulled lengthways, the fibres themselves are immensely strong – weight for weight they can far exceed steel. However, pulling the fibres sideways to peel the layers apart is relatively easy.

So while wood is very strong along the grain, it's quite weak across it. To find out which was stronger – glue or wood – I edge-jointed two short oak boards using a standard woodworking adhesive straight out of the bottle. The oak was fine-grained and free from any visible cracks or defects. I gave the glued joint a couple of days to cure – if left for longer, it would've been stronger. Even so, when I broke the board apart using a pair of heavy-duty clamps, the wood split to one side of the glued-up joint (**photo 1**).

It's commonly said that glue doesn't adhere well to end-grain, but I haven't found this to be the case. I set about repeating the test on a simple right-angled butt joint – end-grain against long-grain. Again, it was the oak that

failed to one side of the glue line rather than the joint itself (**photo 2**).

These tests convinced me that, sideways, the glue was stronger than the wood. However, a third test, gluing end-grain to end-grain, failed on the joint each time as, lengthways, the glue is much weaker than the wood.

Synthetic glues

Most woodworking glues are synthetic 'resins', which were developed by the chemical industry during the last century – not to be confused with resin that drips out of pine trees! The commonest type is white liquid glue based on PVA (**photo 3**). It's immensely strong when applied between closely fitted surfaces, but won't fill gaps. It's also sold in a water-resistant variety, which is sometimes yellow coloured. I find this type stronger for dry indoor use as once set, it forms what's known as a 'cross-linked polymer' – a plastic material that's locked together in all directions.

Polyurethane glue is waterproof and expands into semi-flexible foam as it sets, which makes it suited to joints with gaps (**photo 4**). It also works well if the wood isn't completely dry or placed outside where a lot



There are many woodworking adhesives available to the furniture maker; some are similar while others are significantly different



4 Polyurethane glues are particularly useful for joints with gaps as well as where a lot of seasonal wood movement is expected

of seasonal wood movement is expected. Owing to the way in which it expands, PU can be messy to use on tight-fitting joints, so I'd avoid using it on fine furniture.

Powdered synthetic resin is mixed with water to create a thick paste that doesn't shrink much when it sets, so it'll fill gaps



7 Two-part epoxy resins are ideal for fitting small decorative features or for embedding metal reinforcements into joints



8 Traditionally used by all furniture makers, pearl glue – also known as hide or scotch glue – is now only used for antique repairs and making musical instruments



5 Glues made from powdered synthetic resin are good for spreading over large areas

between rough surfaces, forming a hard layer (photo 5). It's ideal for laminating sheets of wood together – i.e. when forming a curved panel or beam.

Urea formaldehyde resin is supplied with a separate liquid hardener, which is painted onto the opposite surface from the glue (photo 6). This means that the curing process won't begin until the joint is pressed together, making it ideal for complex constructions.

As a testimony to its strength, this resin was originally developed and approved for building wooden frames in aircraft. Epoxy resin is made by mixing adhesive with a hardener (photo 7). Small tubes of paste mixed in equal parts are ideal for fitting decorative features. Large cans are mixed with a small tube of concentrated hardener and ideal for jobs such as embedding metal reinforcements into joints. Mixing the correct amount requires good judgement and, while good for gap filling, the cured resin isn't flexible.

Natural glues

Traditionally, furniture makers and other woodworkers used glues made from boiled down animal skin or bone. This is still available today and sold as hide glue, pearl glue, scotch glue, etc. This natural glue is immensely strong and can be removed and replaced if repairs



9 Pearl glue mixed with water is heated until a thin gel is formed, which thickens within a few seconds of cooling



6 Resins with a separate liquid hardener are immensely strong for close-fitting joints where a long open time is required

are necessary, making it ideal for antiques and high quality musical instruments (photo 8). The disadvantages are that it must be used fresh and hot, and the finished joint will decompose in damp conditions.

An alternative way of using hide glue, which is still compatible with traditional varieties, is in a modern solvent-treated form. This avoids the need for heating and allows a much longer open time prior to setting (photo 10).

Flexible glues

Furniture makers often need to make temporary fixings – i.e. tacking components in place while the joints are worked. Hot-melt glue sticks are great for this and while the joints aren't particularly strong, they can be carefully undone without damage (photo 11). Individual tasks, such as fitting a padded box lining or glass and mirrors into a cabinet, call for purpose-made specialised adhesives as opposed to using a general woodworking variety and achieving poor results (photo 12).

Screwed & glued

For less experienced furniture makers, one of the simplest and most reliable woodworking joints is the screwed and glued joint (photo 13). Ideal for plywood or other manufactured boards where seasonal movement isn't a consideration,



10 Modern solvent-treated hide glue doesn't require heating and therefore allows a much longer open time



11 Hot-melt glue sticks are handy for temporary fixings and sealing gaps, such as in a dust extractor, as shown here

the joint is made using small blocks, which are screwed and glued to both boards. To test alignment, once carefully positioned, the joint can be tightly dry-fitted then unscrewed prior to applying glue for final assembly (**photo 15**).

Edge joints

If you plan on using solid wood to make larger pieces, you'll need to find a way of joining boards edge-to-edge. Simply gluing board edges along the grain is the most effective method, but they must fit together tightly in order for the joint to be strong and inconspicuous, which calls for careful planing. With the boards clamped face-to-face, the edges can be planed as a pair, then any small inaccuracy in the angle will cancel out once they're pressed together (**photo 16**).

Holding the edges together and gluing with a bright light placed behind allows you to check that the fit is free of gaps, otherwise it may be necessary to plane them again. Once the edges are true, they should be lightly coated in glue and pressed together with sash cramps positioned every 200mm or so (**photo 17**). Larger boards



16 When preparing an edge joint, the two boards are clamped face-to-face, then the edges planed as a pair



12 Rubber-based glues can be useful for highly flexible joints, such as fixing soft fabric linings in furniture

require more clamps, fitted alternately above and below, to even out the pressure.

Edge joints made with traditional hide glue don't require clamping (**photo 19**). When slid against one another, the freshly glued edges form a 'rubbed joint', which holds itself together while it sets (**photo 20**).

Pinned joints

Dowels are short cylindrical rods that can be glued into drilled holes to make a basic pinned joint. As they can be drilled at any angle, dowelled joints are versatile and



14 Adhesive is applied to pre-drilled and countersunk blocks, which are positioned along the line



17 Planed edges are evenly brushed with a layer of white PVA-type adhesive



13 For a screwed and glued joint, using a pencil, begin by marking the position of one board against the other

fairly simple to make, although great care is required with their alignment (**photo 21**).

Later in the series, we'll take a detailed look at how to cut mortise & tenon and dovetail joints, which consist of a shaped pin fitted into a matching socket (**photo 22**). With all these pinned joints, you can choose whether to apply glue: **1)** To the pin, which tends to get rubbed off; **2)** To the socket, which tends to get pushed in; **3)** To both, which ensures there's no dry areas. For neatness, apply the least amount of glue to a pin, especially near the top, which will ensure the glue doesn't ooze out of the closed joint.



15 With glue applied to all contact surfaces, the joint is screwed together



18 Boards are clamped edge-to-edge while the glue sets



19 Traditional edge joints, made with hide glue, need to be quickly worked and don't require clamps



20 Instead of clamping, the glued edges are rubbed together for a few seconds until the joint grabs

Clamping up

Clamps – or cramps – are mechanical devices for holding wooden components together while the glue between them sets. Their job is to provide a steady, even force without causing distortion (**photo 24**). Wooden blocks placed between clamp and furniture protect the clamped surfaces from bruising and also prevent steel coming into contact with steel, which can cause wood stains.

Due to the large number of possible component and joint shapes, clamps are available in a variety of shapes and sizes. Depending on brand, they can be expensive, especially if a large number is required (**photo 25**). For one-off jobs, simple clamps can be improvised using rope twisted around a stick, like a tourniquet.

Different glues have different 'open times' – i.e. the time allowed from applying the glue to finally closing up the joints. After this time, all the clamps should be in place and adjusted to their final pressure, which will ensure there's no small movements that could potentially weaken the freshly formed adhesive bond. This calls for careful planning and rehearsal when laying out all components, clamps, blocks, etc. in their required positions.

With more complex pieces of furniture, it's worth considering how frames, etc. can be glued up in steps as sub-assemblies, in order to reduce the open time at each stage (**photo 26**). It's also worth remembering that increased temperature reduces the open time, so you need to work faster on hot days (**photo 27**).



25 Sometimes a large number of clamps is necessary to pull evenly in both directions



26 Awkward and irregular shapes, such as this chair seat, can be pulled together using a strap clamp



21 Dowels are versatile components for making simple glued-up joints and don't require any specialised knowledge or equipment



22 Pin and socket joints, such as this mortise & tenon, can have glue applied to some or all contact surfaces



23 Rehearse fitting joints dry before gluing them in place. However, it's best not to fit fully as they may be damaged when pulled apart



24 An array of clamps holds components in place while the glue sets



27 On the underside of a solid wood cabinet top, glue is avoided and instead screws in slotted holes allow for seasonal movement

NEXT TIME

In the September issue, John looks at the best methods for making mortise & tenon joints. Proven over centuries to hold the corners of cabinets, tables and chairs together, these simple pin and socket joints resist the forces of nature as well as stresses of everyday use

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MB150 Surface Planing Machine 230v

The Cormak surface Planing machine is solid and has a well-thought-out structure, which gives a lot of possibilities and mechanical processing of wood.

Machine description

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Please note that machine does not come with drill - chisel attachment as shown.

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Spindle speed	4000 rpm
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Extracting Outlet diameter	100 mm
Number of shafts/dimensions	3 / 250x30x3 mm
Maximum height of thicknesser	180 mm
Maximum thickness of machining	5 mm (planer) / 2.5 mm (thicknesser)
Maximum width of machining	250 mm
Weight	170 kg

Machine description

This planer and thicknesser is a solid and well-thought solution, allowing for wide adjustment and machining capabilities of soft and hard wood. The adjustment itself is relatively simple and transforming planer into thicknesser takes only a few seconds. Its weight (170 kg) provides stability, ensuring safe, vibration-free work with additional anti-vibration feet.

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COLOUR-CHANGING CHATOYANCE

Paolo Pisani takes a look at this wonderful natural wood surface property, which involves a shift in colour depending on lighting or observation direction



The term 'chatoyance', or 'chatoyancy', represents a natural wood surface property, which consists of shifting colour depending on the lighting or observation direction. As many wood species exhibit this property, this sort of 'dynamic appearance' is well known to most woodworkers.

To experience it very clearly, a simple test can be conducted:

- 1) Source a small piece of timber from the list of wood species (**Fig.1**) with high or medium-high chatoyance;
- 2) Fine sand the surface or finish with shellac, oil or transparent epoxy resin;
- 3) Use a torch to illuminate it in a dark room, aiming to move the light

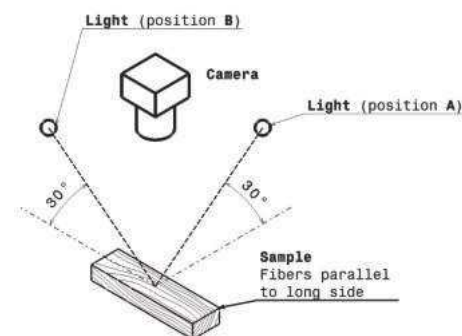
around the entire piece and observing it from different directions.

You'll notice a pleasant colour-shifting effect, which is often negligible under normal lighting conditions. This effect is due to the wood's fibre microstructure, which, to some extent, acts as a multitude of microscopic mirrors; when these are reached in a certain direction, the surface appears much brighter. This behaviour is very difficult to detect on some species – such as olive wood – but can still be measured on all timbers.

Measuring chatoyance

Even if this phenomenon appears very difficult to explain in simple terms, it's been well defined and described within different sectors. To understand the basic principle, imagine the situation shown

in **photo 1**: a camera looks at a wood sample illuminated from two different positions – 'A' and 'B'. In both, the light source is located at the same distance from the sample, and



1 Light in positions 'A' and 'B' with respect to the sample



2 Chatoyance on black walnut



3 Cypress – very low chatoyance



4 Iroko – very high chatoyance



5 Simple curly maple tray

Chatoyance on different wood species			
High	Medium-high	Medium-low	Low
African Walnut	Alder	Afzelia	Boxwood
Etimoe	Birch	Afrormosia	Cedar of Lebanon
Honduras Mahogany	Black cherry	American ash	Cocobolo
Iroko	Black limba	Aniegre	Gaboon ebony
Khaya	Black locust	Bocote	Mediterranean cypress
Koa	Black walnut	Bog oak	Norway spruce
Makore	Bubinga	Cerejeira	Olive
Ovangkol	European walnut	Chestnut	Sucupira
Okoume	Guarea	Cumaru	Wenge
Paldao	Hard Maple	Douglas fir	Yew
Sapele	Jatoba	Elm	Ziricote
Spanish Cedar	Limba	Eucalyptus	
	Louro Faia	European ash	
	Mansonia	European beech	
	Meranti	European maple	
	Merbau	Granadillo	
	Moringui	Hickory	
	Mulberry	Indian rosewood	
	Padouk	Ipe	
	Red Alder	Kingwood	
	Sweet Cherry	Koto	
	Tamo Ash	Larch	
	Teak	Lime	
	Zebrawood	London plane	
		Louro psreto	
		Macassar ebony	
		Madagascar rosewood	
		Obech	
		Olive Ash	
		Pear	
		Pine	
		Poplar	
		Purpleheart	
		Red gum	
		Red oak	
		Santos Rosewood	
		Satinwood	
		Sessile oak	
		Spruce	
		Swiss stone pine	
		Tineo	
		Toulpier	
		White Oak	

Fig.1 Chatoyance on different wood species

light hits the sample with the same incidence angle. **Photo 2** shows a first example of the result on a piece of black walnut, which has been sanded to 1,500 grit with no finish applied. It's clear to see how the wood appears significantly brighter when illuminated from position 'A'.

The amount of brightness variation allows you to quantify how chatoyant a wood species is. Surface finish has an obvious impact on results: rough-sanded is hardly ever chatoyant, whereas one that's been fine-sanded or finished with oil is often visibly so.

The most chatoyant wood species

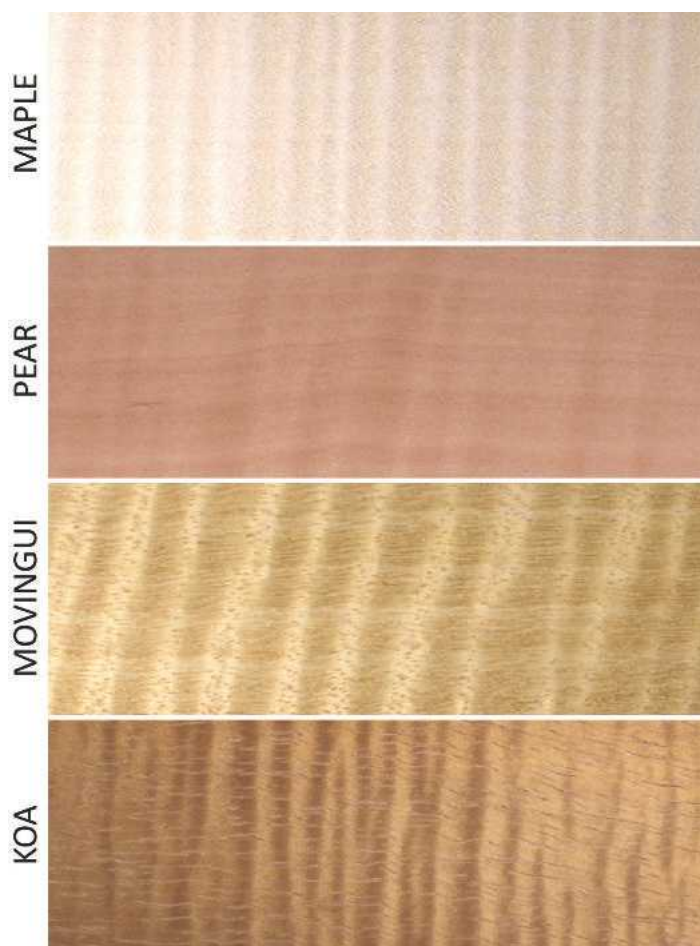
Measuring chatoyance allows you to compare various wood species, looking for those that are most – or least – chatoyant. **Photos 3** and **4** demonstrate a comparison between two very different species: cypress and iroko.

Obviously, all species have some natural variability; therefore, only a typical average value can be identified, still providing clear information as to where to find chatoyance. Systematic research carried out on thousands of samples from over 90 species provides

an initial suggestion as how certain species will appear when used to make a piece of furniture, for example (**Fig.1**). This phenomenon is difficult to describe using words, but is easily demonstrated with animated GIFs, as collected on www.chatometry.com.

Curl & other figuring

'Curl' is a typical type of figure that many wood species can exhibit, which is the result of a combination of properties:



6 Curl on different species

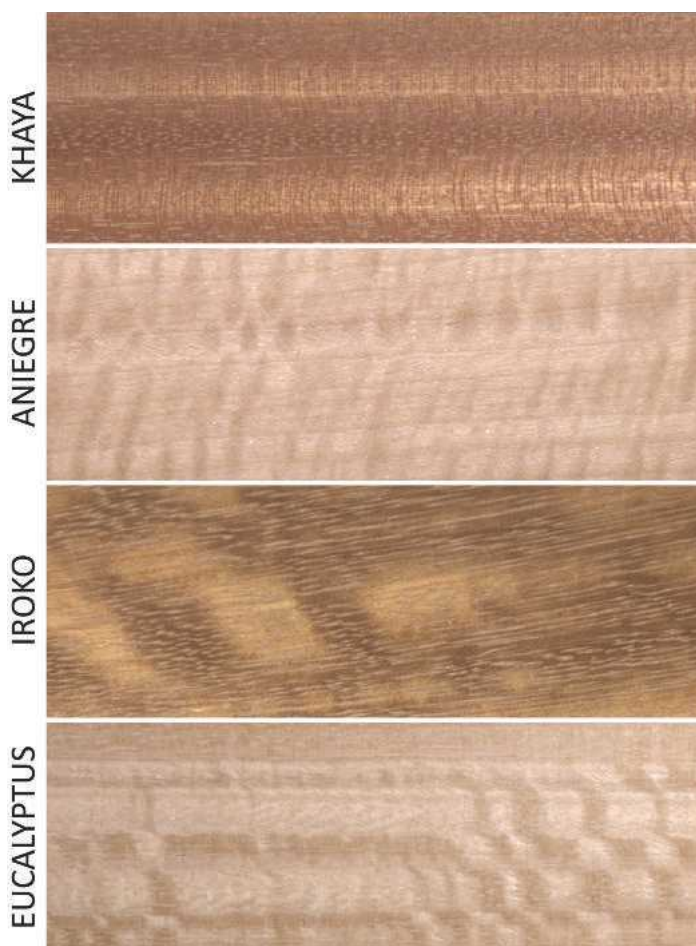
a wavy fibre distribution and some chatoyance.

Photo 5 shows a classic curly maple example: a simple tray with evident stripes caused by chatoyance and fibre distortion. The same figuring is typically sought in violin backs, as pictured in the main photo on page 45.

Photo 6 shows some further examples of curl: maple, followed by a piece of pearwood

whose poor chatoyance fails to highlight fibre distortion, followed by movingui and koa, where high chatoyance makes curl particularly evident.

Many other types of 'figuring' can be found in natural wood, which are caused by different types of fibre distortion – as depicted in **photo 7**. All these figures are,



7 Various other figuring in wood

however, highlighted by chatoyance.

Similarly, some very nice figuring is shown by species with evident 'flecks'; or medullary rays, such as oak, London plane, beech or louro faia. Since medullary ray fibres are perpendicular to longitudinal ones, they appear brighter under lighting conditions that make longitudinal fibres darker, and vice-versa. This fascinating effect is demonstrated in **photos 8-11**.

Enhancing chatoyance

Finish has a significant effect on chatoyance; as an example, typical water-based floor finishes have a strong negative effect on this property. On the other hand, the following finishes work very well to enhance it:

- Shellac
- Linseed oil
- Transparent epoxy resin

Other ways to enhance this includes:

- Using a very sharp plane and avoiding sanding
- Sanding the surface to a very fine grit
- Cleaning the surface with alcohol prior to applying a finish

Finally, on light-coloured wood species, chatoyance can be improved by darkening the surface in different ways:

- Sunlight exposure
- Weathering
- Dyes, which penetrate deep into the cell structure and lend an otherwise flat piece a 3D effect. ✕



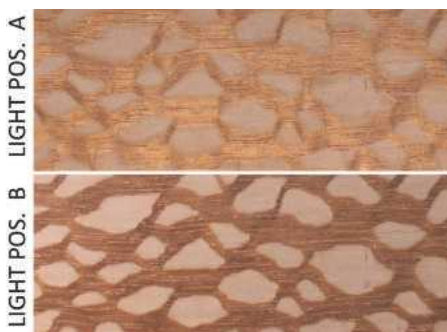
8 Flecks on oak



9 Flecks on London plane



10 Flecks on European beech



11 Flecks on louro faia

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Now in its 27th year, The North of England Woodworking & Power Tool Show – affectionately known as the ‘Harrogate Show’ – is the longest established, highest attended retail woodworking event in the country

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A-Z

WOODWORKER'S ENCYCLOPAEDIA **PART 41**

Now into the Vs, **Peter Bishop** continues on to the Ws with a few lengthy descriptions, including how veneers are produced, descriptions of a few associated tools, before finishing off with some warped stuff

Veneers

We generally think of veneers as the thin facings of exotic or highly decorative woods applied to a rather plain ground. Originally conceived to make the 'good stuff' go further, veneering has now become something of an art – for example, that displayed on antique furniture as well as work by modern designers. In my opinion, however, veneering is a different kind of art. Applying that thin layer of beautiful wood to some dubious stuff and getting it to stay there, flat with no bubbles, is worthy of a medal. Of course, some shortcuts

can be made using modern technology.

A favourite today is with vacuums as well as special bags or presses. This method is worth exploring if you find yourself faced with more than a small amount of veneering work. You can go traditional and use some specialist tools, but let's start by looking at the three ways in which veneers are produced.

'Rotary' cut

These veneers are produced from 'peeler' logs, which are selected due to their suitability,

and soaked in baths of hot, steaming water before being mounted on a lathe like-machine where a thin veneer is peeled off, somewhat like a toilet roll unravelling. Using this method, some timbers will produce veneers with attractive figure, whereas with others the result will be rather plain. You can peel very thin veneers with little waste so this is the most economical method of production. It's also the way in which thicker veneers are cut for plywood manufacture, with layers laminated together.



Vacuum bag veneering



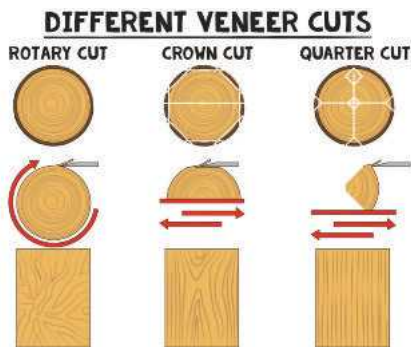
Standard AirPress – professional results at an affordable price



Vacuum membrane press from BenchPress



Keller veneer peeling line in operation



Three types of veneer cuts

Veneer 'slicing'

'Slicing' veneers is more costly but the end result is increasingly varied and attractive. Baulks of timber are quarter cut, then selected for veneer production. These large lumps of wood will also be soaked in hot steam baths before cutting can proceed. Unlike the rotary method, where the wood turns on a blade, slicing is a little different. This time the baulk is fixed and the knife passes over it, slicing off a thin piece. As the cutting process continues, the blade drops down each time to slice off the next piece. The thickness can be measured and controlled. The very bottom of the baulk is held in place with some spiked 'dogs'. Obviously, the cutting blade can't get anywhere near this, so the end result is always a 'backboard' of beautifully figured wood.

Veneer 'sawing'

This particular method is little practised these days due to the fact it's very costly and wasteful. However, if you have a nice piece, there's no reason why you can't do it yourself! Sawing could be used for the most difficult timbers, to slice or rotary cut. Perhaps the grain is so interlocked with a fabulous pattern but would tear out if not sawn. Once more, a baulk is chosen for its figure and suitability. Using very thin-bladed saws, originally circular but most likely bands, single or multiple cuts are made to produce slivers of wood.

Sawn veneers will likely be 1mm or more thick, plus some sawdust. Using rotary and slicing methods, you can get this thickness down to under 0.5mm. Sawing veneers still has its place, and is probably the only way some of those old, knobbly bits of burr chucked into the corner of your wood pile will ever get used!

Veneer hammer

These are most likely named due to their resemblance to hammers used for driving in nails, and also have a handle and head. The head is a wide, flat section used to squeeze out air and glue from under the veneer when fixing it to the ground. The handle helps with applying leverage in order to achieve the required pressure. Using a veneer hammer, you work quickly from the centre out until the veneer is fixed. You might fix large or small sections in this manner. Perhaps the former will be trimmed once fixed in place.



To create a book match, consecutive leaves of veneer are flipped open to face each other like pages in a book, creating a mirror image of the previous leaf – shown here with red oak



With 'slip' matching, consecutive leaves of veneer are slid or 'slipped' across one another and joined side by side, creating a repeating grain pattern across the panel

Veneer matching

Veneers are matched when you want to create a pattern or have a large surface to cover. There's a number of ways in which the matching can be achieved. You might open up and join two consecutive pieces of veneer; this is called 'book' matching. If it's easy on the eye, then you may simply lay the veneers in sequence with the same pattern showing; this is called 'slip' matching. So many different combinations are available and not all use only one type of timber.

Veneer pins

These very fine pins are sometimes used to hold the veneer in place once it's been worked onto the surface. The residual holes should be so small that they're lost in the background.

Veneer saws

Traditionally, this specialist saw has a thin blade, very fine teeth and little kerf. They're short with



A veneer saw is a small double-edged tool for cutting thin hardwood veneer. Its narrow curved blade facilitates precision work, and its elevated offset handle makes it possible to cut flush with a surface

one or two cutting edges. To help control the cut and avoid the veneers splitting or breaking away, the edges are slightly convex. These are really suited to cutting thicker veneers as a good, sharp craft knife is best used on thin ones.



While pinkish-red when freshly cut, with a clear, vertical grain, Douglas fir ages to a beautiful, warm reddish-brown with darker stripes

Vertical & flat grain

These are a few classifications that can be simply explained. Vertical grain is the cut produced on the quarter and flat grain from tangential cuts. These names are usually applied to quality softwood such as Douglas fir where the vertical grain stuff is sought after for door production. You might also see it abbreviated to 'VG'.



A model showing a slice through a ring-porous tree, such as deciduous oak

Vessels

We've talked about these cells in various other parts of the series. To recap, they're sometimes called 'pores' and are the main water and suspended mineral conduits within the tree trunk. Once the spring wood moves on, the 'late' wood vessels become the main structural, vertical element. In hardwoods, different sizes, shapes and distribution of vessels helps with identification.



Homemade Moxon vice



Sjöbergs Smart Vice

Vices

We all know what these are and a number of different ones are available. For us woodworkers, the simplest are probably the best as long as the jaws have wooden faces; this'll help to ensure you don't mark project pieces. If you have available space, a blacksmith's vice with heavy-duty jaws is often useful, along with an anvil if you can fit one in. After all, there are times when even us woodworkers have to bend or hold some metal.

Virgin forest

Untouched forest that hasn't been harvested and isn't secondary growth.

Wainscoting

This is a short wall covering of solid wood boards or sheet materials, which are generally mounted in frames up to about waist height. Traditionally, this would've been made in oak with quartersawn panels and can still be seen in some old buildings. It fell out of fashion but has since made a bit of a comeback. Now you're most likely to see wainscoting with painted panels or boarding.



Shaker-style wall panelling from The Library Ladder Company Ltd



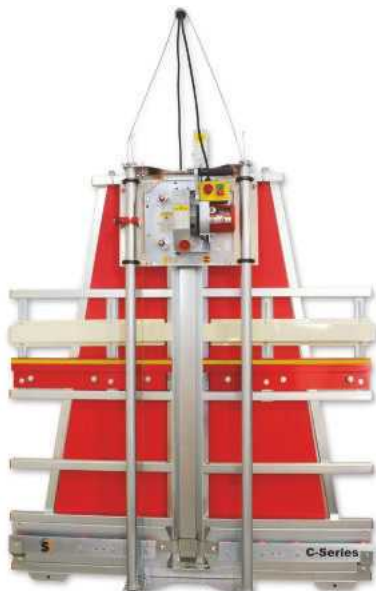
Wainscot, Merchant's House, Wiltshire

Wall saws

If you need to cut sheet material and haven't got huge amounts of space, then a wall saw will fit the bill. Mounted vertically on a frame with moveable guides, the hand-operated saw can slice out your pieces. These come in a range of different sizes to suit various budgets, but it'd be silly not to have one big enough to accommodate a standard sheet size!



Holz-Her Cut 1255 wall saw



Safety Speed C4 panel saw from Axminster Tools

Wane & waney-edge

Wane is the word we apply to stuff with some bark and sapwood left on its edge. Waney-edged wood is produced when a log is cut into planks. If the edges aren't straightened and sawn square, the wane will remain. These rough edges can be attractive if incorporated into a design, but for most of us they need to be trimmed off. Buying waney-edged as opposed to straight-

edged stuff should be cheaper. There's two reasons for this: firstly, the producer hasn't had to spend so much time cutting the boards square and, secondly, if cut square, they'll have incurred greater waste. If we, as woodworkers, can cut round or buy these odd shapes, then we should be able to utilise the stuff more efficiently.



Waney-edged oak window board



Waney-edged pippy elm board

Warping

Any plank that's not flat and straight will have some warping in it. Most warping will occur while the wood dries. Some can be avoided, some not. There's a whole range of different types of warping – bow, cup and twist are just a few such examples. ✕



A variety of warped boards

NEXT MONTH

In part 42, Peter reaches the penultimate section of the directory. While still in the Ws, there aren't many more to go!



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Digital computer model of the completed replica ship

BUILDING A REPLICA OF THE SUTTON HOO 'GHOST SHIP'

Currently being undertaken by a team of maritime experts and volunteers, **John Greeves** talks to Master Shipwright **Tim Kirk** about building a full-size replica of the **Sutton Hoo** burial ship

When Basil Brown began digging in 1939 on Mount 1 in Sutton Hoo, Suffolk, he had no idea that the excavations would turn into one of the greatest discoveries in British archaeology. Brown was soon joined by a team of eminent academics and professionals. Not only was the team dazzled by the gold and silver treasure and artefacts uncovered, they were also intrigued by the imprint of a great ship, now believed to be the final resting place of King Raedwald, the 7th century ruler of the Anglo-Saxon kingdom of East Anglia.

The wood from the approximately 27m ship hadn't survived; all that was left to excavate at the time was an extremely fragile impression, which was formed from a thin crust of sand that had hardened with the decomposition of decaying wood. The 3,598 rivets remained in very much their original position, in the sand, with strake runs of planks, which were instantly recognised. The 'ghost ship' as it's often been called, also showed the regular spacing and location of 14 pairs of tholes – primitive rowlocks. The ship had been subject to enormous pressures of twist and tilt in the ground, and its distorted shape was certainly 'broken backed' or 'hogged'.



Sutton Hoo Ship burial excavation, 1939 – photographic archive Mercie Lack – courtesy of the British Museum



The Royal Burial Mounds at Sutton Hoo



Life-size metal sculpture of the Sutton Hoo ship

After being buried for 1,400 years, the ship's planking at either end of the vessel was missing with 2.2m lost from the bow and 1.76m from the stern. Fortunately, with records available from the original and later re-excavation in 1967, it's been possible to deduce the most likely lines of the vessel when fed into a digital CAD programme.

In 2016, Paul Handley, an independent naval architect, began the design phase for the replica ship, starting with a calculation of its lines. Much of the computer modelling was undertaken by Dr Julian Whitewright and Pat Tanner from Southampton University, who used 3D scanning to create the computer model that'd be used to build the ship.

The rebuilding of the Sutton Hoo Ship is being undertaken by the Sutton Hoo Ship's Company – a team of around 80 specialists and volunteers – in the town of Woodbridge, in the Longshed, which is located on the opposite side of the River Deben from Sutton Hoo. Project Manager Jacq Barnard described what they hope to achieve: "Our aim is to understand what the ship was capable of, which will in turn help us to establish how the original was used and

why it was important enough to warrant a burial chamber. From the grave goods, we know that the Anglo Saxons were highly skilled when it came to craftsmanship, but we're learning that their shipbuilding capabilities are awe-inspiring. While it may look simple in profile, when it came to construction the ship was incredibly advanced."

Overview of the ship

The clinker-built Sutton Hoo ship is 26.1m long with a 4.4m wide beam, and built mainly of green oak. The original craft was built with thousands of iron rivets – 650kg in total – and treenails, which are the wooden pegs used to secure things together. Although the lines of the hull's exterior measurements can be accurately predicted, little is known of the internal structure. The original ship was stripped of all internal features, including oars, thwarts – seats – spars and likely the rudder, too. This conundrum needed to be addressed. Master Shipwright Tim Kirk and his team are tasked with calculating measurements such as the height of the sole – deck – nature of seating arrangements, foot bracing and how the ship was steered.

Tim calls this "reverse engineering." He uses the tholes – oar pivots – among his approaches to deduce some placement of the ship's missing features. A half physical section of the midships and a one-fifth scale model of the ship were also built to aid understanding of the construction. The ship will also comprise 26 unique frames – ribs – from multiple pieces of curved timber, some of which are three, two and one parts – cruck frame. The framing will contain the following:

- **Floors** – Cross the centreline and provide much traverse strength;
- **Futtocks** – Attach to the ship's floors and frame sides;
- **Rongs** – Combining a floor and futtock.

Anglo-Saxon tools

As far as possible, traditional methods of Anglo-Saxon ship building, using tools from that period, are being used. Little evidence exists on the Anglo-Saxon use of saws; instead, they appear to have relied on a variety of axes to cut and shape their wood. Some of the notable tools being used for the build include felling axes, forest axes and the tee-axe or shipwright's axe. ▶



Partway through lifting the stern-post into place



The tree follows the stern underlute's pattern incredibly well



Alec Newland completing the final profile of the inner face of the stern



Joint between stern underlute and stern-post treenails and caulking

The tee-axes are bespoke and made by Alex Pole Ironworks. A range of mallets and wedges are also used to cleave timber including large 14lb oak-headed mallets. Spoon augers have also been made, which drill the wood – one for the treenails and the smaller one for rivets, and for more delicate work, chisels are used. Tim is astounded at how proficient his team has become with their axe working in just a relatively short period of time.

Keeping the build authentic

Tim explains how Julian Whitewright and Pat Tanner produced the computer model and the fair lines for his team. Tim's team then lofted – drew – these to full size. "We started with the ship's cross-section followed by the ends and made full size patterns, so we could then go into the forest and find the right trees. The build uses large green oak and finding the appropriate timber up

until now has proved challenging," he said. For example, the keel log took 18 months to find. The oak is largely donated, with much coming from major estates in East Anglia. Tim estimates that it'll take between 12 and 20 oaks to complete the ship, but a lot will depend on finding the right curved timber. The project makes use of modern technology and machinery, but Tim is determined to keep this influence to a minimum in a bid to ensure the building process is as authentic as possible.

The 'molds' – temporary softwood frames – were installed to maintain the ship's shape during the build. Saxons wouldn't have used them, but as Tim explains, they ensure the integrity of the Anglo-Saxon hull without deviating from the ship's line. The station molds are painted black so they can be digitally removed while a photographic and video record is made of the ship in-build, without the need to remove temporary parts for filming.

The ship's backbone took over 2,000 hours to complete, and much of the work has involved using axes to work the timber. The ship's keel was first laid down. The overall backbone consisted, essentially, of five components: stem, stem underlute, keel, stern underlute and stern-post. A piece of green oak measuring around 13m x 40cm x 15cm was cut as a blank. "We sawed a blank out of the top-half of that great long log. It was such a valuable piece of timber; I couldn't risk us getting it wrong during cleaving, so we used a chainsaw mill. The keel still wasn't long enough, so extensions called the stem and stern underlutes with natural curves



Splitting the log for planking



A shipwright's tee-axe

were added using stepped scarf joints attached with willow treenails, in order to meet the overall dimensions. The stern underloute was worked completely with axes. The large curved log had V-shaped notches cut out and these were removed using a variety of axes, including the tee-axe, to produce a flat surface. The keel blank was also worked by hand and when completed, placed horizontally on a strongback – a sturdy frame that's very solid and very level. The bow underloute, along with the lower stem, was sawn out of a curved log and finished with a combination of axes and chisels. The underloutes and keel were then bevelled out using chisels for the garboards – the first strake of planks or plates laid on a ship's bottom next to the keel. Next, the stern-post was hollowed out for the planking, then the molds went on attached with ribbands and stringers to set out the planks' widths. The timber components were then hoisted and jointed into place. The lower stem section was turned through 180° to form the stem's upward thrust and similarly, the aft underloute and stern-post. The stepped scarfs that secure the ship's backbone aren't only attached with treenails but also have joint caulking based on the *Nydam Oak Boat* – a Saxon-era ship

discovered in a bog in Denmark, which is 300 years older than the Sutton Hoo ship.

Tim and his team are already cleaving logs for the planks. "The wedge-shaped sections that come out of the cleaved log will be converted into 25mm planking," he explains. To make these, the log is halved, quartered, then cleaved into eighths and even sixteenths if it's really big. All this planking is needed for the nine strakes – a strake is a complete run of planking – on each side of the hull.

When the build reaches this point of construction, the frames will go in along with the strakes. "All the planking is unique; there's no uniformity of width or curve. They're all different and they all change, particularly in the ends of the lower streaks. On these there's probably 50 or 60° of twist as well as curvature," Tim comments. The five lower strakes will go on first along with the lower permanent framing. Next, the upper planking and framing will be added before the molds are removed. The ship will then be fitted out with sole – deck – sole bearers, thwarts to sit on and a side rudder, all of which are reverse-engineered from the tholes' positions. Besides construction of internal features, a number of experimental oars will be made of various lengths and shapes, in order to determine the best design.



Initial lifting of the stern-post

The anomaly

The ship is believed to have 20 benches suitable for 40 oarsman, but during the 1939 excavation, archaeologists couldn't find the tholes in the middle of the ship. Were they removed to build the burial chamber or could there be another explanation? Tim explains: "It could've been where the King and his retinue sat; it might've been for cargo or it was possibly also a sailed ship, and that's where the rigging went." We'll never truly know. From a rowing ►



Stern-post once erected



Knotting out a piece of planking



A treenail is hammered in to join the first two parts of the keel on the replica ship



Molds going on the main build – at the side is the fifth-sized model

perspective, the best position for this is in the middle but future trials may help to establish the way the boat was manoeuvred. In 1993, Edwin Gifford built *Sae Wylfing*, a half-length model of the Sutton Hoo ship in softwood, which proved to sail very well with the wind abaft the beam with a single square sail, but she wasn't so impressive going to windward.

Looking to the future

Tim is amazed at what the build has revealed so far in terms of Anglo-Saxon craftsmanship: "What we're discovering in terms of the ship's technology and design, particularly techniques and craft skills, is that they were fantastic craftsmen." If all goes to plan, the Sutton Hoo Ship's Company is hoping to launch in 2024. Extensive sea trials will take place, which will allow them to see what the ship and crew can do in terms of performance on river and ocean, as well as its handling of wind and tide.

Hopefully, this will resolve the long debate as to how the ship was propelled, be it by oars, sail or using a combination of both. Answers will also be forthcoming in terms of the ship's use and what she might have carried. Trials will also determine safe sailing conditions, and therefore, where the original vessel might have travelled. ✂

FURTHER INFORMATION

The Sutton Hoo Ship's Company –
www.saxonship.org

Tours are available and it's possible to sponsor a rivet for someone's birthday or Christmas present, or to mark an important anniversary

Anglo-Saxon artefacts can be seen at the Sutton Hoo Ship burial, in room 41 of the British Museum



It's hoped the replica will be completed by 2024



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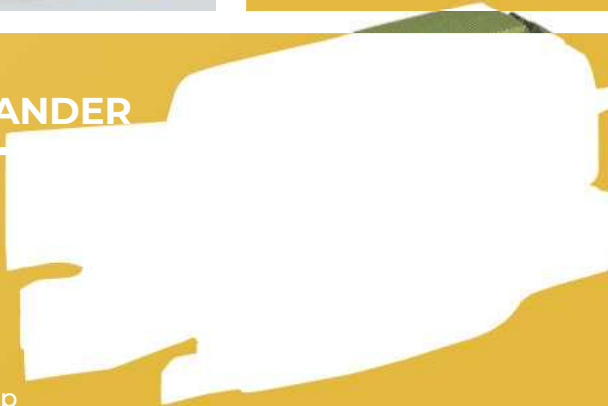
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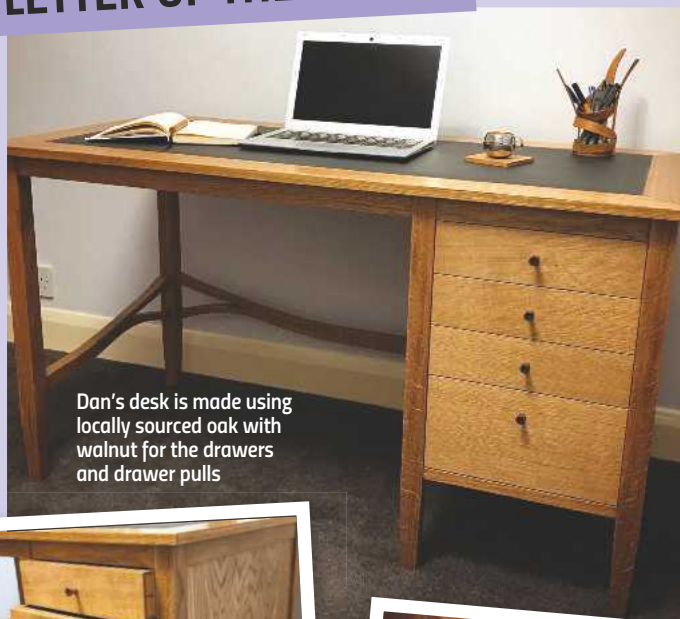
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LETTERS

★ LETTER OF THE MONTH



Dan's desk is made using locally sourced oak with walnut for the drawers and drawer pulls



Traditional hand-cut dovetailed drawers



Steam-bent oak rails, which split to create a strengthening brace

DESK IDEAS

Dear Tegan,

In response to your welcome page in the May issue, I'd like to wish you good luck with the move and hunt for your dream desk. I'm attaching photos here of a writing desk commission I undertook in 2020, using locally sourced oak and walnut for the drawers and drawer pulls. I wanted to design and incorporate sweeping steam-bent curves into a more formal piece, giving a subtle elegance. The design incorporates a combination of traditional hand-cut dovetailed drawers, bookmatched panels to encase the drawers and steam-bent oak rails, which split to create a strengthening brace. The rails were then refined using a compass plane and spokeshaves for the curved sections, and bench planes for the straight sections. For the top, I used ply edged in oak with a Linoleum leather covering. The timber was originally sized by machine, but all joinery then worked by hand. The completed desk measured 1,220mm wide x 590mm deep x 685mm high. You can see more pieces on my Instagram page: [@decarpentryltd](https://www.instagram.com/decarpentryltd). Best wishes, **Dan Evans**

Hi Dan, thank you for sending in photos of your desk, which I must admit is an absolute beauty! The hunt continues for mine, but you've definitely given me some food for thought! I love the two contrasting timbers and the turned drawer pulls are a lovely addition. It's clear to see that a great deal of work went into this commission and I can't help but feel very envious of its owner! This is a fantastic example of classic furniture making with a modern twist, as you've used a variety of techniques in the construction, with everything going together seamlessly. It's elegant indeed and the leather covering will protect the surface from wear and tear, meaning that it'll enjoy a long life and presumably become an heirloom piece. Thanks again for providing me with some much-needed inspiration and sharing your wonderful work with us.

Best wishes, **Tegan**

THREE-LEGGED ELM STOOLS

Dear Tegan,

Whenever I read articles in the magazine showing how a maker has created something original, such as an item of furniture, for example, one of the questions I ask myself is whether they've gone on to make other(s) like it? My three-legged stool project – see April 2022 issue – where the legs were joined by small stretchers and a central sphere, led me to make a few other variants, based on the same design. A recent weekend away in Norfolk resulted in the purchase of a simple, rustic table in solid elm, which I purchased from a large antiques/vintage emporium in Norwich.

In my article, I stated that I was on the lookout for more elm, which is becoming expensive due to Dutch elm disease. At £20, the piece seemed reasonably priced. Peppered with woodworm and including hidden metal fixings, I managed to obtain five seat blanks of varying sizes from it, one of which was used to make another stool. The other stool seat was made from thicker section quartersawn oak, complete with characteristic medullary ray patterns. I gave one as a wedding present and kept the other. On reflection, this project is perfect for the home woodworker looking to make a useful item. With regards to timber types, leg and stretcher profiles and seat dimensions, the possible variations are infinite. The stool design can be completed using only a few hand and power tools, plus small lengths of timber offcuts. The only machine required, although not essential, is a lathe, which, if desired, can be bought second-hand for a reasonable price.

The three-legged stool is completely stable and earlier versions have been used for various uses, including bedside and lamp tables, a convenient step up, and of course, seating. I'd love to see if any other readers have made one, and if so, please get in touch with the Editor and share your photos.

Best regards, **Glenn Perry**



Two further stools based on Glenn's three-legged concept: left – with an elm seat; right – with a thicker seat in quartersawn oak

Hi Glenn, it's great to see that you were able to track down some more elm, and as you say, at a fair price. Given the fact it yielded five seat blanks, it certainly seems like a good deal! The design is simple yet effective and as you say, can be modified and used for a number of different projects. If any readers have made their own three-legged stool having seen Glenn's article, please feel free to share these with us; we'd love to see your interpretations. Many thanks!

Best wishes, **Tegan**

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 X-in 30-piece Router Cutter Set, worth over £100.

Simply email tegan.foley@dhp.co.uk for a chance to get your hands on this fantastic prize – good luck!



KOLROSING & PYROGRAPHY



In Iain Whittington's recent article on Kolrosing – June 2022 issue – he shows how 'koling powder' can be mixed with a little oil, then rubbed into incised line-work using a gentle, circular movement, to create a simple decorative design

Dear Tegan,

Iain Whittington's interesting article on Kolrosing – June 2022 issue – prompts me to point out that a similar ability to 'engrave' wood can be achieved through the practice of pyrography, or wood-burning. In a similar way, the pattern is transferred onto the wood using carbon paper to create a general outline and relative position of items in the picture. Rather than metal engraving tools, however, electrically-heated blades of different forms are used to surface burn the wood to create the desired image.

Attached is one that I created, taking inspiration from a Vietnamese pen and ink picture, which I discovered online.

Best regards,
Dr Colin R. Lloyd



Colin's recent pyrography project, inspired by a Vietnamese pen and ink picture, which he found online

Hi Colin, thanks for your email and for highlighting the similarities between these two decorative techniques. It'd not occurred to me that Kolrosing is essentially the same as pyrography, but using hand methods. Indeed, prior to Iain's article, I was unfamiliar with this practice, but hopefully it'll go on to inspire readers and entice them to have a go at this age-old technique. Pyrography may be more popular, but the skill required to effectively use the tool and tips to best advantage is great and undoubtedly calls for a degree of artistic ability, which you've very well demonstrated in the piece shown here. In the next issue, we have a test on the Antex Fire Writer pyrography kit, which is easy to use, solid and powerful, as well as being suitable for beginners and professionals alike. Many thanks again.
Best wishes, Tegan

READERS' HINTS & TIPS

AXMINSTER TOOLS
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Due to major stock issues with the Veritas range, a decision has been made, in conjunction with Axminster Tools, to substitute the original prize for a similar one within Axminster's Rider range. Rider planes represent traditional, quality plane manufacture and feature a ductile iron alloy body, accurately ground sole and carbon steel blade. The new prize – the **Rider No.5¹/₂in Jack Plane** – is not only versatile, but also perfect for flattening, jointing and general preparation.

To be in with a chance of winning this great piece of kit, just send your top workshop hints, tips or pointers – indeed anything that other readers may find useful in their woodworking journeys – to tegan.foley@mytimemedia.com, along with a photo(s) illustrating your tip in action. For more information on Axminster Tools, see www.axminstertools.com



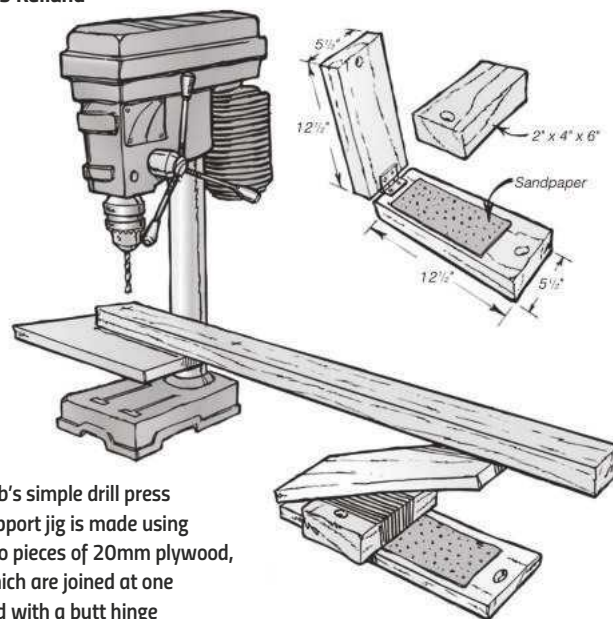
DRILL PRESS SUPPORT

Hi Tegan,

When using my bench-top drill press with long pieces of wood, I often run into trouble holding the stock level as I drill one end. To remedy this, I made a simple support jig using two pieces of 20mm plywood joined at one end with a butt hinge: this covers the full range of adjustment for my drill press table.

A 150mm long piece of scrap 2x4 timber serves as the adjusting block. It can be used flat or on edge, depending on the angle required. I glued a piece of medium grit abrasive onto the jig's lower flap, to keep the block from slipping when the weight of the stock is applied to it.

Bob Kelland



Bob's simple drill press support jig is made using two pieces of 20mm plywood, which are joined at one end with a butt hinge

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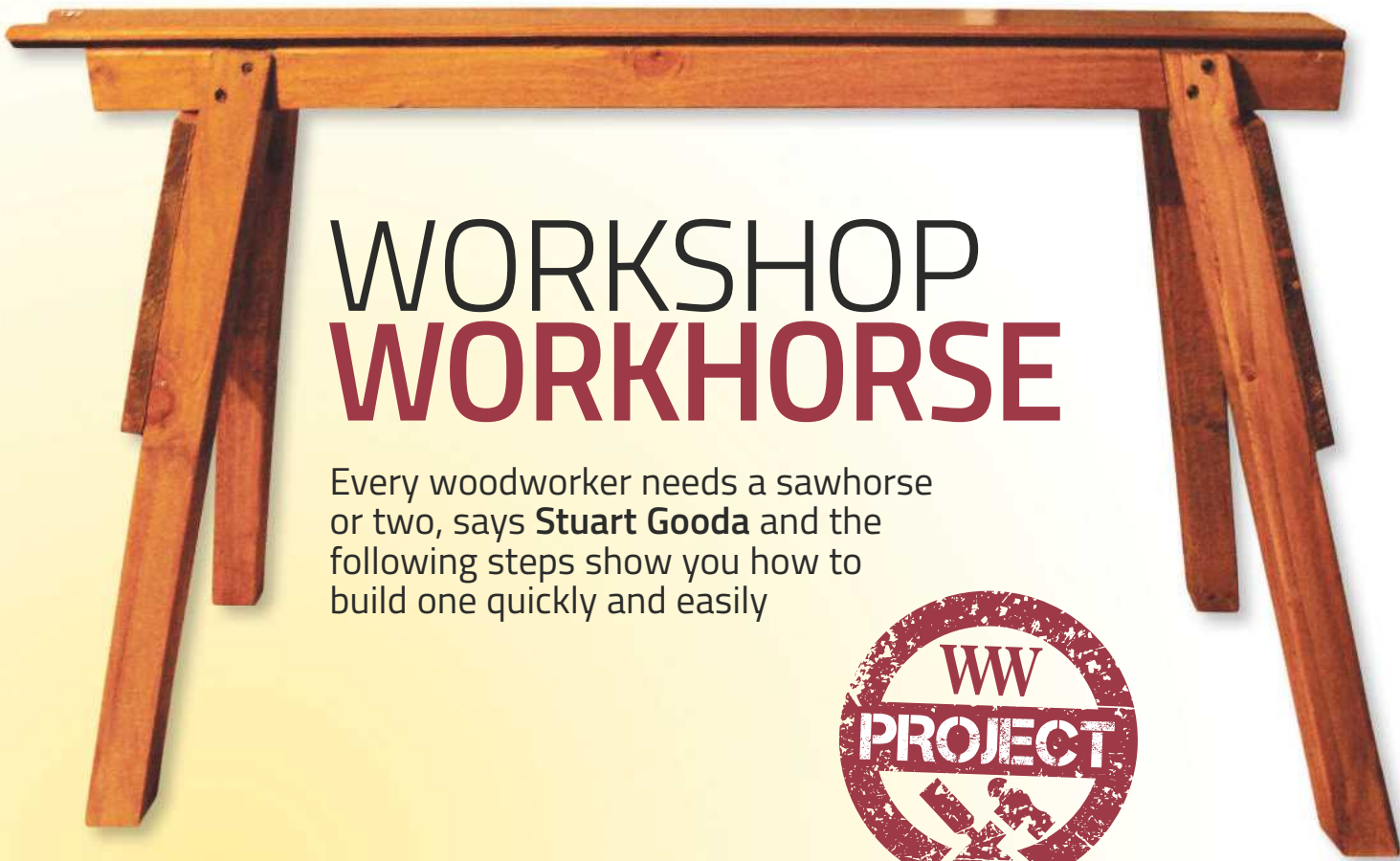
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WORKSHOP WORKHORSE

Every woodworker needs a sawhorse or two, says **Stuart Gooda** and the following steps show you how to build one quickly and easily



The sawhorse – everyone should have at least one. They make excellent benches, inside or out. All you need is a piece of 4x2, 900mm long, four pieces of 2x2, approximately 630mm long, and an offcut of ply for the end gussets.

The only thing you need to know is that the sawhorse depends on one bevel – the 1 in 4. Nothing else is required, just careful marking for the splayed legs and their seemingly difficult compound angles, which appear trickier to set out than they actually are.

Bevel action

The first step is to take the 4x2, cut squarely to length, and mark a line 90mm in from each end so that it's square across the timber. Now set the 1 in 4 bevel and mark back at each end of the timber.

Place one of the 2x2 leg pieces, hold it on the previously marked ends, and create a second line. Mark this leg 'A' as well as its top. Take each leg and mark all around, lettering each as you go until all four are completed. Next, on the very top of the sawhorse, mark in where one leg is to be 20mm, and carry this onto the other legs.

On the underside, mark a 10mm line; this will provide sufficient angle for the legs to splay when sitting in their cut-out housings. Make three saw cuts in joint 'A' and chisel out the waste down to the line, leaving a clean



1 To make your bevel board, mark out on a scrap of timber. Set the bevel as your guideout



2 Cut to the line, including a central cut to make waste removal easier; clean up with a chisel



3 Lay the leg into the housing to achieve a tight fit, then draw around it



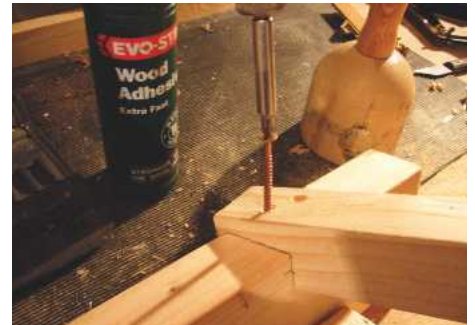
4 All marked out and ready to cut the first housing. Remember to label clearly



5 Housings cut ready to receive a leg. Clean up with a chisel if necessary



6 Using a bevel, check your cuts are true. Practice makes perfect here!



7 Apply glue then pre-drill and countersink to allow for 75mm screws



8 Check with the bevel and squeeze, if necessary, before starting to screw leg to ply gusset



9 A good test – perfect for a tea break before the final staining stage



10 The finished sawhorse ready for many years of hard work

housing. As before, repeat this step for each of the joints.

That's clever

Now for the clever part: lay leg 'A' into its housing 'A' – so you have a tight and firm fit – and draw around it. Remove leg 'A' and continue the lines around until they meet. You'll have the splayed cut marked on top of the legs. Cut to the line and clean up with a chisel. Now leg 'A' should be a perfect fit for housing 'A'. Continue this process for the other three legs. Temporarily fit all legs into their housings and at this stage, you should have a very wonky-looking sawhorse that's badly in need of some glue and screws!

Next, pre-drill/countersink all legs to take a 75mm screw, squirt a little PVA glue into the housings and secure each leg in place. The job's not yet finished, so don't worry if

the construction still looks slightly lame and lopsided.

Ply gussets

Cut ply gussets to the 1 in 4 bevel on one side, then glue and screw them into one leg and mark from the underside of the top with a 1 in 4 bevel. Now try and splay the leg as near as you can to the line. Remember, the more you push, the more likely you are to open up the top joint, so be careful when doing this.

Locate as near as possible to the line, repeat for the other end and fix in place with glue and 38mm screws. Trim the ply and plane flush. Don't worry if you can't achieve the exact bevel for the legs.

Cut off the leg protrusions above the sawhorse top and plane flush if required; any minor gaps will be covered by a sacrificial top. Stand the sawhorse somewhere flat and

place a level on the top, blocking up the legs if necessary. Take an offcut of timber, 38mm thick and draw around the bottom of each leg, leaving the correct angle to cut off. When all four are cut, the sawhorse should stand level although it might require a little more planing.

Sacrificial top

Lastly, fix a sacrificial top measuring around 950mm long x 20mm+ thick to protect the sawhorse, screwed 100mm in from each end, well sunk below the top's surface. Apply a coat of paint, stain, or whatever takes your fancy.

Job done – and it's a fine sawhorse to work on, stand on, or even sit on while enjoying a cup of tea during your working day. What's more, if you make two, the second should turn out even better than the first. Place an old door or work surface on top and it'll also double up as a handy bench! ✂



WILD WOOD



Drawing on his fascinating seafaring and boatbuilding past, **Roy Gollop** of **Lyme Bay Carvings** creates hand-carved driftwood sculptures that depict subjects from the animal kingdom, most notably sealife and birds

Lyme Bay Carvings – www.lymebaycarvings.co.uk – showcases the work of Lyme Regis craftsman, Roy Gollop. A member of one of Lyme's oldest seafaring families, he began his maritime career as an apprentice boatbuilder in 1946 before enlisting in the Royal Marines where he was responsible for landing craft operations before becoming Senior Instructor of Seamanship. Roy returned to Lyme Regis and managed the family fishing business for several years until he finally reopened the toolbox to build clinker dinghies and working boats for locals.

Now in his 80s, Roy has turned his many creative talents into producing desirable wooden carvings and sculptures. He's also a visiting instructor and mentor at the Lyme

Regis Boat Building Academy and the National Maritime Museum in Cornwall, where he passes on his extensive skills and knowledge, preserving the art of traditional boatbuilding for generations to come.

Roy takes inspiration from his love of all things coastal and balances his understanding of the properties of wood with an appreciation of flowing lines and form. A such, he's been able to develop an individual, unique style and although he feels details are important, Roy believes it's essential for wood's warmth and natural beauty to be able to shine through.

Roy's passion for wood and the beauty he sees in his subjects enables him to dedicate the countless hours necessary to creating each piece. Taking immense pride in his work, from the initial phase where a subject is visualised

from offcuts of wood or driftwood collected from the beach at Lyme Regis, he then moves on to shaping and texturing before producing the finished carving.

Roy's subjects are often found in the animal kingdom, where he favours birds and sealife. His ultimate aim and desired outcome is to capture the spirit and essence of the creature in carved form.

Background

In terms of tracing his ancestry, Roy is able to go back as far as his grandfather and great grandfather, both of whom were seamen and fishermen, who fished as far away as the Newfoundland banks. "I just followed on," explains Roy, "I was almost born on the beach, and worked from childhood age. ►



Roy's clinker-built dinghy



Driftwood sculpture depicting a cormorant



Roy describes his workshop as somewhat "chaotic"

I was in a boat before I ever went to school, and just carried on from there."

Upon finishing school, Roy completed his boatbuilding apprenticeship and wishing to branch out and deviate from his roots, decided to join the Royal Marines aged just 17. He went on to become Sergeant Major and owing to his seafaring family connection and interest in boatbuilding, went into landing craft: "First of all you had to do a general service commission as a commando and after that, in two and a half to three years' time, you were allowed to specialise. I went on reserve for a little while before finishing up in 1962."

Boatbuilding

Roy tells us that his family owned a fleet of hire boats, which they worked from Cobb Gate beach. Learning to row a boat before he started school, he'd seen his father varnishing and repairing the boats, then the war came and they all had to be taken off the beach. "There were several jobs we had to do on them," Roy explains. "My father would repair one boat at a time and I'd watch and help him while he was riveting. We did woodworking at school but I had no formal training; I just picked it up and went on to produce my own 10ft clinker-built dinghy." Roy sourced the timber for £5 from a sawmill at Wilmington and bought the copper nails for £1 from Lavis of Exmouth, who he'd later go on to work for.



Hand-carved driftwood sculpture depicting a kingfisher

"It was just a natural thing for me," says Roy, "so I went on and built it. It wasn't perfect by a long way, but it floated and my father used to hire it out to courting couples after the war as they always wanted a smaller boat. It was let right until my wife and I got married, then I sold it for £20, which covered the cost of beer for the wedding; in actual fact, I even had change!"

From this point and on leaving school, it was a natural progression for Roy to go on to become an apprentice boatbuilder at Lavis: "We built a small boat in 7-10 days and there was a lot of work going on for the admiralty at the time: cargo boats, 27ft whalers, 32ft cutters and 40ft pinnaces. Both the whalers and cutters were clinker-built, the pinnaces carvel-built, and some of them were double-diagonal built, so there was plenty of work. They were all fishing boats, working boats or admiralty boats," he explains.

Discovering carving

In contrast to carpentry where you're fitting squares on squares, with boatbuilding, you're continuously fitting round on round, as Roy explains: "During my time at sea, I always watched the wildlife, which led me to contemplate the movement of fish and birds. In turn, this allowed me to look at wood in a different way and consider working with the grain."

Roy likes to look at a piece of wood without predetermining what it's going to become,



Various hand-carved manta ray sculptures mounted on driftwood bases

while at the same time, allowing it to show him. "The design seems to work out of the wood when I begin to carve it," he comments, "and I let the grain dictate which way it wants to go."

One of the first pieces Roy carved, some 30 years ago, was a rocking horse for his granddaughter. At the time, he was making fishing gear but that got a bit quiet, which led Roy to start building boats on his own, while at the same time beginning to look at driftwood for carving. For his various pieces, Roy mainly uses Wych elm and carves whales, birds and eagles – anything with any movement – into it. "The sculptures and carvings are predominantly inspired by my experiences at sea," Roy confirms.



Roy with one of his swordfish carvings, pictured here outside the workshop



Roy joined the Royal Marines aged just 17



A rocking horse made by Roy many years ago

For the carving process, he uses a selection of gouges, chisels, rasps and saws, but mainly gouges, which he cites as being his favourite pieces of equipment: "I do a lot of work with gouges and prefer hand tools to power tools." With nature as his primary focus – whether in the form of birds or sealife – Roy constantly endeavours to recreate movement in his carvings.

In terms of the subject matter depicted in his work, Roy explains that every carving and sculpture is completely unique, so if he's working on something simple and the wood doesn't require much hand-tooling, this will be fairly quick to finish. "I've got to admit," says Roy, "that the less I do to a piece of wood, the more attractive it is to the customer."

The most labour intensive piece Roy has produced to date is an abstract sculptural depiction of an eagle catching a salmon, which is struggling to make its way out of the water. "That took a long time; I would say about a fortnight," he comments. I also discovered that Roy is a fairly harsh critic when it comes to his own work, commenting that: "If I'm not satisfied with a piece once complete, it goes on the bonfire!"

Workspace

Describing his workshop as somewhat "chaotic," in addition to carvings, it's also home to coils of rope from his rope work, a pile of driftwood as well as an in-progress painting featuring



Lobster pot making – a tradition Roy is very eager to keep alive

carved whales and sea lions. Roy is also working on a new piece, which depicts an old wooden pile jetty piece; this has a driftwood base that'll go on to become the sea as well as featuring some birds or other wildlife – something that's very important to Roy. "I occasionally have a blitz and clean up," he says, "but I suppose a lot of it comes from when I was an apprentice at the boatbuilding sheds down in Exmouth; they never had a concrete floor – it was just dirt, and once you started a boat it was considered bad luck to clean up. Also, if you cleaned up all the wood shavings, that was the only insulation you had for cold feet."

Old traditions

If anyone reading this has been inspired by Roy's story and boatbuilding escapades, and would like to know more about how it's done, get in touch with the Boat Building Academy – www.boatbuildingacademy.com – where Roy is a visiting instructor. "There's one thing



An impressive driftwood collection

I always tell the lads there," he comments: "To remove the wood they don't want as quickly as possible – you never chop if you can saw; you never plane if you can chop, and you never sand if you can plane."

Besides making driftwood sculptures, Roy's other hobbies include working with rope, twine and netting, which is another big part of his life: "I make mooring rope, parts of trawls, fishing gear and lately I've been making dog leads, which are proving very popular," he says.

When winter arrives, Roy also cuts the willow and makes lobster pots – another skill passed down to him. Apparently, there are only two people locally who can still make these and Roy is eager to keep this tradition alive and pass this knowledge of yesteryear on to the next generation.

No matter what he carves next, we're confident that Roy will continue to be guided by nature and wood in its rawest form – a material that's very close to his heart. ✂



Hand-carved ornamental sailing boat in elm and oak...



... and another in mahogany and ash



Hand-carved driftwood sculpture depicting a tern emerging from the sea

FURTHER INFORMATION

Find out more about Roy and see further examples of his work by visiting the website: www.lymebaycarvings.co.uk

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THERMING: AN AGE-OLD METHOD

Using a dedicated therming jig, exact duplicates of three, four or more can be made, as **Andrew Hall** shows here

Dating back to the 18th century, therming was originally mentioned in a letter to Thomas Jefferson from Nathaniel Colley, back in January 1791, on the delivery of 'tables from London with therm'd legs'. Therming is a technique used by woodturners to simultaneously create multiple copies of spindles and table legs. Often described as offcentre spindle turning, it's also known as drum and barrel turning.

Therming allows a woodturner to make exact duplicates of three, four or however many spindles a therming jig can hold. These can be made with a centre shaft or just end plates.

This particular jig includes individual turning blanks, which are separated by gaps when mounted between end plates. These result in a process called 'turning air', where the cutting action occurs intermittently as the turning blanks rotate past the cutting

tool. Production therming jigs often hold 20 or more spindles at a time.

Why therm spoons?

When I demonstrated for Record over in Stuttgart, I met a German woodturner called Ralf Domino, who was showing how to use a therming jig. I'd never heard of one before, but was fascinated by the fact he was able to turn six spoons at a time.

During the course of the two-day event, I produced a Blues Bowl and gifted it to Sven Meyer – whose stand we were demonstrating on – to keep in their showroom, and in return, he presented me with a therming jig.

Ralf kindly gave me a lesson on the correct use of a therming jig, which I'll go on to share with you in this month's article.



TOOLS USED

From left to right: 25mm spindle roughing gouge; 10mm bowl gouge with swept-back grind; 10mm spindle gouge with swept-back grind; Colwin Way skew chisel; 3mm parting tool; 20mm scraper with negative rake; round carbide tool



1 Here I'm processing a wind-blown ash tree, brought down in the storms of February 2022, which was used to produce the bowls shown in my last article – see May 2022 issue. Using the new DeWalt cordless 54V chainsaw, I cut the tree into blanks. A YouTube video documenting the unboxing and use of this tool can be viewed here: <https://youtu.be/tQkeSOD950k>



2 I prepared the blanks, then cut them square using a circular saw and planer/thicknesser for the purpose of this demonstration. I made these from both sapele and ash. Here I'm finding the exact centre of one of the blanks, which were all cut to the same length and accurately marked out



3 Using the Colwin Way skew chisel, manufactured by Crown Hand Tools, I roughed down the square until it was round, with the largest cylinder possible. The skew chisel is a lovely tool and this is a great opportunity to practise its use. Record Power's new Hawk and Falcon 10mm multi-point drives were used to hold the spindles between centres



4 Using both Vernier and bow callipers, I gauged the size of the tenon to ensure a good fit into the therming jig's sockets. In this case, they were 35mm diameter x 12mm long



5 Using the 3mm parting tool and bow callipers, I turned the tenons down to size. Safety note: if checking the size while the material is rotating, always ensure the callipers have rounded ends. However, if in doubt, stop the lathe and do this while the lathe is stationary



6 I used the Vernier callipers to size the maximum diameter – in this case, 45mm. I started with a 49mm square blank so that the size of sphere could be marked on the end of the spoon



7 Next, I marked out the diameter of the circle to create the sphere, then measured the size of the handle at the neck of the spoon, which was 10mm



8 I cut a dentil in each end of the sphere, then used the Paul Howard sphere calculator to establish the size of the 45° cut required to turn the sphere. You can download this handy workshop aid from Paul's website: www.paulhowardwoodturner.co.uk

Making Spheres Paul Howard

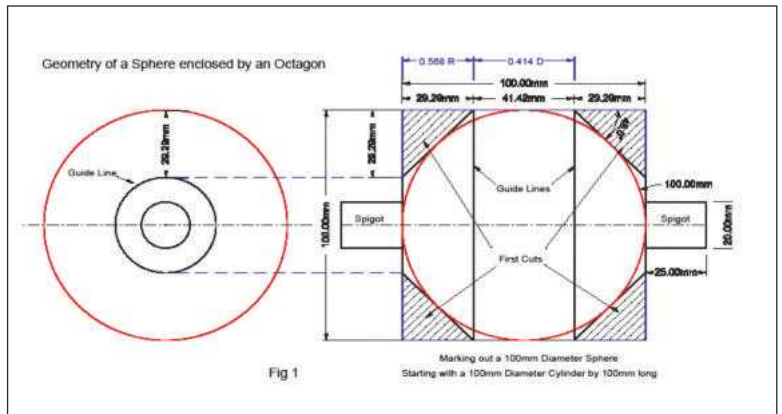
Preliminary Cuts For Turning Spheres

Dimensions of tangent cuts for turning Spheres
All dimensions in mm

Formulas
A = Diameter x 0.29275
B = Diameter x 0.10767

Diameter	A	B	Diameter	A	B
10.000	2.928	1.077	105.000	30.739	11.305
15.000	4.391	1.615	110.000	32.203	11.844
20.000	5.855	2.153	115.000	33.668	12.382
25.000	7.319	2.692	120.000	35.133	12.920
30.000	8.783	3.230	125.000	36.594	13.459
35.000	10.248	3.768	130.000	38.058	13.997
40.000	11.710	4.307	135.000	39.521	14.535
45.000	13.174	4.845	140.000	40.985	15.074
50.000	14.638	5.384	145.000	42.449	15.612
55.000	16.101	5.922	150.000	43.913	16.151
60.000	17.565	6.460	155.000	45.378	16.689
65.000	19.029	6.999	160.000	46.840	17.227
70.000	20.493	7.537	165.000	48.304	17.766
75.000	21.956	8.075	170.000	49.768	18.304
80.000	23.420	8.614	175.000	51.231	18.842
85.000	24.884	9.152	180.000	52.695	19.381
90.000	26.348	9.690	185.000	54.159	19.919
95.000	27.811	10.229	190.000	55.623	20.457
100.000	29.275	10.767	195.000	57.086	20.996
			200.000	58.550	21.534

This chart can be used to get a rough shape prior to using the Sphere Jig



9 The above excerpts are taken from Paul Howard's sphere-turning PDF, reproduced here with kind permission



10 I marked 13mm in from each end, cut an angle of 45°, then created a semicircle bead to form the sphere. I cut mine by hand, although a sphere turning jig can also be used. Again, see details on Paul's website

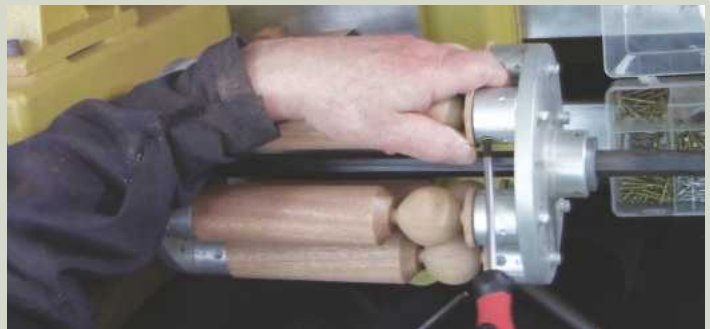


11 Using 180 and 240 grit abrasives and having made a semicircular plywood jig, I proceeded to sand the sphere



THE THERMING JIG

12 The jig is formed from two pieces of machined aluminium plate with six sockets on each, which are lined up using a hexagonal bar held between centres. All components are secured with 6mm Allen studs. Each plate is multi-centred, meaning it can be used for two up to a maximum of six spindles



13 I turned another five spoon spindles and secured them into the sockets with 12mm x 4 gauge good quality screws. I typically use Spax and Turbo Gold screws from Screwfix, which are secured in place with a hand-held screwdriver. While this method takes longer, it does allow for greater control and less splitting



14 With the lathe set to approximately 600rpm up to a maximum of 800rpm, I turned the first shape on the spoon handle using a spindle roughing gouge followed by a Crown M42 25mm gouge



15 I used the wing of the 10mm Crown M42 swept-back gouge to fine-tune and achieve the best cut possible from the tool. As shown in my previous article, this is used in shear-cutting mode



16 I rotated each piece 90° a further three times and used the same tooling process to achieve the desired shape for the spoon handle. Note: I placed masking tape on each edge of the faceplate as I didn't want to mark the aluminium with permanent marker



17 I placed each one in the Record Power SC2 chuck with 35mm jaws and as before, sanded to 240 grit, finishing at 320 grit



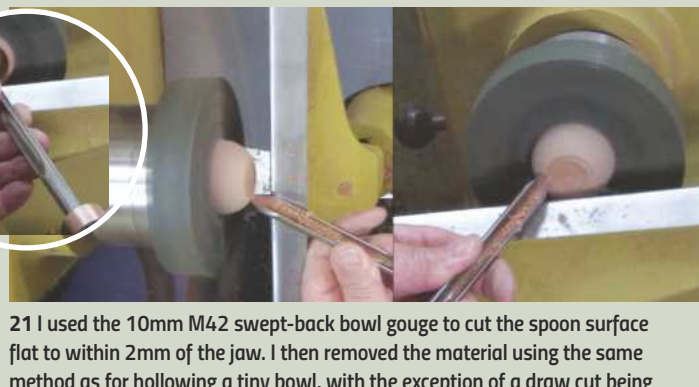
18 Using the Simon Hope sanding arbor and working through the same abrasive grits up to 320, I sanded and refined the handles. Note: you may notice that I've swapped the tailstock centre to a cone centre and the chuck shown is now an Axminster Evolution fitted with C Jaws



19 I used a set of Record Power 62378 soft jaws and turned a jig to hold the spoon's sphere in a small bowl. I found the best tool for turning the soft jaws was the Crown carbide tool fitted with a round cutter, undercutting the jaw with an M42 scraper ground to a negative rake



20 Next, marking with a Sharpie pen, I cut a recess in two of the jaws to take the spoon's handle



21 I used the 10mm M42 swept-back bowl gouge to cut the spoon surface flat to within 2mm of the jaw. I then removed the material using the same method as for hollowing a tiny bowl, with the exception of a draw cut being used on the bottom 3mm of the wing. Note: this could also be carried out using a carbide tool



22 For final sanding and to finish the spoons, I used the Simon Hope long-reach sanding arbor mounted with a 320 grit abrasive disc



23 Here's a selection of completed sapele and ash spoons, which give a hint as to the subject of my next article in the September issue; this will document the turning of a small bowl and wine goblet ✂



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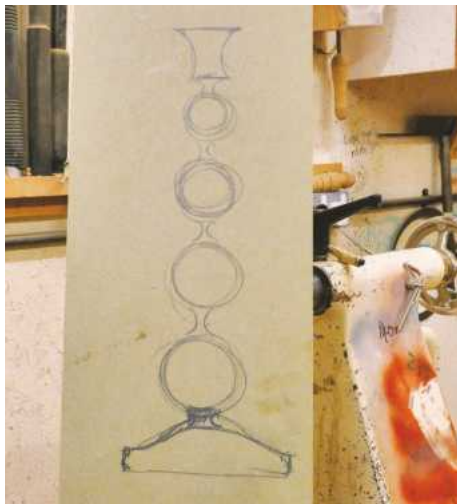


CHASE THE RAINBOW

Les Thorne's lamp base, turned from ash then sprayed using various coloured spirit stains, is sure to brighten up any room

I do a lot of work for lighting companies, making components such as wooden bases and tops for mixed media lamps, and this design is one that I've seen in glass with stainless steel inserts, so I thought I'd try it in wood. While making this lamp base, I kept coming up with different options for the finished piece, such as plain wood, or texturing the spheres, but I finally settled on the bright spirit stained spheres with black inserts. Some comments regarding the design have been positive, although someone did say it looked like it'd come from an Early Learning Centre shop! Ideally it would need to fit in with a certain kind of décor, and I think that the type of shade used could make or break the finished result.

When making lamps commercially, I used to drill the centre hole with a gun drill as I found the commercially available augers weren't really that quick and effective, that is until I discovered the Evolution series from Axminster Tools, which is the system used to make this project. The auger is a joy to use and drills easily through even the hardest of timbers.



1 You can see that I failed technical drawing at school! I drew a rough sketch of the design I had in mind; this was more to achieve the correct proportions as opposed to producing a working drawing



2 I chose to use ash for the lamp base as it's a timber that presents various options in terms of texturing and staining. The downside is that the timber's open-grained nature can cause the colours to bleed into one another



3 To drill through the tailstock, you need a hollow live centre such as this one from Axminster Tools. As my big lathe has a No.3 Morse taper, I use a converter with the end cut off to convert from a No.2 to a No.3 MT



4 Mount the stem between centres with a normal drive in the headstock. The holes in the live centre will allow the shavings to exit; this prevents the drill binding up in the tailstock



5 This is the business end of the drill, which is designed to work quickly and cleanly. The drill, made from high speed steel, is 8mm in diameter and manufactured by Fisch, so should last a long time if looked after properly



6 I found the best speed to be around 600rpm, but this is timber dependant. The drill will feed itself in with very little effort, but remember to keep removing the bit in order to clear any build-up of shavings



7 Keep drilling until you're just over halfway through. If you find the drill starts to bind or heat up, use a little food-safe oil as lubrication, or alternatively, you could rub a candle on the end



8 When you turn the work around to drill in from the other end, use a counterbore drive – a normal centre won't work here as there's a hole in it. Keep drilling until the hole is all the way through



9 With the piece still held between centres, you're ready to turn the stem of the lamp. Clean up the top with a slicing cut using a skew chisel. The point of the live centre fits in the hole, providing good support for the end of the piece



10 Cleaning across the end exposed a crack in the top. The best way to repair this is with thin CA adhesive. You can see how capillary action has made the glue travel all the way through the split, thus fixing it



11 The spigot for the base needs to be accurate, so here, using a pair of Vernier callipers, I measured the drill that I'd use for this. The cut is made with the 10mm skew chisel until the callipers just fall over the spigot



12 All relevant details need to be marked along the shaft as reference points for turning. As this was the prototype, I just adjusted the design as I went along



13 The 10mm skew chisel is the best tool for cutting away the bulk of the waste. During use, ensure the handle is kept down and lift it into the cut; this ensures the tool is cutting rather than scraping the timber away



14 Once all the fillets are cut down to size, you need to turn the coves in between them. The 10mm signature gouge is perfect for this as its short bevel will easily support the cutting edge



15 Once you've turned all the coves and fillets, it's time to sand them to a finish. Before you go any further, use sanding sealer – nowadays I prefer to use the acrylic spray type as opposed to the cellulose-based variety



16 I chose to spray the fillets black using ebonising lacquer, but I could've painted them by hand. The black can bleed into the ash's end-grain, but I hoped that it wouldn't cause too much of a problem



17 Now to refine the shape. The 13mm signature gouge with its short bevel is the best tool to use for turning the tulip shape on top. You need to carefully work up against the black fillet in order to achieve a crisp edge between the two



18 I used a 10mm round skew to cut the large beads as I experienced less vibration using this tool as opposed to the spindle gouge. The finish left is superb and requires little sanding



19 When it comes to sanding, you have to be very careful not to touch the black. I find sanding in this position to be the most effective as I can perfectly see where I've been and, more importantly, where I'm going



20 This worked pretty well and I was reasonably happy with the transition from black to natural wood. If I wanted this to be absolutely perfect, I'd have opted for a denser timber, such as maple



21 With the stem finished, mount the base on a screw chuck and true up using a gouge. Work the tool from right to left, so that if the timber breaks out at the end of the cut, it'll be removed during the shaping process



22 When using a recess to hold the work, it's important that it's cut accurately. The diameter required is transferred onto the base using a set of dividers



23 I made the recess about 3mm deep; this would ensure that once the lamp was wired up, I could fill the hole with a piece of hardboard of the correct diameter before applying baize to the bottom



24 When making a two-piece project such as this, the 'marriage' between stem and base is very important. The size of the bottom fillet is measured using a pair of Vernier callipers – take care not to damage the painted surface here



25 When marking out something like this, only use the left-hand point of the callipers to make a mark; this needs to line up with the right-hand point. If you allow the right-hand point to touch, they can fly back at you



26 With a drill mounted in the tailstock, begin to drill the base for the stem. If you're careful, you should be able to go all the way through without hitting the chuck. The hole needs to go all the way through to allow the flex to pass out sideways



27 Even though this base is similar to a bowl, I used the 13mm spindle gouge for shaping. Working from small to large diameter means I'm working with the grain and will therefore achieve the best finish possible



28 The spindle gouge will allow you to carry out the fine detailing on the base's edge, and a bead top and bottom will set the shape off perfectly. Remember to cut with the grain: this is often in a different direction than it'd be on spindle work



29 To access any really tight spots, I used a Craft Supplies 9-in-1 tool. Although no longer commercially available, I'm not sure it ever did nine things well, but it does make nice narrow grooves



30 You need a cross hole in the base to allow the flex to exit the side. This is relatively easy to do if you're careful with the drill. A 7mm diameter hole is perfect for most sizes of flex



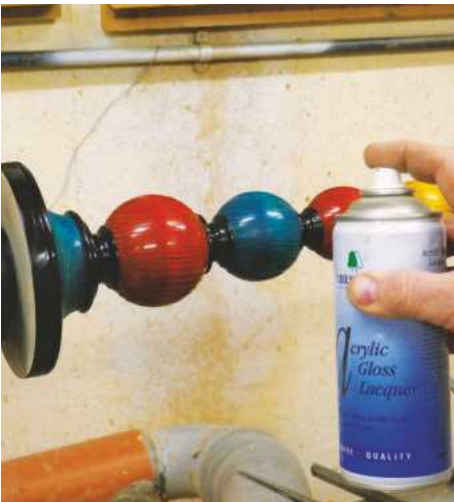
31 After spraying the base with ebonising lacquer, remove the waste wood to leave the bottom and top beads black, then you just need to sand the natural wood to a fine finish



32 I think the lamp looks pretty good with the contrast between ebonised black and natural wood. In truth, leaving it like this would probably make the item more commercially viable than the coloured version I'm making here



33 A good quality stain needs to be carefully brushed on. In hindsight, I might've had more control if I'd used the airbrush to apply the stain. I wasn't sure which beads should be painted a particular colour, but I think I got it about right



34 I feel that a project like this needs to have a gloss finish. The lamp received around five coats of acrylic gloss lacquer with a light cut back between each until I'd achieved a wet look finish



35 It's important to get all your lamps tested by an electrician to ensure they're safe for use. I get each one PAT tested and wired according to current regulations



36 The completed multicoloured lamp base should look something like this ✂



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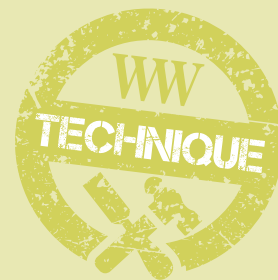


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DECORATIVE CHIP CARVING

Iain Whittington looks at another form of incised work and takes us through the steps for producing a chip-carved panel



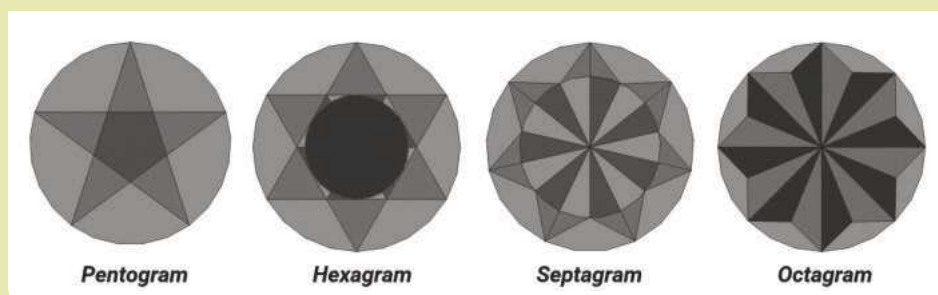
While Kolrosing – see June 2022 issue – can provide elegant decoration and is especially suited to curved objects, a more common form of incised work is chip-carving. In its simplest form, this is based on a triangular cut with a fourth, deeper incision made at the apex to allow the ‘chip’ to be released from the wood. The term ‘chip-carving’ is thought to have first appeared in the English language around 1888, coined by architectural historians, as a transliteration of the German word ‘Kerbschnitt’. It’s an ancient art form, evident in most cultures where there’s a surviving archaeological record. Examples vary from European Bronze Age artefacts, right back to Egyptian tomb goods. It holds a special place in Islamic Art – where depiction of the human form is banned – and was probably taken to Persia – Iran – and Northern India, either through the ancient Greeks – via Alexander the Great – or later by the Moguls.

Geometric designs

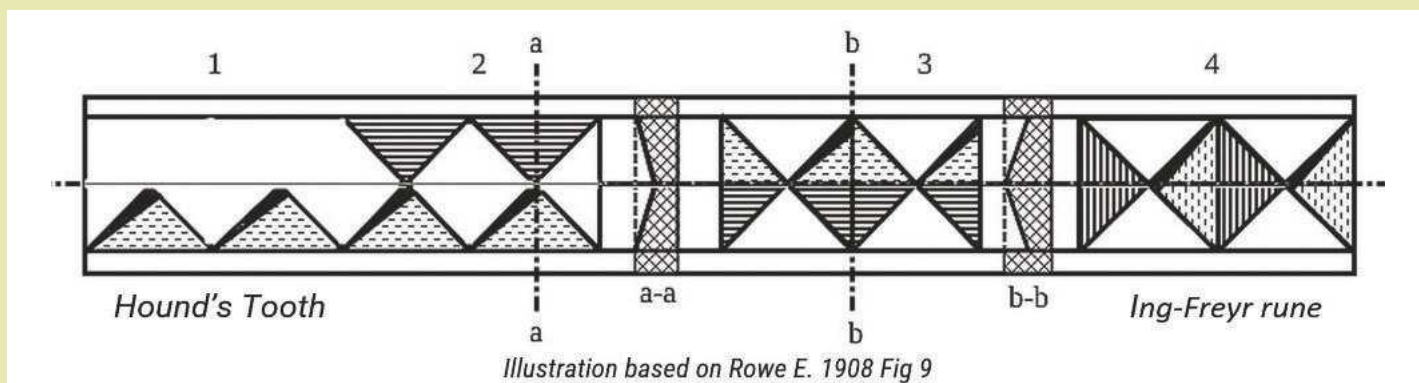
The designs use basic geometry to subdivide rectangles and circles into smaller shapes. For example, **photo 1** illustrates the progression of complexity simply by adding an additional ‘point’ to a star, followed by subdividing to produce a small number of shapes, which can be contained within the bounding circle used in the star’s construction.

The tools required depend on the ‘scale’ of the intended work, as the pattern can be rendered in hardwood, at a small scale, using a knife – the Alpine areas of Europe have developed special varieties for this very purpose. It can also be found in large-scale architectural work, usually in softwood, carried out using chisels.

Detail can be added by simply alternating the chip’s orientation to give four different



1 Various geometric designs can be produced using the chip-carving technique



2 Detail can be added by simply alternating the chip's orientation to give four different borders, so they take on shadow and give the effect of relief – illustrated here in this excerpt from Elenor Rowe's 1908 book, *Chip-carving and Other Surface Carving*



Another example of chip-carving, shown here on a lidded box

3 Basic chip-carving knives

borders, so they take on shadow and give the effect of relief, which is amply illustrated in Elenor Rowe's 1908 book (**photo 2**). Common geometric shapes are squares and circles, which can be simply subdivided as follows: squares into triangles and circles into arcs and sectors. Adding offsets into the mix and a bewildering array of complex patterns can be achieved using basic step-and-repeat techniques. For example, starting with dividing a couple of parallel lines into equal segments – squares – and adding diagonals, which give a sharp tip, you have the basis of many varieties of 'hound's tooth' – shown on the left of **photo 2**. These patterns can either be simply incised with a sharp tip or have the third dimension of relief added by 'chip-carving', to create various 'egg-box' shapes. In its simplest form, chip-carving is based on a triangular cut, which yields four different borders.

In the first section (**photo 2**), they're composed of the same triangular cut but differently arranged. The shaded parts show where the surface of the wood will be removed. In the second, the border is the first pattern reversed and duplicated above the centreline. The first incision should be cut deep at the triangle's apex, and very lightly as it reaches the baseline – see **x-section 'a-a'** on the dotted line at 2. In the third pattern, the diamond is cut into two triangles, the ridge being on the

central horizontal line, as in **section 'b-b'** on the dotted line at 3. Finally, the pattern can be simply rotated 90° with the central ridge now vertical. This sequence results in a very ancient diamond pattern emerging, called the 'Ing-Freyr' rune. This ancient pagan symbol of life and virility crept into early church decoration and was especially common in Gothic ornamentation. Runes and patterns are produced by simple step-and-repeat.

Chip-carving tools

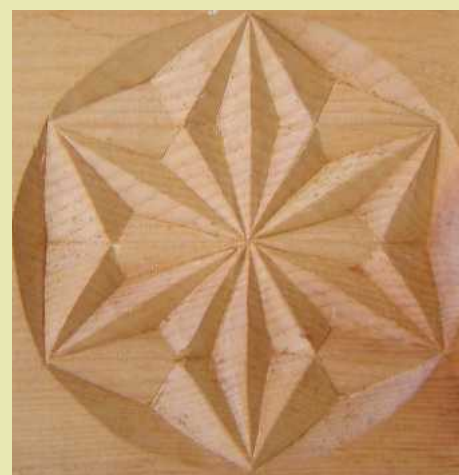
Many different forms of specialist knives have been developed for chip-carving (**photo 3**), but the most popular design – as it provided good control in both straight and curved cuts – is the Alpine style, with a thin straight-edged blade that curves downwards to its point, firmly set in an ergonomic style solid handle. In Central Europe, such knives are often included in basic carving tool sets, where the form is more embedded in local folk art. Wayne Barton, whose writings are highly recommended and more commonly available than the few German to English translations of other reference works, is likely the most significant contributor in terms of spreading the genre outside Europe.

Chip-carved panel project

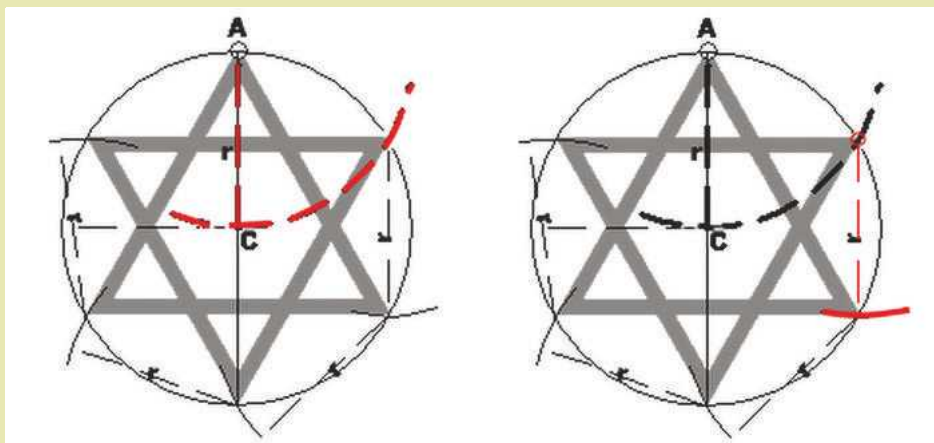
This project is designed to supplement the more common chip-carving instructions,

which use a chip-carving knife, by demonstrating the use of chisels for a larger-scale project.

The majority of self-instruction books on chip-carving are based on the use of a dedicated knife for the production of intricate designs in hardwood, or for fine furnishings. However, larger scale chip-carving is also used for architectural designs such as decorating structures and more simply for adding decoration to outdoor utensils. Using larger scale patterns makes chisel work more appropriate to the scale of the project than a knife, and isn't often included in English language books on the subject. ▶



4 The design is based on a hexagram



5 The carving process illustrated

The main tool used to create the design (**photo 4**), based on a hexagram, is a No.1 straight chisel – although a carpenter's chisel will also work. In addition, a skew chisel or knife can be useful in tight corners and for curved incisions at the perimeter, although, if available, a shallow gouge yields better results. The choice of material will be limited by the design criteria of the structure or object to be decorated and is most often one of the slow-growing native pines in the areas

of Europe where this practice is commonly undertaken. In the UK, this form of decoration was more common in the medieval period than now, where the prevailing timber decorated in this style was native oak, probably carved while 'green', so it was still relatively soft.

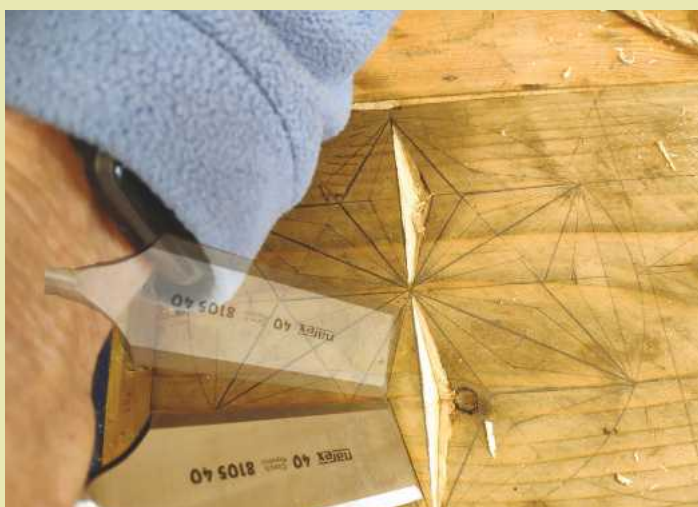
This project, designed to demonstrate the use of chisels, shows how to decorate a piece of outdoor furniture – in this case, a planter's end panel constructed from tanalised softwood, which isn't generally considered

a good choice for carving. If available, larch is a better option as it's easier to carve and also rot-resistant.

The design is drawn onto a circle using an old-fashioned compass (**photo 5**). Taking the radius 'r', draw an arc from apex 'A'. The fields between are triangulated for a tricorn cut – shown right on **photo 5**. This is enhanced using simple 'step-and-repeat', by drawing an arc from each intersection through the centre in turn, which results in the Star of David's six points. The design is drawn offcentre on the oblong end-piece, with one full-circle and one part-circle making up the completed pattern.

The carving is basically made up of two parts (**photo 6**): 1) The radial diamond patterns; 2) The perimeter's tricorn pattern, both of which are simply duplicated around the circle using 'step-and-repeat'. Begin the diamond pattern with a stop-cut along the centreline, which may help to prevent break-out. Alternatively, begin with the chisel angled at about 45°, starting full depth at the middle and working outwards, with the last cut angled up towards the apex, then repeated on the adjacent line.

To remove the chip, repeat this process along the diamond's centreline (**photo 7**), again, producing angles at 45° towards



6 The carving is made up of two parts: radial diamond patterns and the perimeter's tricorn pattern



7 To remove the chip, repeat this process along the diamond's centreline



8 The next level to work on is the same triangular shape as before, taking two opposing 45° chisel cuts to remove the chip



9 You'll be left with the final two limbs, where the chord intersects the outer circle



10 To finish this quadrant, you'll need to return to the straight blade



11 If you have a suitable gouge, the curve can be established more quickly with a series of slicing cuts along the arc

the earlier cuts. If the chip doesn't pop out, the cuts may simply not be deep enough, so therefore require a second attempt. Once the chip is out, you'll probably need to reinforce the centreline at regular intervals, to ensure the chisel is removing clean chips each time.

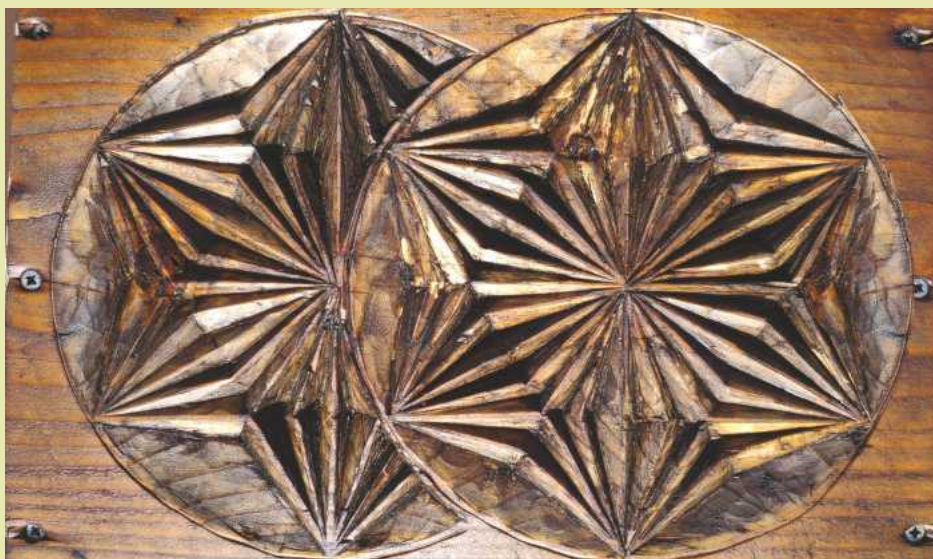
The next level is the same triangular shape as before, taking two opposing 45° chisel cuts to remove the chip (**photo 8**). Again, repeat this for the other end. Re-use this procedure to work your way round the sector, outlining the enclosed radial three-point star.

Once finished, you'll be left with the final two limbs, which is the point where the chord intersects the outer circle (**photo 9**). Make a straight stop-cut along the chord to prevent

break-out, then begin to cut a curve along the chord, so you can access the chip. This is ideally achieved using a curved carver's chisel – gouge – but you can also, with care, pare back to the outer circle using a craft knife, adjusting your cut for the grain direction.

To finish this quadrant (**photo 10**), you'll need to return to the straight blade, cutting, as before, at 45° into the circle's curve in order to clean out the final chip. If you have a suitable gouge, the curve can be established more quickly with a series of slicing cuts along the arc (**photo 11**).

Finally, run a groove round the outside and apply a suitable finish (**photo 12**) – in this case, Creosote preservative. ✂



12 The completed chip-carved pattern having received a Creosote preservative

TIP

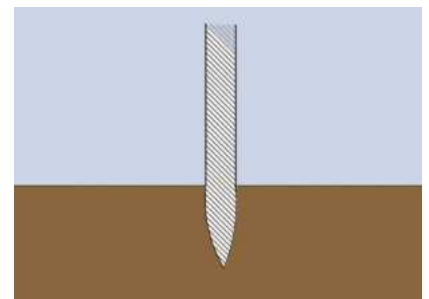


Fig.1 Using a carver's No.1 chisel allows you to make an even-sided 'knife' cut...

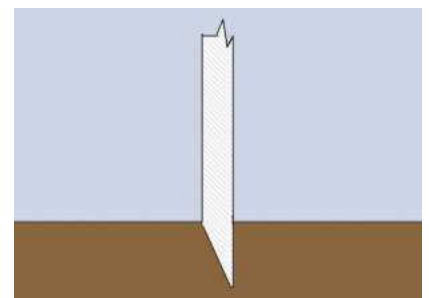


Fig.2 ... as opposed to a wedge-shaped cut

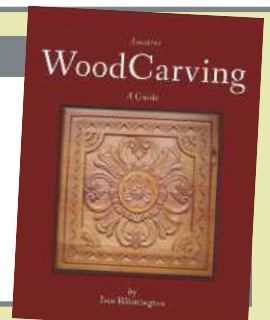
Using a carver's No.1 chisel is better than a carpenter's chisel as it produces an even-sided 'knife' cut (**Fig.1**), as opposed to a wedge-shaped cut (**Fig.2**); this allows the chip to break-out evenly along the centreline when cut from either side. If you only have a carpenter's chisel available, with the blade reversed, the same effect can be achieved by running the chisel back along the line

AMATEUR WOODCARVING – by Iain Whittington

This article has been compiled from original information given in Iain's book. Here, you'll also find detailed instructions on the use of a computer and 'Freeware' for the preparation and manipulation of plans for Kolrosing, chip-carving and decorative carving.

Amateur Woodcarving was published with the support of GMC Publications and all proceeds donated to SSAFA – www.ssafa.org.uk – 'The Armed Forces Charity'. It's available in most book shops or online via Amazon: www.amazon.co.uk/dp/1915191068

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TRIPLE DECKER

Ideal for gardeners with limited space, Peter Bishop's triple-decker stands can be used outside or placed in a porch, greenhouse or conservatory



The frames that form the ends of each of my stands measure around 850mm wide x 760mm high x 690mm from front to back. You can of course vary these dimensions if you wish, and the overall width can be made to suit the sizes of your seed trays and whatever display space you have available. If you have plenty, you can build a whole series of stands. Measured gaps between each unit will allow the seed trays to overlap, thus saving timber.

Make do & mend

In order to ensure a long life, I chose to make this project from preservative-treated softwood. If you have some odd stock around, it could be made from anything. The sizes aren't critical, either. I had to cut some of mine down in cross-section to make the legs.

Safety note: In the photos, the saw guard

has been removed for clarity, but should always be used when cutting stock.

The next step is to cut all components to length. Variation in the widths of the legs and slats isn't important. However, to aid the trenching process later, it's best to make all the rails the same width. You might have to plane or saw them to a regular size. Once all these bits and pieces are to hand, the partial housing joints on the legs can be cut.

Extra strength

Cutting these housing joints to take the rails isn't absolutely necessary. A simple face-to-face joint made with glue and screws would suffice. I just like the extra strength and security the partly-recessed joint affords.

I have the benefit of a pull-over cross-cut power saw that can be raised or lowered. This cuts the trenches very quickly, but these

joints can just as easily be cut by hand. If you're using a powered saw, start by cutting the top rail housing in each of the legs. The depth of each joint shouldn't be more than about 12mm or so. They work as a locking mechanism to ensure the rails are in the correct place and are fixed firmly to the legs. Once the top joints have been cut, use the short front leg to mark the position of the matching joint on the intermediate and long legs. With this lower joint cut, use the intermediate leg to mark out the position of the middle joint on the four longer legs. Check that the rails fit snugly into each of the joints, then it's job's done.

Assembly time

If possible, tackle the assembly on a flat bench surface – it makes life a lot easier! Cramp the first rear leg onto the bench top.



1 Some stock might need ripping down. Note that the saw guide has been removed for clarity



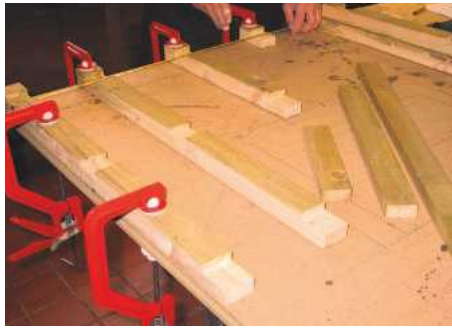
2 For ease of trenching later on, the rails should all be cut to the same width



3 The completed stack of machined components, ready for the housing joints to be cut



4 Check the fit of the rails in the leg housing joints, easing them if necessary



5 The first stage of assembly is to cramp a back leg to the bench top. Its square corner is a useful guide



6 With all the legs cramped in place, apply plenty of glue and begin to fix the rails



7 Drill clearance holes in the rails and drive in two fixing screws per joint



8 Cramp on a couple of slats as shown to help you space the end frames correctly



9 Glue and screw the front and back slats to each level of the structure in turn



10 Add the inner slats to each level, gluing and screwing them on as before



11 Space the intermediate slats by eye and use an offcut to make sure the ends are aligned



12 Add one or two cross braces if necessary to prevent the structure from racking

It helps if the bench top has a corner to it; if not, mark a square corner onto the surface and work off that. Now cramp the second rear leg to the bench top at the correct spacing from the first one. I put mine 215mm apart so the rear top slat could be set to hang over the back edge by 12mm. Cramp the intermediate and short legs so they're square and parallel to the others. If you've got it right, each rail will now fit in place, perhaps requiring a little easing.

Start at the top of the frame. Use glue and screws for the first rail, pre-drilling the holes in the rails to avoid splitting. Work your way down to the bottom rail, then make the other end frame as a mirror image of the first one. Set these two assembled frames to one side until the glue has set.

Creating the shelves

The next task to tackle is the slats, which need to be cut to whichever length you've chosen. Don't make them too long or they may sag under the weight of watered seed trays; mine were about 850mm long. On a large flat surface,

stand one end frame up, then the other, and dry-cramp a slat across the middle of the top and bottom rails. Make minor adjustments to give an even overhang at each end.

Begin by gluing and screwing the rear slat on each of the rail platforms, then remove the cramps and fix the front slats in place. Apply a line of glue along the top of the remaining rails and position the last two slats on each level by eye. Use a short offcut to line up the ends of the

slats, then screw them on. Once you're happy that the whole assembly is now square and standing level, leave it again for the glue to set. Later on, one or more diagonal braces can be fitted across the back inside faces of the legs to make sure the finished stand is as stable as possible.

If you wish, give the whole thing a good coat of preservative, then you're ready to start using the stand. ✂

SEED TRAY STAND CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Rear leg	4	760	45	38
Centre leg	2	430	45	38
Front leg	2	100	45	38
Top rail	2	230	50	25
Centre rail	2	460	50	25
Bottom rail	2	685	50	25
Brace *	2	800	50	25
Slats	12	To suit	50	12

** Optional; length measured from assembled frame*

THE GREAT BEAM

This extraordinary story documents how an extremely large driftwood log was tracked, salvaged, transported and used in the construction of a house with a unique design feature

Cape Cod in Massachusetts protrudes from the North American continent's shoreline like a crooked arm shaking a defiant fist at the turbulent Atlantic ocean. Home to literally thousands of shipwrecks dating from pirate days to modern vessels, the area abounds in strong tides, lethal reefs and sandbars. Such tides bring a huge variety and number of all manner of fish, including tuna, shark and of course, the aforementioned cod.

Monsters of the deep

Deep waters on the ocean side of this narrow peninsula have historically encouraged the great white shark to visit, and it's at nearby Martha's Vineyard that the film *Jaws* was located and shot. Fans of classic literature may be aware that this was also the embarking point for Ishmael, who joined Captain Ahab on his self-destructive search for the whale Moby Dick. However, this story isn't about giant fish, but more about giant driftwood, or to be precise, one specific giant drift log...

The go-to guy

John Holland is a highly skilled carpenter born and raised on Cape Cod, and is currently earning a living there building, repairing and modifying the many timber buildings that help give this idyllic spot its undeniable charm. Having built an enviable reputation – as well as more than a few houses – John is something of a 'go-to guy' in these parts, and has been working with wood since he left school, training mostly in framing and roofing.

The trail begins

John first spotted the giant redwood log a few years ago, washed up on one of the many beaches that line the low-lying spur of land. It was gone the next day before he could get hold of it, and ever since he'd been keeping a weather eye out for its return.

There's a great deal of competition for found and recycled resources on the Cape – marine salvage is especially sought after – and it really is a case of finders keepers when it comes to beached bounty. The occasional, tantalising glimpse of the log would be reported from friends and locals, but it wasn't until a year or two ago that he got word that it'd landed

on a beach in the large bay created by the Cape. It was a case of all hands to the pump – and quick!

Getting a grip

In life, prompt action can generally be relied upon to pay dividends, and John was soon down at the beach with some willing helpers and a fishing boat standing by. The log came in at 45ft – about 14m long – with a girth of 6ft (2m), so a few strong lads would be needed to rope it up, help it off the beach and back into the sea. A willing wet-suited volunteer swam out to the waiting fishing boat, and returned

with the tow rope, which was brought up the beach to the waiting log. A chain bridle was secured to one end, then made fast to the rope. With the fishing boat at slow speed ahead, the log was soon back in the water, but this time it wasn't left to the mercy of time and tide.

Coming ashore

Manoeuvring a log such as this certainly wasn't an easy feat, but with the right tackle and equipment it's surprising what can be achieved, especially in a community which spends much of its working life in and around



A large chain bridle is secured to one end of the safely beached log

Photograph by Barry Perkins



The log contained dozens of huge nails, which had snagged ropes and torn nets

Photograph by Barry Perkins



The beach crew did their best to help the boat in order to get the recovery under way



The fishing boat *Hizzoner* set off with the giant log now safely in tow



John collected the log in Cape Cod Bay and headed back to Pamet Harbour...



... where it was beached, winched ashore and loaded onto a trailer rig



At the house site, the massive concrete coffer dam foundations went down...



... and the house began to take shape



The log – soon to be The Great Beam – was carefully craned into the sky...



... and slowly lowered inch by inch towards the huge gable end walls of the main house



Each end had to be fitted into a circular cutout in the timber-framed gable



With one end in position, the other was skilfully threaded into its cutout

water and is no stranger to a rope. After landing the log at Pamet Harbour – about a third of the way down the peninsula – its days of roaming the high seas were at an end. It was destined to become The Great Beam in a luxury beach house, which its owners had asked John to design. With The Beam as a focal point in the centre of the house, John proposed a pair

of tapered octagonal towers at each side of the building.

Construction begins

Before long, the foundations had been laid and the house soon started to take shape. John had collected an ace crew together – including some of the area's top carpenters



The Beam is currently playing both a starring and a – roof – supporting role



A spare beam supports the joists for the floor above the kitchen



The finished house features twin chimney stacks and octagonal tower wings

and craftsmen – and spent a great deal of his own time on site.

Such a huge timber always had to be more than just another component in the building, so it was designed to run from front to back and support the central pitched roof. After a bit of a clean-up and removal of the assortment of snagged ropes and nets, The Beam was duly craned and manhandled into position between the gable ends at the front and back of the house.

Keen to display its awesome length to all who'd view it, John deliberately left the interior open, and decided to divide the central chimney stack into two rather than obscure The Beam inside a brick wall. This, in addition to many other architectural flourishes, is one of many distinctive features that always accompany a John Holland house. ✂

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MADAGASCAN MELODY – PART 1

In the first of a two-part project, Shaun Newman shows how to make this beautiful box-shaped wooden guitar, which is commonly played in Madagascar. He starts by looking at the instrument's origins before going on to construct the neck, headstock and soundbox

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Les Thorne jazzes up his office by turning three different desk accessories using a selection of exotic timbers, all of which feature ready-made brassware



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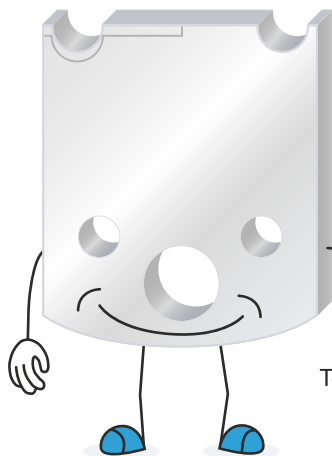
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FOR SALE

Scheppach HM0 Solo planer/thicknesser

– 10 x 4in throat with spare knives; new feed rollers fitted; £350
01237 479 245 (Bideford)



Ferm FLZ-275 bandsaw

– old but very seldom used. Requires new rubber to top drive pulley; includes various spare blades; £25 – buyer to collect
07733 9822 477 (Bristol)



Draper WTL95 variable speed wood lathe

– 2009, in full working order – 240V supply; £300
01686 640 205 (Welshpool)



Hope easy arm hollowing jig – the easy way to turn hollow forms; fits all flatbed lathes with centre height up to 12in (24in swing). The jig takes 19mm and 16mm round bar tools; used once – as new with original packaging; cost £245, selling for £145
07816 371 694 (Newcastle on Tyne)

Scheppach hms 2600ci planer/thicknesser

– 2009, 240V supply; good working order; £650
01686 640 205 (Welshpool)



Hammer A3-26 planer/thicknesser

– 260mm planing width with Silent-Power® cutter-block; excellent, clean condition; only used in home workshop; £2,500
01388 815 216 (Stanhope)



New, wrapped Axminster bandsaw blades – all 98in, 1 x 3/4in (4tpi), 1 x 1/2in (10tpi), 3 x 1/4in (6tpi), plus 1 x 1/4in (18tpi) – from Hamilton Beverstock; £30 plus postage
01279 722 469 (Herts)

Coronet Imp bandsaw – three wheel, three speed, tilting table – 12in throat; £100 ONO
07759 578 688 (Manchester)



Sealey SM1308 lathe – used twice, in excellent condition – 370W motor, four speeds, 1,000mm centres, twin bar construction – complete with woodturning tools; £120 – buyer collects
07952 326 181 (Berkshire)

Copies of The Woodworker – complete collection from January 1985–December 2019, except for 11 missing copies from 1985–1993; all boxed up and free to collector; collection only
01708 702 437 (Essex)

Perform MJ343C CBBB bandsaw – little used – with mitre guard & fence plus manual; 240V, 315mm wheel diameter; £30 – buyer collects
07981 267 171 (Essex)

Kity 1637 planer/thicknesser – 10 x 8in; 1994; needs new motor; 240V – lovely machine with manual – open to offers; buyer collects
07981 267 171 (Essex)

DeWalt DW1251 radial arm saw – 1980 – genuine machine, needs some TLC – open to offers; buyer collects
07981 267 171 (Essex)

Kity 1619 circular saw – 1994 – lovely machine with fold-up extension table & manual – 240V – open to offers; buyer collects
07981 267 171 (Essex)

JET JTS-600x circular saw bench – join blade; supplied with all accessories; little use & in excellent condition – buyer collects; £550
0161 224 2405 (Manchester)

Various woodturning tools: 5 x scraper chisels; £60; 4 x assorted chisels; £40; 8 x gouge chisels; £80
07376 013 437 (Leeds)

Scheppach slide compound mitre saw – as new; £110; also, Clarke 305mm bandsaw – maximum depth of cut is 016.5 – supplied with all fences; £150
07904 433 520 (Gainsborough)

Jet JWL-1442 lathe (Swiss-made) – light use, in good condition, checked by Tewkesbury Saw Co; £500 – buyer collects (165kg)
07583 762 323 (Warwickshire)

Axminster ND16B drill press – little used – wood only with vice; £150
07708 663 689 (Somerset)

WANTED

Tyre for Tormek 2000/T8 drive wheel, or complete drive wheel
01793 771 898 (Wiltshire)

Kity combination machine (or similar) – must feature saw, planer, mortiser, spindle moulder, etc. Carriage paid
+087 2275266 (Ireland)

Australian-made Symtec woodturning lathe; in sound condition; must be complete with toolrest – excellent price paid
01454 260 395 (Berkeley)

Three-jaw chuck for mortiser attachment Kit K5. Attaches to planer cutterblock with left-hand thread – both 12mm
01302 817 889 (Doncaster)

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

Woodworking tools: planes by Norris, Spiers, Mathieson, Preston, Slater, etc. brass braces, interesting rules & spirit levels; top prices paid, auction prices beaten
01647 432 841 (Devon)

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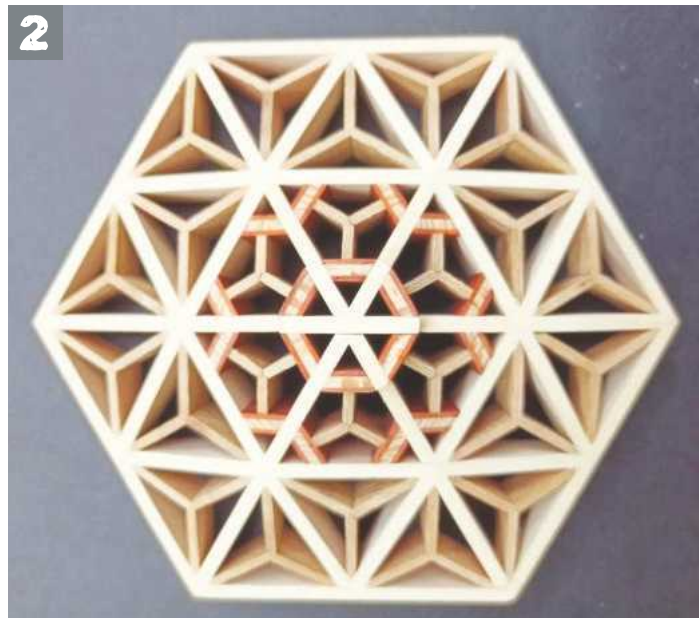
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TAKE

5

Featuring an unintended Japanese theme, this month's **#woodworkerfriday5** demonstrates technical skill, wonderful depictions of nature, along with ingenuity and design flair in abundance



1 Carved goldfish, 2008, by Yoshimasa Tsuchiya – [@yoshimasa_tsuchiya_info](#)

2 In progress lid detail of box project by Robinson House Studio – [@robinsonhousestudio](#) – student Tom Kato Inman – [@katoinman_woodwork](#) – in sycamore, London plane and padauk kumiko

3 Ian Bell, 'Firetail', 2022, flame sheoak, on display at the Wood Symphony Gallery – [@woodsymphony](#) – visit www.woodsymphony.com to see more pieces by the artist

4 Chest on stand by [@watersandacland](#) student DeliaDomo – [@delia.domo](#) – an existing design with a twist, featuring hand-shaped 'puffy' drawer fronts – photo credit: [@watersandacland](#)

5 'Yaketa' charred Japanese-inspired coffee table by Sawdust Bureau – [@sawdustbureau](#) – design influenced by traditional Hinoki bath stools found at onsens and ryokans across Japan – charred blackbutt timber top, natural blackbutt frame and lower back with woven Danish cord shelf. Butterfly keys in the split top and through dowel joints complete the detailing

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