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July 2019

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- RIK MIDDLETON'S DESIGN FOR A GOOD, SOLID WORKBENCH
- DENIS WHITAKER SHARES HIS SIMPLE BOX-MAKING SECRETS
- PAUL GREER EXPLORES TOTEM POLE CARVING THROUGH THE AGES

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Welcome

Despite having a lovely, relaxing time in Cornwall last month, unfortunately my return journey has been plagued with illness! Yes, there seems to be lots of nasty bugs floating around, all of which I appear to have caught... Apparently working from home, where you think you'd be exposed to less germs, doesn't help, and as I write this I am still trying to fend off a terrible cough and cold. The show must go on, however, and magazines must still be published, and thankfully this issue came together incredibly smoothly (thanks, team!).

Woodworking connections

It's been an interesting month in the world of woodworking publishing, as most months seem to be. Just last week, for example, I learned that a friend's dad was profiled in an old issue of *Practical Woodworking* and in fact, the bed he made that was shown in the article is still being used by him to this day, along with a charming little coffee table. During a recent visit from Toulouse, France, my friend's father even recalled the story of being visited by the then-Editor of the magazine, back when he was living on the South Coast not far from Eastbourne. Also firm friends with the famous American limewood carver David Esterly, I was happy to learn that he's still making furniture from his French workshop. Try as I might, I sadly couldn't find the issue as our digital archive is quite limited, but if this rings a bell with any readers who have old copies at home, do let me know as I'm sure he'd love to see the feature after all these years.

The Alan Peters Furniture Award 2020

As well as receiving lots more positive feedback from readers, acquiring a good few new authors and generally ticking along nicely, Jeremy Broun and I have been

working on firming up dates and logistics for The Alan Peters Furniture Award 2020, as well as liaising with the sponsors, galleries and judges. We're pleased to announce that everything has now been confirmed and we will bring you all the details in the next issue, as well as telling you how you can enter. In the meantime, if you would like to find out more about the late Alan Peters OBE himself, learn more about the old award and get an idea as to the standard of work previously submitted, you can download a free copy of Jeremy Broun's video-integrated e-book here: www.jeremybroun.co.uk/alanpetersebook.

This is a fantastic award in a new incarnation and certainly one not to be missed, so if you haven't already, it's time to start thinking about the piece(s) you are going to make and submit ahead of next year's deadline, which will no doubt come around rather quickly.

July gems

In terms of what you can expect from our July issue, how about a good, solid workbench design, a practical garden planter project, a fantastic technical article looking at Windsor chairmaking, a fascinating feature on totem pole carving, plus a competition to win a Triton TSPS370 oscillating tilting table spindle sander? We hope that's enough to whet your appetite, but if not, simply turn the page to find full details of what's in store. We do hope your summer woodworking pursuits are fun-filled and remember to keep sending in photos of your latest projects.

Enjoy!

Tegan

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Consultant Editor

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

83 'THE BOX WITH THE FUNNY TOP'

Originally inspired by the work of French woodturner Benoit Averly, Les Thorne sets about making his own version of a classic piece



SEND IN YOUR TOP WORKSHOP HINT OR TIP & YOU COULD BE IN WITH A CHANCE OF WINNING A **VERITAS LOW-ANGLE JACK PLANE** – WORTH OVER £250!

See page 61 for details

WIN



1 of 2 Triton TSPS370 350W oscillating tilting table spindle sanders

You could be in with a chance of winning a TSPS370 oscillating tilting table spindle sander from Triton, featuring a large tilting cast aluminium table for permanent flatness, smoothness and strength – see page 74 for details

triton



The Woodworker

Good Woodworking

JULY 2019

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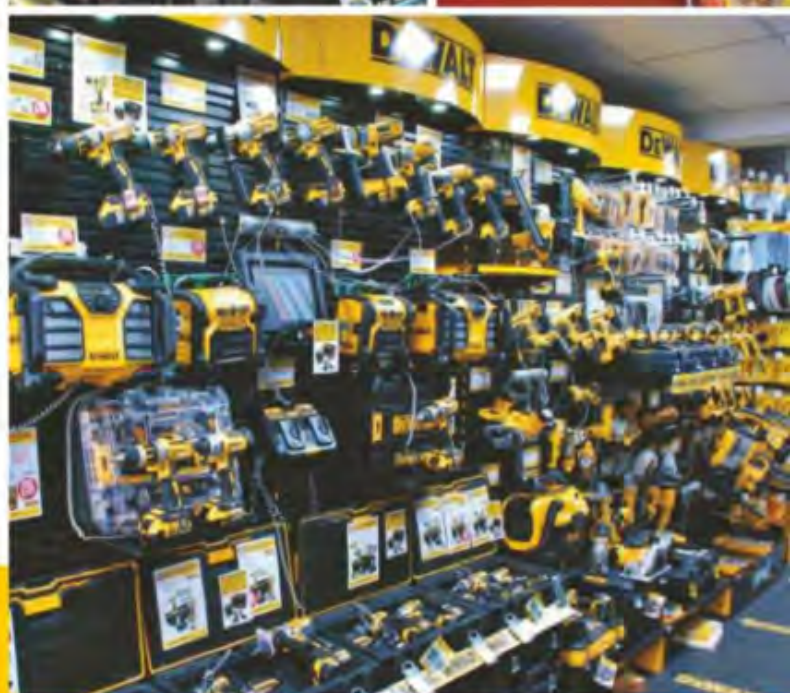
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X-LOCK FROM BOSCH PROFESSIONAL

Bosch Professional has introduced a revolution in convenience for angle grinder users with X-LOCK – the fastest, simplest, most trouble-free accessory-change system ever. Launched at the same time are six small but powerful X-LOCK angle grinders, whose innovative features will improve productivity, ergonomics and safety.



X-LOCK advantages

Conventional accessory attachment involves a nut, flange and a spanner, any of which can easily be lost. X-LOCK, by contrast, is a genuinely tool-less alternative. Simply bring the accessory and grinder connecting surfaces into contact and press. A reassuring 'click' sound tells you they are firmly locked. To remove a disc, just flick a lever on the grinder. Changeovers can be completed in just five seconds. You can even do it while

wearing gloves. There's no attachment nut to seize up on a jammed disc, or to get in your way when working at flat angles, or damage material surfaces. What's more, X-LOCK indicates the right accessory mounting direction and won't allow direction-specific accessories such as diamond cutting discs to be mounted incorrectly.

A comprehensive new range of more than 130 X-LOCK accessories covers everything from metalwork and stonework to plumbing, tiling and other cutting and grinding tasks. Almost all of these can also be used on your older, non-X-LOCK angle grinders with conventional clamping systems. Discs vary in diameter between 115 and 125mm.

New X-LOCK angle grinders

The six small X-LOCK angle grinders comprise one corded model and five 18V battery-powered cordless products. The cordless machines provide equivalent power to a 1,000W corded grinder. Compared to predecessors, they are up to 35% more powerful and give up to 100% longer runtime. Their ergonomic features include an intuitive user interface – showing tool status and enabling speed selection – and an in-built LED working light. They can also be fitted with a Bosch connectivity module, which connects to your mobile device via Bluetooth for advanced functionality.

Automatic safety systems on the new X-LOCK angle grinders include KickBack Control, which immediately shuts down power to the motor if the disc is suddenly jammed. Drop Control does the same as soon as a dropped tool hits the floor. In models with a PROtection Switch, power is instantly cut if the user lets go, while the X-Brake brings discs to a complete halt within one second of the tool stopping.

Optional aids include Soft Start, allowing progressive build-up of speed to avoid initial kickbacks, and Restart Protection, preventing an unexpected start-up after a power cut or battery change. Auxiliary handles with vibration damping can also be specified.

For further information, visit www.bosch-professional.co.uk.

WOODWORKER, DESIGNER & CREATOR MATT ESTLEA TO DEMO AT ALL AXMINSTER STORES

Matt Estlea, woodworker, Rycotewood Furniture Centre tutor and social influencer, will be visiting all eight Axminster Tools & Machinery stores over the coming months.

Matt has combined two of his much loved interests, woodworking and videography, to build up an online brand that currently has 102,396 subscribers signed up to his YouTube channel. His free online woodworking videos offer challenging self-projects, tool comparisons and build-along guides for those looking to take their skills to the next level.

Sharing his sharpening, dovetailing and plane setup techniques, Matt will begin his programme in High Wycombe in June, and he'll then continue his tour throughout the UK before finishing with a grand finale at his home store in Basingstoke in October.

Matt's full schedule is as follows:

22 June – High Wycombe
29 June – Cardiff
6 July – Nuneaton
17 Aug – Axminster
14 Sept – Warrington
28 Sept – North Shields
12 Oct – Sittingbourne
26 Oct – Basingstoke

For more information about Matt and his tour, see www.knowledge.axminster.co.uk.

DIARY – JULY

- 2 Fruit making
- 3–4 Bowls & platters
- 8–9 Woodturning
- 11 Intro to turned boxes
- 12* Bandsaws
- 15 & 22 Sharpening hand tools with Tormek
- 15–16, 18–19* & 24–25 Woodturning
- 16* Pen making
- 24* Spindle moulding
- 24 Tool sharpening
- 27* & 30–31 Wood machining
- 29–2 Woodturning (5 days)
- * Course held in Sittingbourne, Kent

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- 20–21 Dovetailing weekend
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- Web: www.christribefurniturecourses.com

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- 26 Willow weaving for beginners
- 27 Kusa carving
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- Web: www.greenwooddays.co.uk

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With an RRP of £14.99, Gorilla Waterproof Patch & Seal Tape can be purchased from B&Q, Travis Perkins and Homebase; to find out more, see uk.gorillaglu.com.

MASTER THE ART OF MAKING YOUR OWN WOODEN PADDLE AT THE WOODSPACE UK

A wooden paddle-making course at The Woodspace UK – a new venture in Exeter, founded by Martin Lammers, a professional joiner and traditional boatbuilder – is proving attractive to people who are enjoying mastering the complex but learnable craft of making an efficient and beautiful-looking wooden paddle. Martin says: "Paddle-making can be a great way of self-expression with many different shapes and styles available to suit any waterman. A paddle that you have crafted to suit your chosen pursuit, paddling style and size, is something to keep, treasure and enjoy for the rest of your life."

The Woodspace UK is a social enterprise providing flexible and affordable access to professional workshop space and equipment to support small businesses, freelance and hobby woodworkers.

As Martin adds: "We aim to be the best woodworking space in the south-west of England, by providing safe and efficient brand-new

machinery in a well organised clean, tidy and bright space. We welcome all woodworkers, fine furniture makers, cabinetmakers, designers and crafters to our spacious, comfortable, warehouse in Marsh Barton, Exeter. There is also a fully equipped kitchen enabling woodworkers using the facilities to make hot drinks and light meals."

The paddle-making course is a regular two-day event at The Woodspace UK. Course members create and shape a paddle customised to their needs. This is great for a woodworker at any level, from the novice to the advanced. Other popular courses include a day-long chopping board course and tool basics, which takes place over two days. To find out more, see www.thewoodspaceuk.com.



Martin Lammers, professional joiner and boatbuilder

SAVE OUR CEDAR: MALAWI'S NATIONAL TREE BRANCHES OUT

Bedgebury National Pinetum and Forest, part of the Forestry Commission England in Kent, has sent the first seedlings of Mulanje cedar raised in the UK to be cared for by the Eden Project in Cornwall.

Bedgebury National Pinetum's Mulanje cedar seedlings are off to a permanent home in a Mediterranean biome where they have the best chance of long term survival. The Mulanje cedar, the national tree of Malawi, is probably 'extinct in the wild'. Dan Luscombe, Collections Manager at Bedgebury National Pinetum, said: "Fantastic progress has been made in support of the Mulanje Cedar project. Mature cedars can live for hundreds of years so it's early days and there's plenty more to be done securing a future for this enigmatic tree species."

Seedlings from Mulanje cedar (*Widdringtonia whytei*) seeds collected during Dan Luscombe's trips to Malawi have made the next important step in their journey to help save this cedar from extinction. The Eden Project has extended a helping hand by making space in their collection. This is an example of how the collaborative work of the Botanic Gardens Conservation International (BGCI) brings species back from the brink of complete extinction.

The Mulanje cedar is classified as 'critically endangered' by the IUCN Red List of Threatened species with a decreasing population trend. In January 2017, a two-week survey at the top of Mulanje Mountain to assess the scale of destruction identified just seven mature individual trees. The Eden Project has taken the seedlings raised at Bedgebury's world leading nursery for conifers into their care. These trees will be

supported to grow on at the Eden Project by a biome environment that will give the seedlings the best chance of surviving outside of their natural climate in Malawi.

Catherine Cutler, Biomes Manager at The Eden Project, said: "Eden is delighted to be working alongside Bedgebury and BGCI members supporting the Mulanje cedar work, to prevent the extinction of such a special tree. The seedlings grown by the team at Bedgebury are beautiful and in excellent condition, both strong and healthy. We anticipate the trees will thrive in Eden's climatically controlled Mediterranean biome, securing an ex-situ collection protected from detrimental weather, to ensure robust conservation of the species."

Mulanje cedar is sought-after for its valuable timber. Worth around US\$4,000 per cubic metre because of its durability, strength and resistance to termites, populations have been decimated due to illegal harvesting. Bedgebury's work is not in isolation: the collaboration with BGCI also extends to the Mulanje Mountain Conservation Trust (MMCT) and Forest Research Institute of Malawi (FRIM). They are co-ordinating the 'Save our Cedar' project in Malawi and 10 nurseries around the base of the Mulanje Mountain are growing seedlings too.

For more information, visit www.bedgeburypinetum.org.uk.



Bedgebury National Pinetum and Forest project team. Photograph courtesy of the Forestry Commission

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





FESTOOL HELPS DESIGN STUDENTS BUILD NEW HALL ON CAMPUS

Located in Hooke Park, Dorset, Wakeford Hall has been constructed by students as part of the Architectural Association School of Architecture's Design and Make Programme. The project includes the construction of a brand-new library, lecture theatre and reception facilities, all of which have been built using Festool tools. Once completed, Wakeford Hall will provide a beautiful working environment for both the students based at Hooke Park campus and the general public.

The six-year project, due to be completed in 2023, will see students on the Design and Make programme construct the entirety of Wakeford Hall, a 210sq.m building within Hooke Park. Currently, the students are working on the library area, which will consist of an 85sq.m ground floor and 40sq.m mezzanine space. The students have carefully considered the surrounding forest area throughout the construction process to incorporate innovative uses of timber within their designs. Working together, the students adopted buildability through the use of models and prototypes of the structure, which assisted them in creating a beautiful library that can be used by the next generation of students to study at Hooke Park, as well as the general public.

The project is using an extensive range of Festool products on site. Most recently the students have been using the circular saws to cut and shape the stack laminated wood that is being used for the structural frame of the library – the structure includes 14 interlocking glue-laminated timber frames, showcasing the students' innovative approach to timber construction. Combining Festool's circular saw with the guide rails has ensured the students are producing precise quality cuts, repeatedly. With the spring-mounted guide wedge, preventing kickback, the Festool circular saws help to minimise the risk of injury to the students – a key consideration for the project managers overseeing the students' work.

Festool's cordless drills are also being used. The QUADRIVE cordless percussion drill, in particular, has proven to be popular enabling the team to drill long timber screws easily, guaranteeing the stability of the structure.

Project Manager at Wakeford Hall, Jack Draper, said: "Festool's tools have been a huge assistance to us on site. The students have been able to create cuts and finishes that would have been far more difficult to achieve with alternative products. The guide rail has enabled us to achieve pin-point accuracy with cuts, and the long battery life of the cordless products has allowed the team to work on site for longer, without the need to constantly recharge or replace the battery packs."

"Festool's SYSTAINER T-LOC system has been another major benefit to us. Working in a forest means that all of our tools have to be packed away at the end of each day and brought back onto site the following day. This can be a lengthy process; however, the SYSTAINER T-LOC enables us to connect multiple tools together and transport them easily to and from the workshop. We could not be happier with the functionality of the Festool system and the work that it has enabled us to achieve so far."

The Wakeford Hall project has been divided into phases: each year, the new Masters-level students on the Design and Build programme complete a new phase of the build. So far, Phase 0 (the prototype and development stage) and Phase 1 (planning and constructing the library structural frame) have been completed. The students are now in Phase 2 (the development of the library structure and construction of its external envelope).

To date, 19 Design and Build students have taken part in the project, along with a further 68 from the Architectural Association's Summerbuild programme, an intensive course for architecture, design and engineering students and young professionals looking for hands-on experience.

Hooke Park is a 130 hectare working forest, which was acquired by the Architectural Association in 2002. In 2010, the Design and Make programme for Masters students was created, with the aim of providing hands-on experience for those interested in architecture, with a focus on the innovative use of timber within construction.

To find out more about Festool and its range of products, see www.festool.co.uk.

MIRKA DEOS DELTA IS FLAWLESS FROM CORNER TO CORNER

Mirka is expanding its revolutionary Direct Electric Orbital Sander (DEOS) range with the addition of the new DEOS Delta. Its ergonomic and innovative iron shape design allows the user to access hard-to-reach areas easily and efficiently, while reducing the stress on arms and hands, all while delivering a flawless smooth finish from corner to corner.

The Delta's low profile, of only 10cm, ensures it is closer to the surface at any angle allowing for increased control of the sanding process, even during long periods of use. With the Delta weighing less than 1kg, the R&D team in Jeppo, Finland, has ensured that there is less strain on the user's muscles, leading to a reduction in the risk of arm fatigue. The sander also incorporates a powerful brushless motor and 3mm orbit for more effective removal of stock, while keeping vibrations at a low level to minimise the risk of HAVs. Additionally, when the DEOS Delta is combined with Mirka's net abrasives and a dust extraction unit, it provides a consistent scratch pattern and a dust-free work environment.

The Mirka DEOS Delta also includes Mirka's innovative digital solutions

that run through an integrated vibration sensor and Bluetooth connectivity, which enables the user to access the vibration, speed and usage data easily through the myMirka app. This means users can understand how the tool is being used on a day-to-day basis and the ways in which it can be utilised more efficiently.

Pete Sartain, National Sales Manager Industrial of Mirka UK, says: "The R&D team is in constant communication both internally and externally to understand what the market is looking for, so this addition is the next phase in the evolution of the DEOS product range. The introduction of the new Mirka DEOS Delta meets a gap in the market as users are looking for a lightweight, powerful and versatile delta sander and we are confident customers will benefit from its technological, health & safety and performance attributes from its first use."

For more information, see www.mirka.com/uk/uk.



CLARKE BOLTLESS SHELVING RANGE

The new range of Clarke boltless shelving combines tough steel construction with quick and easy set up for any garage, office, home or workshop.

Only a hammer is required to assemble these boltless shelving units, allowing for quick and easy assembly. They also feature adjustable shelf heights and can be assembled as a bench or corner unit, making them suitable for any room size.

When assembled, depending on the shelving model weight capacity, the high quality 6mm chipboard shelves will hold up to 150kg or even 300kg per shelf. The units come in a choice of colours (red, galvanised, blue, grey or silver) and the durable powder coat finish will help protect shelves from damage.

Models in the range start from £35.98 inc VAT. **MULTI-BUY OFFER:** customers ordering four or more of these units will receive a 10% discount on the final price; for more information, see www.machinemart.co.uk.



NEW HILTI SR 6-A22 CORDLESS RECIPROCATING SAW IS A CUT ABOVE THE COMPETITION

With a 32mm stroke length and several redesigned features, the new Hilti SR 6-A22 cordless reciprocating saw aims to be a cut above the competition in terms of safety, cutting speed and handling.



The saw's new patented chuck has been specifically designed to avoid breaks, in addition to which a keyless blade clamp with a new external lever makes it much easier to remove used blades.

Hilti has improved the ergonomics of the front and rear grip as well as the trigger for improved control and precision in every working position. The tool is also equipped with a brushless motor that increases tool lifetime and minimises repairs as well as bright LED lights to maximise precision cutting.

The SR 6-A22 is capable of cutting all types of materials, such as steel, plastic, aerated concrete and timber. Recip saws are renowned problem-solver tools for cutting other materials including stainless steel and aluminium, metal pipes and conduits, reinforcing bars, threaded rods and metal profiles, as well as window frames, woodwork and plastics.

The SR 6-A22 is part of the Hilti 22V cordless tool platform, which consists of tools for drilling, chiselling, cutting, sawing, grinding, direct fastening, and many other applications. All Hilti 22V batteries use the same charger and can power any of the tools in the range.

The SR 6-A22 can be obtained through Hilti Fleet Management, whereby a fixed monthly charge covers all service and repair costs for up to three years.

For customers who prefer to own the tools outright, Hilti Tool Service gives a complete no-cost period of two years, which includes the same high level of cover. Following the initial no-cost period, repair costs are capped, and the company promises a turnaround time of '3 days or FREE'. For more information, see www.hilti.co.uk.

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METABO POWER 160-5 18 LTX BL OFG 18V CORDLESS COMPRESSOR

MANUFACTURER: Metabo

D&M GUIDE PRICE: From £249.95 (inc VAT)

Metabo have launched a new light and powerful cordless compressor with brushless motor for use in interior development and on construction sites. This oil-free piston compressor is simple to transport thanks to its low weight of 8.5kg (with battery 9.4kg) and compact size and therefore needs little servicing. The Power 160-5 18 LTX BL OFG incorporates an instrument panel with easy to read manometers for tank and working pressure and comes with a 10-year tank warranty against rust.

Features include protected operator panel and the manometers, coupling and regulator, are protected against damage by the pipe frame. The brushless motor offers great performance with low energy consumption for longer runtime and a spare battery pack can be stored on the compressor.

The Power 160-5 18 LTX BL OFG comes as a bare standalone unit or as a kit with 2 x 4.0Ah batteries, charger in a Metaloc case plus a spiral hose and blow gun.



FEIN 18V BRUSHLESS TWIN PACK ASBA SCD 18TP



MANUFACTURER: Fein

D&M GUIDE PRICE: £399.95 (inc VAT)

This great value 18V twin pack comprises an ASB 18 Q drill/driver plus a two-speed cordless hammer drill/driver with brushless motor and QuickIN interface, which is perfectly suited for drilling up to 10mm in metal, stone and masonry. Also included is a ASCD 18 WS impact wrench/driver with brushless motor and six-stage torque setting, for universal screwdriving applications including self-drilling screwdriving. The kit comes complete with 2 x 18V 5.2Ah Li-ion batteries and the new ALG 80 rapid charger plus carry case. Until the end of July, when you purchase this kit you'll also be able to claim **FREE** Fein products.

FEIN 18V AKBU 35 PMQW CORDLESS MAG DRILL



MANUFACTURER: Fein

D&M GUIDE PRICE: £1,129 (inc VAT)

Small and powerful, this new single-speed cordless universal magnetic core drill from Fein features forward/reverse running, MT2 tool mounting, permanent magnet and maximum functionality for mobile working on the construction site. It also features an extremely low-wear tool design with swivel-mounted motor cable protection hose for tough use in industry and manual trades. Continuously good work progress is achieved thanks to a brushless Fein PowerDrive motor with tacho electronics and Fein HighPower storage battery, with cells for high current capability. This tool provides flexibility for all mobile drilling work, such as core drilling, twist drilling, tapping, countersinking and reaming.

SELECT version – no batteries or charger supplied.

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TRITON TSPS370 OSCILLATING TILTING TABLE SPINDLE SANDER

Featuring a tilting table and induction motor for quiet operation, this spindle sander from Triton is compact enough to store under the bench in a small workshop, says **Phil Davy**

With the sander body made from rigid plastic, holes at each corner of the base mean it can be mounted securely on a work surface. While vibration is not an issue, fixing down is recommended, especially when sanding bulky items. A thin steel plate underneath gives protection to the motor inside. Overall height is 480mm, so it won't take up too much space, while the weight is 13.4kg.

Above the body is a 370mm diameter cast aluminium work table. Ribbed for strength, it's mounted on trunnions so can be tilted, rather like a bandsaw table. Large knobs either side are easy to reach and mean you can lock the table rigidly. A protractor scale on the right side is graduated in 5mm increments, with a zero calibration adjuster screw for accuracy.

Induction motor

Cable length is 1.9m and this runs from the back of the unit, well out of the way. Power is provided by a 350W induction motor, running the spindle

directly at 1,425rpm. While variable speed may be an advantage with a portable sander in some sanding situations, for most work a single speed is all you need on a freestanding machine.

The NVR switch on/off buttons are easy to reach at the front, and when fired up it's a pretty quiet machine. As well as an oscillating action, the sanding drum has a vertical movement (30 strokes per minute), giving such machines the bobbin tag. Stroke length is 19mm, which may not sound much but does provide an effective abrasive action.

Drums & inserts

Four sanding drums and five abrasive sleeves are provided, stored neatly on one side of the sander. At the opposite side is a tray for six circular plastic table inserts, plus their steel clamping washers.

Each dense rubber drum has a specific sleeve that fits snugly, while a sturdy clamping knob is used to tighten each one firmly on the steel spindle. This has a left-hand thread, which caught

Whether you call it a spindle or bobbin sander, a freestanding oscillating sanding machine is likely to be an asset in most workshops. The TSPS370 from Triton may have been around a while but it's certainly worth revisiting. The brand produces several different bench-top models, this one offering slightly deeper sanding capacity than most.



While vibration is not an issue, fixing down is recommended, especially when sanding bulky items. A thin steel plate underneath gives protection to the motor inside



Above the body is a 370mm diameter cast aluminium work table. Ribbed for strength, it's mounted on trunnions so can be tilted, like a bandsaw table



A protractor scale on the right side is graduated in 5mm increments, with a zero calibration adjuster screw for accuracy



The NVR switch on/off buttons are easy to reach at the front



Stroke length is 19mm, which may not sound much but provides an effective abrasive action



Four sanding drums and five abrasive sleeves are provided, stored neatly on one side of the sander



At the opposite side is a tray for six circular plastic table inserts, plus their steel clamping washers



Each dense rubber drum has a specific sleeve that fits snugly...



... while a sturdy clamping knob is used to tighten each one firmly on the steel spindle



As with most sanders you'll need a cleaning block to de-clog them every so often and extend abrasive life



A 133mm diameter cut-out in the table accommodates a plastic insert to match your selected drum



A dust outlet is provided at the rear, with an internal diameter of 47mm

me out when changing drums, so take note! With diameters of 21, 28, 40 and 51mm, there's a decent range of drum sizes that should suit most sanding tasks. The smallest sleeve (14mm) fits directly over the spindle. With a length of 143mm, drums are longer than those found on most bench-top spindle sanders, which tend to be 115mm. This obviously gives you greater sanding depth, but it does mean replacement sleeves may be harder to source.

Aluminium oxide sleeves provided are all 100 grit, quite adequate for the majority of sanding work. As with most sanders, however, you'll need a cleaning block to de-clog them every so often and extend abrasive life.

A 133mm diameter cut-out in the table accommodates a plastic insert to match your selected drum. Three of these have circular holes, the remainder with elongated cut-outs to allow for the slant of the table relative to the drum when tilted. Inserts were a tight fit and slightly bowed, so for supporting very small items when

sanding it's probably worth cutting a thin board to place over the table. Adding a few slots would be handy to help sanding dust drop through.

A dust outlet is provided at the rear, with an internal diameter of 47mm. With no adaptor that size I resorted to using gaffer tape to hook up an extractor hose. No big problem, and this worked well enough. You can use the machine without extraction, though it's not recommended as dust will accumulate quickly.

In use

I found the work table was not completely flat when examined with a straightedge – a common problem with aluminium tables. Again, a sub-table from thin MDF or plywood over the surface would overcome this, obviously with a suitable hole for the drum. During testing, however, all the edges I sanded were fairly accurate when checked with a square. In fact, it would make sense to make two or three boards that could be stacked above each other if you're sanding mostly thin material;

that way you'll get more even wear from the abrasives and they'll last longer.

Not surprisingly, thin boards were faster to shape than thicker material, though the Triton coped well enough with 45mm thick softwood. It was fairly easy to work accurately to a pencil line and controlling large, unwieldy items was straightforward.

Conclusion

This machine is compact enough to store under the bench in a small workshop. It's not too heavy to move about, either. It hums along nicely when running, so you won't need to wear ear defenders. It's efficient, a cinch to use and produces a decent finish on a variety of materials.

For musical instrument makers it would be particularly useful, when sanding electric guitar bodies or building moulds for acoustic instruments, for example. For making templates or generally shaping softwood or hardwood the Triton is hard to beat. ✖



I found the work table was not completely flat when examined with a straightedge, a common problem with aluminium tables



Not surprisingly, thin boards were faster to shape than thicker material...



... though the Triton coped well enough with 45mm thick softwood



It was easy enough to work accurately to a pencil line and controlling large, unwieldy items was straightforward

SPECIFICATION

Material – primary construction: Plastic

No load speed: 1,425rpm

Oscillations per minute (OPM): 24

Product L x W x H: 381 x 381 x 480mm

Weight: 14kg

Sleeve quantity: 5

Table size: 381mm

What's in the box: TSP537Q 350W oscillating tilting table spindle sander; 6 x table inserts; 5 x drum washers; 4 x drums; 5 x sleeves; 2 x accessory storage units; instruction manual

Typical price: £177

Web: www.tritontools.com

THE VERDICT

PROS

- Tilting table; induction motor for quiet operation

CONS

- Table not dead flat

RATING: 4 out of 5

DEWALT DCS577 XR FLEXVOLT CIRCULAR SAW

Setting the cordless benchmark for high performance circular saws, **Phil Davy** looks at this heavy-duty, extremely powerful new offering from DeWalt

Battery technology has progressed so rapidly in the past decade that it's now conceivable to manufacture almost any power tool in a cordless format. And products that easily match their mains-powered cousins in terms of performance, too. Circular saws in particular drain batteries rapidly and require high capacity packs for them to function well.

This new site saw from DeWalt is immensely powerful, featuring their FLEXVOLT XR lithium batteries. Rated at an incredible 54V and 6.0Ah (at 18V), to say these are gutsy is putting it mildly. For transport, each pack is provided with a plastic slide and click cover, concealing the terminals for safety. This action reconfigures the cells to create three smaller batteries, but that's all getting rather technical...



Two batteries are supplied with this kit, plus a 50-minute fast charger and sturdy zipped holdall. In case you were wondering, this tool cannot be used with regular 18V DeWalt batteries; however, if you already have DeWalt's 54V XR packs you can buy the DCS577 saw bare for around £348.

Fast & furious

Anyone looking to buy a discreet, professional saw is unlikely to choose this DeWalt model, to be honest. With its charcoal grey metalwork and big black handles it's a mean-looking beast, no doubt down to its American heritage. The yellow plastic body is substantial, particularly around the battery compartment. Drop the pack into the saw and it virtually disappears, though is easy enough to remove. Tools tend to get abused on site, so DeWalt have ensured the battery is well protected. With a battery on board overall weight is about 6kg.

Unlike many circular saws in the UK the blade is mounted to the left of the motor. This can take some getting used to if you're more familiar with a right-bladed tool, though it arguably gives a better view of the cutting line when sawing freehand.

What's immediately obvious is the lack of a riving knife, which is increasingly common



For transport, each pack is provided with a plastic slide and click cover, safely concealing the terminals



Two batteries are supplied with this kit, plus a 50-minute fast charger and sturdy zipped holdall



Drop the pack into the saw and it virtually disappears, though is easy enough to remove



With the blade mounted on the left, you arguably get a better view of the cutting line when sawing freehand



There are two large handles for controlling the tool



The sculpted rear D handle incorporates the on/off trigger, with push-through lock-off button above it, accessible from either side



Instead of a standard circular arbor hole there's a diamond cut-out in the blade, which is fitted on to a similar shaped backing washer

on cordless saws these days. Its omission enables you to make pocket cuts in sheet material, though make sure you have a suitable wedge to prevent the kerf closing up when ripping long boards. And without a knife there's more chance of kickback if you're not careful.

Fortunately, there are two large handles for controlling the tool. At the front is a wraparound slanting bar, while the sculpted rear D handle is shrouded in textured rubber for improved grip. This incorporates the on/off trigger, with push-through lock-off button above it, accessible from either side. Release the trigger and the blade reaches a standstill in about one second.

Fitted with a brushless motor, the power output equivalent is up to an impressive 2,400W. With a speed of 5,800rpm, this is a fast and furious saw.

Blade change

Described as a high-torque saw, this is reinforced by the blade design, which means it can't slip



The large baseplate is ribbed for strength and marked off (and notched) in centimetres down the left side...



A wrench stored behind the upper blade guard is used to release the blade clamping bolt, which has a left-hand thread

during cutting. Instead of a standard circular arbor hole there's a diamond cut-out in the blade, which is fitted on to a similar shaped backing washer. When buying a replacement blade you need to check it has a diamond centre, which is then knocked out.

Blade change is straightforward, a spring-loaded steel button acting as a spindle lock. A wrench stored behind the upper blade guard is used to release the blade clamping bolt, which has a left-hand thread.

A 24-tooth blade is standard, with a diameter of 190mm. Although this may seem coarse it's a good all-rounder for most cross-cutting and ripping tasks. For sawing plywood or veneered boards a finer blade is recommended, though. I tested the tool with both 24 and 36 tooth blades, both of which create a narrow kerf of just over 1.5mm.

Both upper and lower blade guards are substantial, the bottom one fully retractable, with a sizeable side lever when you need it. Like the rest of the tool, there's certainly nothing flimsy regarding build quality.



... which helps when checking the exact length of the slot during pocket cutting

Base & bevels

The large baseplate is cast magnesium, durable but lightweight. It's ribbed for strength and marked off (and notched) in centimetres down the left side. This helps when checking the exact length of the slot during pocket cutting.

Cutting depth at 90° is a fairly standard 65mm. Blade adjustment is via a beefy steel locking lever that clamps tightly against the oversized depth scale. With clearly etched graduations (again in centimetres), you won't need reading glasses to help set accurate blade projection.

A clever two-part protractor scale is fitted to the front of the baseplate, again with a solid lever for locking a bevel. The front quadrant is marked in increments of 5°, with 1° increments at the rear. You can select an approximate angle at the front, or use the rear quadrant for finer setting. Roofing timbers don't usually require such precision as bevel cuts in sheet material, for example.

Tilt the blade over to 45° and depth capacity reduces to 50mm. In fact, you can tilt the blade



Blade adjustment is via a beefy steel locking lever that clamps tightly against the oversized depth scale



A clever two-part protractor scale is fitted to the front of the baseplate, again with a solid locking lever for locking a bevel

up to 53° if necessary. The protractor scale is indented at 45 and 22.5° and there's a zero calibration screw in the baseplate.

Graduations and protractor scales are either heavily raised or etched, so are easy to read and should withstand any amount of wear and tear. There's a pair of kerf indicators at the front of the baseplate for freehand sawing, continuing on the inside of the blade aperture.

In use

Site chippies will appreciate the swing-out rafter hook, enabling the saw to be suspended from a roof timber or joist during first-fix construction. When not required it's just folded back against the body.

Rather oddly (for Britain at least), no rip fence is supplied, though this will be an extra. That means using a guide clamp or batten for sawing accuracy, though not so easy when ripping joists or rafters down to size.



The protractor scale is indented at 45 and 22.5° and there's a zero calibration screw in the baseplate

One of the disadvantages (for right-handers) is the position of the dust port, which is screwed to the upper blade guard. Unless you have the tool hooked up to a vacuum extractor it means you'll get sawdust shooting over your chest, which I suppose left-handers have had to put up with for decades. For site work it's unlikely most chippies would bother with an extractor, though maybe this is a conscious attempt by DeWalt to persuade us of the benefits, particularly their AirLock system.

With some slight apprehension, actually using the saw felt quite safe even without a riving knife. This does encourage you to grip the tool very firmly, though. I used it across a variety of materials including 38mm CLS timber and 50mm sawn softwood. On 40mm oak worktops and 18mm MFC (face down), even the 24-tooth blade gave a pretty clean cut.

Conclusion

Like any portable saw with no riving knife you need to be aware of potential kickback. And considering the price it's a pity there's no side fence included.

This is not really a saw for the workshop, but for carpentry and first-fix work it's superb, with a huge amount of power. The 54V batteries



Site chippies will appreciate the swing-out rafter hook, enabling the saw to be suspended from a roof timber or joist during first-fix construction



No rip fence is supplied, which means using a guide clamp or batten for sawing accuracy

are backwards-compatible with certain DeWalt 18V tools, though these must be XR rather than standard 18V tools. Used this way their voltage automatically switches to 18V (2.0Ah). Holes are provided for fitting DeWalt's optional Bluetooth Tool Connect device, which enables you to keep track of the saw via your phone or tablet. To summarise, this is an excellent saw but not for the faint-hearted! ✂

SPECIFICATION

Blade diameter: 190mm
Bore size: Diamond
Voltage: 54V
Max depth of cut: 65mm
No load speed: 5,800rpm
Weight inc battery: 6.4kg

Typical price: £591

Web: www.dewalt.co.uk

THE VERDICT

PROS

- Heavy-duty, extremely powerful site saw; fast electronic braking; rafter hook; Bluetooth Tool Tag ready

CONS

- Potential kickback without riving knife; rip fence extra; blade choice may be limited

RATING: 4.5 out of 5



On 40mm oak worktops and 18mm MFC (face down), even the 24-tooth blade gave a pretty clean cut

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GUARANTEE



TRITON MOF001 DUAL MODE PRECISION PLUNGE ROUTER

Jonathan Salisbury sings the praises of this award-winning router from Triton, which features a compact and powerful 2- $\frac{1}{4}$ hp motor and an 8,000-20,000rpm electronic speed control

Most of my routing experience has been acquired using high-end models, and the oldest of these must be at least 20 now. I can't remember how much it cost but it was certainly several times that of the Triton MOF001 tested here. I was hoping it would be just as good as the other Triton power tools I have enjoyed using, but it actually surpassed my expectations.

In the box, along with the router, is a spanner, a baseplate, a piece of angle, which looks like part of a fence (because that's what it is) and a handle. It's Triton orange and the rounded shape of the casing is a bit of a change; hand grips are circular and rounded too. There's a clear shutter over the on/off switch, but this plunge router doesn't seem to want to plunge at all! The locking lever is off... There's a rack cut into one of the posts, so there must be a pinion somewhere inside. Consult the manual?

The hand grip on the opposite side to the switch is used to adjust cutter depth. Free plunge is activated by pressing the button on the end

– either lightly for momentary use or more firmly, until it clicks, to lock it on. There is no way that this can be accidentally activated or deactivated, and for a while I wasn't pushing hard enough to release it and thought it had broken.

With the button out, the lock ring is squeezed outwards and the hand grip can then rotate the pinion up and down the rack to position the end of the router cutter. Let go of the ring and the cutter is locked at that depth. The dial above the post can then be used to make 'micro' adjustments (it has another purpose, but more on this later). I have been used to only having free plunge, so I really appreciated having a wind-down, wind-up method for setting precise depths. The spring-loaded bar is locked in place to register the position of the cutter on one of three depth stop positions (two are adjustable and the third is also the gauge). Switch back to free plunge and the spring-loaded mechanism lifts the router cutter up inside the shroud, safely out of the way before cutting begins.

The shroud is fixed to the base with screws

so it can be removed for cleaning or replacing, and acts as a guard as well as providing a dust extraction port. It is pretty big and works as well as any other I have used. Extraction is excellent on the lower speeds, but some fine dust inevitably escapes and I recommend an FFP3 mask. The shroud is crystal clear, but it can sometimes get in the way when aligning the cutter with a mark on the wood, especially when it gets dusty. A small price to pay for health and safety, however.

Spindle lock

The top of the router is flat, so it doesn't have to be wedged in place to stop it from wobbling around when turned over. With that huge guard, you might expect changing cutters to be tricky, but there is no having to try to lock the spindle with one hand and control an awkwardly angled, slipping spanner on the MOF001! On full plunge, the collet protrudes beyond the base and, since the flats are on the bottom (or rather the top when it's upside down), they are easily reached. There is no need to press in or hold the spindle



On/off switch is positioned behind a shutter to prevent accidental starts



When the switch is engaged, the shutter is locked open



The large shroud guards the cutter



Squeeze the lock ring into the hand grip to adjust depth



Fine adjustment control allows you to determine precise cutter position



The three-depth stop turret



With the button out, plunge is locked



With the button pressed in, free plunge is activated



The plunge lock lever is well placed



The shroud includes an effective dust extraction port



The collet is clear of the base for easy cutter changes



The spindle lock button

lock button as a plate on the base does it for you. It can only be activated when the on/off switch shutter is closed, and when the spindle is locked the shutter can't be opened.

Fence

As for the fence, it is made up of a base that attaches to the router with two quick-fit pins (very similar to coach bolts) that pass through keyholes in the plate. These can be tightened very firmly, so there is no movement or risk of it coming off altogether. The fence slides onto the plate and although I was initially put off by its bulk, it actually works very well. Adjustments are a bit fiddly as it currently doesn't slide easily, probably because it hasn't worn in yet. When the plate is removed, the fence setting is retained, unlike those that use two bars slid into the base,

so it can be replaced without having to reset it. An adjustable block with two holes provides a centre for routing circles and is fixed in place with a wing nut.

Plenty of power

The quick-fit pins are also used to mount the router onto a Triton table. The supplied handle fits onto the bottom end of the micro adjustment dial spindle and, with the plunge setting off, allows the router to be raised and lowered without the need for an additional lifting mechanism (which can be pretty expensive).

There is plenty of power for any type of cut and the variable speed – standard on most routers nowadays – helps to set suitable cutting conditions and reduce burn. With sharp cutters, it did exactly what was expected of it; the three-stage depth stop is useful for step cutting deep slots. The MOF001 is not excessively noisy (but still ensure to wear ear protection) and, most importantly, it is easy to manoeuvre. Hand grips are comfortable; balance is good, with most weight between the hand grips; the fixed base slides easily on the material for smooth cutting; plunge is free moving (as long as it is kept clean and oiled frequently) without excessive force, so it can be activated safely; the plunge lock lever is within easy reach and can be knocked off without letting go of the hand grip, as can switching off the power; and switching on requires more effort, so it cannot be done inadvertently. In other words, its performance is entirely predictable, which is especially important with a router.

Conclusion

The one and only issue I have is that the 'soft start' is not perfect; there's a bit of a jolt as the motor is switched on and there are little jumps as speed is increased, although not when decreasing. To really nit-pick, the motor has brushes which will need replacing one day, but that's an easy enough job. The two collets provided are $\frac{1}{2}$ in and 8mm, so if you need a $\frac{1}{2}$ in collet you have to remember to add this to the shopping list, along with a sub-base for guide bushes.

With its low price (aim to pay around £170), you would be forgiven for expecting some obvious compromises, but I cannot find any. An extended test would be required to confirm this, or the effects of wear and tear, but with a three-year guarantee, Triton are pretty confident you won't be disappointed. If the soft start was better, I would have given it the full 5 stars. ✖

SPECIFICATION

No load speed: 8,000-21,000rpm

Plunge range: 0-2- $\frac{1}{2}$ in

Power: 2- $\frac{1}{2}$ hp/13A

L x W x H: 330 x 254 x 279mm

Weight: 10.4lb

Safety power switch: Yes

Sound power (LW): 95.1dB

Sound pressure (LP): 84.1dB

Speed maintenance under load: 8,000-21,000rpm

What's in the box: 2- $\frac{1}{2}$ hp router; $\frac{1}{2}$ in & 8mm collets; table height winder; multi-function fence; collet wrench; extended baseplate; instruction manual

Typical price: £169.99

Web: www.tritontools.com



Supplied components, including a collet for 8mm cutters



The fence base looks bulky, but works very well



Replacing the brushes is straightforward

THE VERDICT

PROS

- Excellent safety features; very easy to set up; high quality; low price

CONS

- 'Soft start' function isn't perfect

RATING: 4.75 out of 5



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By hand, ear & nose

Robin Gates reconsiders our underused senses after finding blind woodturner Sidney Goodrum featured in the July 1965 issue of *The Woodworker*

We're all familiar with the concept of working by hand and eye, but here's something which impresses me more: working by hand and blind, an interest which resurfaced when I ran across this July 1965 issue of *The Woodworker* with blind woodturner Sidney Goodrum pictured in the thick of the shavings.

This old magazine is roughly contemporary with my first experience of what blind people can do. 50 or more years ago a blind piano tuner, having made his own way from the bus stop, was steered into my Gran's living room and onto a seat at the upright piano that'd survived the Portsmouth blitz only to be bombarded by the heavy hands of a half dozen grandchildren. For what seemed an age I sat in obedient silence, watching him restore each note to a pitch that made him smile, repeatedly striking keys while making minute adjustments using a special tool. When finished he played a lullaby, then reverently returned the tuning key to its felt bag, as though it contained all the magic, diverting my curious stare from his own unseeing eyes. Tuning a piano, an instrument of sound, by ear, I could grasp even then, but using woodworking machinery without seeing – how is this possible?

Skills & confidence

Sidney Goodrum explained he'd been a lorry driver until losing his sight in his mid-40s. Then, while at a government rehabilitation centre in Torquay, he'd discovered woodturning, and a fellow trainee had read to him from Frank Pain's book *The Practical Wood Turner* – a 1957 volume from *The Woodworker's* own series of handbooks, which are still in demand.

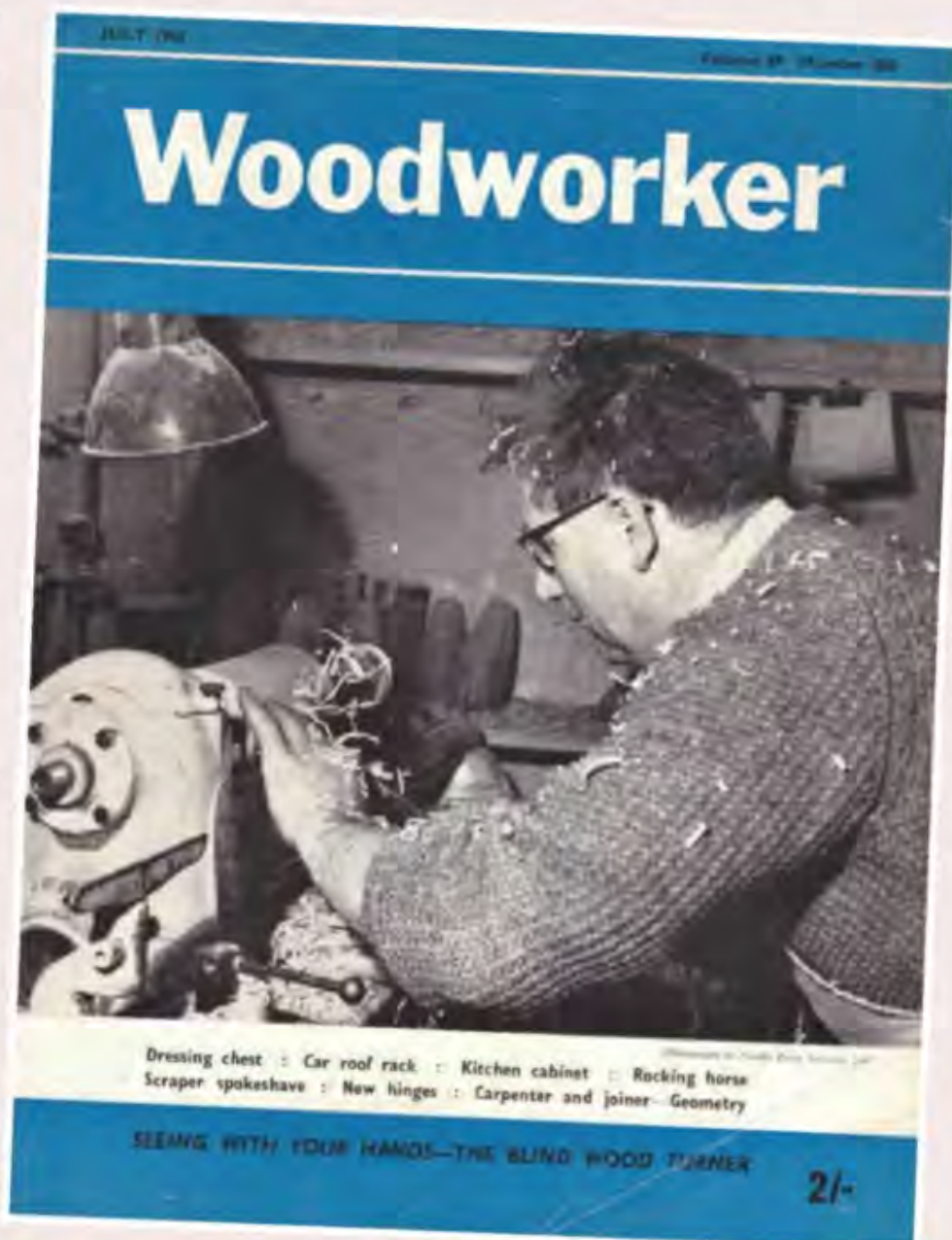
I can only imagine the courage needed in making a first attempt at turning wood unable to see what you're doing, finding the toolrest, cautiously introducing the gouge, feeling, listening. Mr Goodrum admitted the early stages were fraught with difficulty, not to mention danger. "All I succeeded in doing was tearing huge lumps out of the wood or having the tool torn from my hand."

But his skills and confidence took a leap forward when Frank Pain visited him at home, offering help with technique and equipment. Having learned on a Myford ML8 in Torquay, Mr Goodrum bought a similar lathe and had it installed in the garden shed. From turning thick-walled bowls he was soon turning them paper thin, the new skill grew into a business, and before long he was producing hollow ware and candlesticks at the rate of 50 pieces per week.

devised a device for finding centres, but otherwise his tools didn't differ from those of a sighted turner. What he lacked in sight he more than made up for through honing his other senses and good organisation, developing a nose for identifying timber by smell, returning each tool to its clip on the shed wall without fail. While Mrs Goodrum assisted by telling him which way the grain ran, once the wood was spinning he was on his own, man and machine, with only a knee-operated cut-out switch between himself and possible injury. Frank Pain said of Sidney Goodrum that he had 'an extremely light touch' and could 'feel the tool

do the work' yet admitted 'I still don't know quite how he does it!'

It seems to me that although blind Sidney Goodrum wasn't working blindly, he'd developed not only what Thomas Hardy memorably described in *The Woodlanders* as 'the intelligence of the hands' but also the intelligence of the ear and nose, and through these he clearly saw a great deal. Touch, sound and smell are senses I'm paying more attention to in my woodwork now, briefly closing my eyes while sawing, planing or simply examining the timber – working for a moment by hand, ear and nose. ✕



'The intelligence of the hands'

To gauge the diameters of fruit bowls Sidney Goodrum used plywood templates, while a friend



WINDSOR CHAIRS

APPEARANCE, COMFORT & DURABILITY

Internationally renowned chairmaker **Mike Dunbar** discusses the making and design of a number of different North American Windsor chairs

North American Windsor chairs are arguably the most successful furniture form ever developed. That's a pretty bold statement, but I can back it up. First, let me tell you why you should put any stock in my claim. I have made Windsor chairs for 48 years. I became fascinated with them in May 1971 while a student entering my junior year. I was working towards a degree in French. Long range, I planned to obtain a doctorate and teach at university level. I was furnishing a small apartment and went to a yard sale – there, my life changed. On a porch I stumbled onto a small black chair that captivated me so much I bought it. It was the first 'zig' in my zigzag career. That chair did not stop working its magic on me. I went to the library and discovered that, by accident, I had purchased an antique Windsor. I was hooked and began to study these chairs. I learned that they were initially developed in England shortly after 1700 and that the form had been introduced to Philadelphia around 1740. There, Windsors were Americanised, developing a different appearance and construction from their English antecedents. I eventually tried my hand at making a Windsor, but ran into a problem: there was no one to teach me; the old guys had been dead for 100 years. Since they learned their craft through apprenticeship, no one had left a written record. Antique Windsors were all I had, so I began to examine any I could find. Those that were broken allowed me to examine the joinery and were most helpful.

The Windsor Institute

I figured out enough of the process to cobble up a chair, then a second, and so on. Then came the first 'zag'. Someone bought a chair and my career plans changed. Before I graduated I had rented a single-stall garage and was in business as a Windsor chairmaker. My life zigged again a year later when I published a magazine article about my little black chair. That set me to writing a book about Windsors. I published it in 1976 and found myself dealing with woodworkers, a group very different from my chair customers. Woodworkers didn't want to buy chairs; they wanted to make their own. In 1980 my life changed again when I was invited to teach a chairmaking course in Utah. For the next decade I continued to make

chairs, write about Windsors, and travel across the United States and Canada teaching others.

Another really big 'zig' occurred in 1992 when my wife Susanna and I had a son, our only child. I no longer wanted to travel. At Susanna's urging, we rented a building and invited woodworkers to come to us instead of me going to them. The response was so great that the next year we purchased land and built our own building. We had become a school and North American Windsor chairmaking now had a permanent home. We named it 'The Windsor Institute'. It fit the definition of an institute; we not only taught chairmaking, we studied Windsors, worked out new techniques, and fostered a group of toolmakers. We developed a curriculum of 17 different styles of Windsor chairs. Soon we were teaching as many as 33 classes a year with as many as 28 students coming from every state, every Canadian province, and five continents. I estimate we taught around 6,500 people.

I retired in 2016 and was overwhelmed by a clamour from disappointed woodworkers who planned on taking a class but had procrastinated too long. Over and over I was asked, "could you just make one exception and teach me?" I thought

I had hung up my drawknife but my life contained at least one more 'zag'. I decided to record our introductory sack back class, the one that prepared students to take any of our other classes. I would tape the instruction as close as possible to the way I taught it. I did not intend to show the viewer how a chair is made, but rather how to make a chair. That's a big difference. Instead of selling the video on a CD we decided to post it as a series on YouTube so that one could take a class with me for free without ever leaving home. I envisioned taping a similar series for each of the chairs we taught. We named our channel 'The Windsor Institute', as it is the digital version of our school.

Appearance, comfort & durability

The purpose of telling my life story is to show you the depth of my experience with Windsors. When I write that these chairs are arguably the most successful furniture form ever developed, I am not talking through my hat, but from experience. I support my argument based on the three criteria by which furniture is judged: appearance, comfort and durability – and Windsors excel at all of them.



Mike using a spokeshave to round the edge of a seat

A SAMPLING OF 18TH CENTURY NORTH AMERICAN WINDSOR CHAIR DESIGN



1 Sack back. Like all Windsors it is a composition in the element of line. When you approach its vertical and horizontal elements, pull your eye through up and down, accelerating and slowing for 1.8m.



2 Continuous arm



3 Bow back side chair



Mike drills a spindle hole in the arm of a tête-à-tête

Design

We still copy the original designs worked out by North American Windsor chairmakers 220-250 years ago. During my career I have introduced these forms to cultures where they were unknown and they are readily embraced. Why? Windsor design is timeless and universal. No one has been able to improve on it. Yes, some makers have tried to reinterpret the old designs and stamp them with their expression, but after a decade or two their attempts become dated. The future will not preserve them. However, even the distant future will continue to reproduce 18th century forms. That is the nature of timelessness. I learned long ago not to impose myself on Windsors, but to work with designs the centuries have tested and proven.

Windsor design developed around the chair's function. These were not formal pieces; they were intended for lesser rooms, public settings, and even outdoors. Such use required a durable finish; varnish and shellac were obviously not up to the job. Paint was the only suitable choice, and green was the fashionable colour. In fact, Windsors were referred to colloquially as 'green chairs'.

A solid colour channels your design choices into a narrow range of possibilities. One of those is the element of line, and that is what North American Windsor chairmakers chose. Line is dynamic in that it moves the viewer's eye. Artists understand this technique and use line in paintings to draw the viewer through a composition. Chairmakers did the same, creating compositions that draw the viewer's eye through the chair along a predetermined passage. The sack back is a good example (**photo 1**). As you approach the chair your eye will typically land about centre back. There, three parallel lines formed by the long spindles seize your eye and draw it quickly

upward to the bow. This heavier element takes over, moving your eye sideways for a short distance, slowly at first. Then, your eye accelerates as it begins the passage along the downward curve. After a short and slower passage along the arm, the stump takes over. It drops your eye precipitously and passes it off to the horizontal line formed by the edge of the seat. In a mere moment your attention has been pulled up and down, slowing and accelerating through a composition about 1.8m in length. My contention is that Windsor design is universal because the human brain interprets this experience as enjoyable and pleasurable. The most common response is the exclamation: "Hey, that's a nice chair." You encounter and interact with chairs every day. Consider how often you pause and say "nice chair" and you realise you do not see many. However, it has happened to me for 48 years whenever people interact with my chairs. I wish I could claim the genius; I only figured out what the old guys had done and copied them.

Comfort

Windsor chairs are comfortable. That's an unusual claim for a wooden chair. We have a set of eight sack backs around our dining table. Dinner guests always remain at the table, chatting hours into the evening; no one ever suggests we move to a more relaxed setting. Here's another story that underscores my point: our school was a destination for woodworkers. They and their families formed a daily stream of visitors passing through, curious to see the place. To entice visitors to return and take a class, Susanna employed a clever marketing tool: she always invited guests to sit in one of the chairs in our showroom. Upon sitting, a look of surprise and pleasure always came over the visitor's face. To this Susanna



4 Side view of a sack back revealing the raised seat, the reclined back, and the rear leg extending beyond the pivot point.

responded: "You never thought a wooden chair could be that comfortable." The guest would invariably nod in agreement. Thus convinced, many came back to take a class.

Why are Windsors so comfortable? Perhaps this is the question. Why are other chairs not comfortable? The answer is construction. Most other chairs are built using two elements that form the rear legs, while also projecting upward to create the stiles that frame the back. Shaker chairs and Queen Annes are examples. These leg/stiles are limiting. If the part is sawn from plank, the chair back can incline rearward only so far before grain run out weakens it fatally. If the leg/stile is turned, as in a Shaker chair, the stile can be bent to create some rearward cant, but the chair becomes tippy as the sitter's centre of gravity is shifted behind the pivot point – the chair's rear legs. Furthermore, this other method of construction relies on a four-piece seat frame to connect the front and rear legs, resulting in two adjacent joints per leg. As woodworkers we recognise a weak point when we see it. To avoid undue stress on these locations the seat frame has to be placed parallel to the floor. The result is a level seat with limited incline to the back, and that's not a comfortable position.

Consider what you do when you enter a car with adjustable seats, where you are in control of selecting a restful position for yourself. You raise the front of the seat and recline the back. You form what amounts to a pouch in which you are supported. A skier riding on a ski lift balances in this same position, and it is how a Windsor places you.

This position is possible because a Windsor has a solid wooden seat that divides the chair into two systems: the undercarriage and the back. The seat serves as the anchor for these two

structures. Having no shared elements, the two systems can be constructed independently, each serving its purpose in the chair. A Windsor seat does not have to be level with the floor and can be slightly higher in the front. The chair back can be angled relative to the seat without weakness – 16° is a common recline (**photo 4**).

This posture puts the sitter's life and limb at risk in that they are off balance. If the chair tips backward there is no possibility for the sitter to recover. No worry. Because the legs are anchored into the seat, they can be canted rearward. All the chairmaker need do is locate the pivot point (the feet of the rear legs) behind the sitter's centre of gravity. This way, the chair cannot be tipped without the sitter consciously pushing it up onto the pivot. You wouldn't do that because your mother taught you not to (**photo 5**).

Windsor construction, built around a solid wooden seat that serves as an anchor, allows a degree of comfort not possible in the other method. Oh, and one other feature: you can deeply dish that thick seat – called saddling – to make it easier on the backside (**photo 6**).

Durability

Untold numbers of antique Windsors have survived 200-250 years, making them a staple in the American antique market. And, they are generally as tight as when made. These chairs are not precious objects that were handled by curators wearing cotton gloves. Their worn surfaces testify to the hard use they experienced over six to eight generations. We don't have to take Windsors into a laboratory and subject them to testing to see how strong they are. Time is the ultimate test. Contemplate the stresses you cause when you sit in a chair. You do not rest immobile like a sack of potatoes; you squirm, you lean and you cross your legs. Your constant movement creates wracking forces that tear at a chair.



6 A solid wooden seat can be deeply dished – called saddling – to add to a Windsor's comfort.



5 A Windsor allows the sitter to recline in comfort, but places him off balance in a precarious position. The rear leg, extending beyond his centre of gravity, keeps him safe.

Compare long-lived antique Windsors with our experience. Buy a new chair today and in a decade or two it is at the curb waiting for the rubbish pick up. It is obvious: the old guys knew something that was lost. I discovered their secrets while examining antique chairs. Their makers employed a variety of unusual joints that leave us in awe at their genius.

We return to the seat, the anchor for the undercarriage and back. The joints that connect the legs to the seat bear the most load and stress. Rather than shaped as a cylinder the leg tenons are truncated cones, fitted into reamed holes (**photo 7**). They are known as locking tapers.

Every turner recognises this device as it secures the drive centre into a lathe's headstock spindle. This is a powerful joint. To illustrate its strength to my classes, I would clamp a board with a reamed hole to a large 2 x 1.2m bench top. I fitted a leg tenon into the hole and set the joint with the rap of a hammer. Then, I pulled upward on the leg, lifting a bench top with four Record 53 vices attached to it. It was a vivid demonstration. Contrast this feature's strength with the other type of chair construction, where the leg joints are the weak points.

On a Shaker chair or Queen Anne, the stretchers hold the legs together. This is necessary for should the legs separate, those weak points will be stressed and break. Holding together means these joints are in tension. In contrast, Windsors have strong and dependable leg joints. Their stretchers push the legs apart, meaning these joints are in compression. This is accomplished by making the stretchers just slightly longer than the distance between the legs. With powerful, reliable tenons securing the legs to the seat, Windsor stretcher joints cannot fail, short of the seat or a leg breaking.

A Windsor undercarriage is rigid. The back is equally strong, but in another way: it is tough and flexible. The concept is the same as a suspension bridge, which is made of thin cables woven into a tough, flexible web. That web is anchored on both ends by concrete piers. A Windsor chair back is also a flexible web, woven of thin oak parts (spindles and bent arm and bow). The assembly is anchored by maple stumps and short spindles. If you are standing behind a Windsor, you can see this web flex as it absorbs the stresses created by a sitter's movement.

Like the legs, the stumps are secured to the seat and arm rail with locking tapers. However, the lower ends of the spindles connect to the seat with another clever joint. Chairmakers made their seats of soft, compressible woods – pine, chestnut, or poplar. These species are easy to shape and saddle, but they also made possible the next joint. The ends of the spindles are slightly larger than their corresponding holes in the seat. I create $\frac{3}{16}$ in tenons and bore $\frac{1}{8}$ in holes. The tenons are shaved with a gouge, in a way that creates pronounced facets (photo 8). The concept is similar to a square peg, round hole. During assembly the slightly larger, faceted tenons are driven into their slightly smaller holes with a hammer. The hardwood (oak) distorts the softwood hole, making it conform to the irregular tenon. This joint is permanent and nearly impossible to work apart (photo 9).

The final technique is wedging. This is used in the chair's through joints. This technique causes the part to flare, making it slightly thicker than the hole through which it was passed. Think about leaning back in a chair and stretching your torso. The stress created by your shoulders pulls on the bow where it is joined to the arm. Without this swelling the joints could pull apart and the sudden stress could snap the spindles.

When moving a chair we usually grip it by the arms or the bow to pick it up. This creates a yanking action. A sudden separation of the

bow or arm would risk breaking the thin members that form the back. That does not happen because of the swelling that results from wedging the tops of the stumps and the short and long spindles (photo 10).

The remarkable success of North American Windsors in the areas of design, comfort and durability support my contention that these chairs are the most successful of all furniture forms. If you wish to understand these Windsors in greater detail, you can watch as I teach you how to make one on YouTube – just go to 'The Windsor Institute' channel. While there, feel free to visit the 'community' tab where you can converse with myself and other chairmakers and hopefully learn more about this fascinating subject. ✕

FURTHER INFORMATION

Visit www.youtube.com and search for 'The Windsor Institute'



7 Windsor chair leg tenons are truncated cones. Fitted into a reamed hole of the same shape they self-lock, creating a strong and reliable joint.



8 A slightly oversized faceted tenon on the end of a long spindle is driven into its hole in the seat with a hammer. Because the seat is made of a softer wood than the oak spindle, the hole distorts, conforming to the tenon's irregular shape. This joint is nearly impossible to separate



9 A pair of sample joints that I cut apart to show how the faceted oak tenon distorts a hole in a soft wood. I made these joints more than 30 years ago and they remain tight



10 Look closely and you will see that the exposed end of this short spindle is slightly larger than below the arm. The wedge has caused it to flare so that it cannot pull back through the hole

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WORKBENCH MADE SIMPLE

Rik Middleton's design for a good, solid woodworking workbench is suitable for any craftsman, including experienced cabinetmakers

In this article I'll show you how to make a good woodworking bench. It is a construction the beginner can cope with, is cheap and convenient to make and the result is a bench that, at least within the size range, should satisfy any craftsman including experienced cabinetmakers. It should interest other artisans too because, being simple, it is also widely adaptable.

A simple workbench design – simply made

I would encourage any new woodworker to appreciate that a good workbench is their most essential tool. The best saws, planes and chisels, etc. are not capable of good work without good support, but I see the obvious problem – expense. Not only are good tools expensive when you don't yet know the ways to get the best from good old ones, but the price of a really substantial commercially produced bench is very off-putting. And I've seen woodworkers with posh new benches almost afraid to use them and risk their polished hardwood surfaces.

Away with all that, what is needed is a rigid and substantially flat surface at the correct height that doesn't move under sudden load or shock when working. And if it's made of cheap stuff that can be readily replaced when necessary, there will be less inhibition about getting on with the work.



1 The floor and infill sections. Note that the difference in length leaves space each end for the side pieces to fit on the floor section

That's what I reckon and I don't think I'm unusual. I also fear that any bench with vertical and horizontal leg members mortised together can become less than rigid in time. And they weigh a lot because they need to, which can be inconvenient.

This design presents a 4ft long × 18in wide piece of MDF (total cost of replacement in 25mm MDF is currently around £10) held flat, at a good working height and it will not move while you are working a piece on it. I have produced a cutting list, which gives the whole item from a standard sized sheet of 25mm MDF (currently less than £50) plus a box of screws and plastic corner blocks. Many suppliers will do machined cuts for you in modest amounts and, cut up, it will fit in most cars. MDF is pretty rigid anyway but this method assembles it in what I call 'box' format where corners meet in all three planes and support each other. And ultimately you work from a position where you are standing in the box so it can't move no matter how hard you plane, for example. For all that it does not weigh a great deal and many of us, at least until some vice is permanently fitted, could carry it from one side of the workshop to the other.

If the 31in high working surface is not ideal for you, then redesign can be done but give a thought to all the things you are changing. If you make it lower, your worktop gets wider and you have less floor to stand on. If that applies, another long ways cut to reduce it back to 18in might be a good idea to add to the cutting list.

Customising the bench

There are various ways in which the bench may be used. As you can see, I use a Zyliss-style vice and these are quickly removable. Due to the thickness of my other bench in that workshop, I chose to thicken the ends of my bench with strips of the offcut. A more permanent traditional woodworker's vice will need part of the offcuts to block out the thickness of the worktop. These I cannot go into at the moment as each model will have its own fitting requirements.

Another thing you might like to do is to cover the area where you stand to work with some more appropriate and/or more comfortable surface such as rubber matting. I have also used laminate flooring offcuts, which reduces the working height very slightly. This will be best firmly stuck or screwed down.

On one side piece on the outer surface of my older bench (sadly not available to photograph), I have a 'holster' for my cordless drill. This has proved a good idea to me. It consists of a piece of 2×4 softwood shaped to support

the drill body and screwed through from the inside. Screwed on to this is a shaped piece of plywood, which prevents the drill falling off the end of the shaped support.

The front surface of the infill section can have any arrangement of tool hangers or spring clips fitted as per your requirements. It might even be possible to incorporate a small drawer unit if it doesn't bang your knees.

But my favourite modification is to have a small vacuum extraction unit let in to the infill panel and to have a power take off switch arrangement. This means that when you are using, for example, a router, you can fit up a vacuum hose to the tool and starting the router starts the vacuum extractor simultaneously. Again, no template can be specified as there are different sizes and shapes of such extractors, but I have given some idea of what it should look like (see Fig.2). You should first create a template from pieces of corrugated cardboard, which will allow the extractor to be put in. It should have wheels, which can prevent it coming out without lifting it over a remaining strip across the bottom. Cut it out with drilled holes and a hand-held jigsaw. With this in place you can instantly reach below the worktop, switch on the suction and pull your vacuum hose end out of a spring clip. ✕



Fig.1 Workbench design



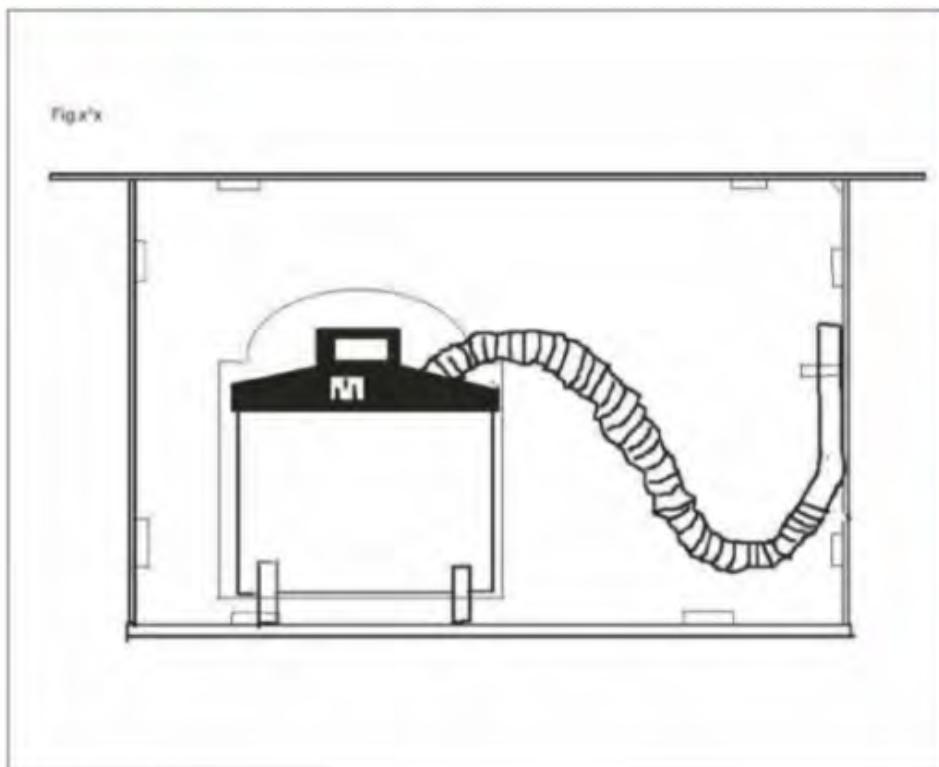


Fig. 2 Vacuum extractor arrangement



2 And one side. This side piece needs trimming accurately to the height of the infill



3 Marking the height of one side. I have both pieces resting on the MDF floor and vertical so that I can mark the height absolutely accurately



4 And cutting. You know how to cut to a pencil line for absolute accuracy, although not everyone does it quite the same. Please note that the piece nearest the camera is very well supported so that the last part of the cut will not break nor will the piece fall to the floor



5 The cut side in place. And it fits well – a nice step-less continuous surface. Now it's time to start fitting the corner blocks



6 Fitting corner blocks. I screwed eight corner blocks on the perimeter of the 'infill' piece. You may see how, at every stage, I have pushed the work against the skirting board in my little log cabin to ensure that I get the edges flush. Now I have to turn over and fit eight more to the other side. I made sure that they were not exactly opposite the blocks on the first side so there was no unfortunate meetings of screws



7 Corner blocks on the sides. I used exactly the same process to put four corner blocks on the sides – near, but not too near the corners



8 Fitting the first side. Again, I used the idea of pushing the work against the (fairly accurately vertical) skirting board when fitting the screws



9 Of course, the second side needs trimming to the correct width. The first side, which was trimmed to length, can serve as a template and marked and cut in exactly the same way. Now to fit the 'infill' section. Put the infill section about halfway along the side section and ensure it is parallel to the floor edges before screwing it in place. Once this is done, the rigidity really becomes noticeable



10 Final assembly. And now it's just a case of lining up the other side and applying the screws. I then turned it upside down to fit the top by exactly the same process. So this is pretty much the finished job, and you have the 18in square offcut, which has various possibilities



11 Ends thickened for the clamps of my vice. Since I like using the old Zyliss design of vice, I cut pieces from the offset and thickened the ends of the worktop. This also makes it more compatible with another bench I sometimes use this vice on. They are screwed on with 44mm screws from the underside



12 A bench hook. I still had enough offcut left to make the old traditional bench hook. This is glued as well as screwed and the parts have been carefully set up with an accurate right angle between the working face and the right-hand side. If you like the other more traditional kind of woodworking vice, you will need offcut bits as packing to fit it, and then it's done. Now I have no more excuses, I'll have to do some work!



13 Giving the new bench a workout

TOTEM POLE CARVING

THERE'S MORE TO THEM THAN YOU THINK

Paul Greer takes a closer look at the carving of totem poles through the ages as well as how they are made, with a focus on celebrated totem pole makers of our time

Totem poles are creations of the indigenous peoples of the Pacific Northwest coast, including Washington State, British Columbia, and Alaska.

The term 'totem' derives from 'odoodem', a word in the (Native American) Algonquin language meaning 'kinship group'.

The poles are made from large trees, usually western red cedar, and display carvings which symbolise clan lineages or cultural beliefs, or commemorate ancestors or notable events. These closely reflect the culture of the group or individuals they represent.

They have practical functions, too, acting as architectural features, mortuary vessels, or welcoming signs for visitors. Most indoor ones take the form of posts or pillars.

Although the cedar from which most are carved is highly rot-resistant, the rainy climate of the Pacific Northwest means their life rarely exceeds 60 or 70 years, though a few last a century.

Early totem poles

The earliest totem poles were carved using tools made of stone, shells, or beaver teeth – a slow and laborious process. However, by the late 1700s, metal tools imported chiefly from the



Totem poles and houses at 'Ksan, near Hazelton, British Columbia

USA and Britain led to increased production and permitted more complex designs.

During the last quarter of the 19th century, scientists, naturalists, collectors and tourists photographed or physically preserved large numbers of indigenous artefacts. These included totem poles, many of which featured at the Centennial Exposition in Philadelphia in 1876, and the World's Columbia Exposition in Chicago in 1893.

Sadly, during the early years of the last century, the assimilation policies of Canada and the USA discouraged or even prohibited traditional cultural practices. However, in the 1930s, a combination of scholarly interest and a more educated public led to a new respect for what had been dismissed or condemned, and about 200 old totem poles were salvaged by the United States Forestry Service.

Six types of pole

There are six basic types of pole: house frontal, mortuary, memorial, welcome, ridicule (or shame), and (interior) house posts. Their heights vary considerably; not surprisingly, the house posts, being inside, are smallest (usually in the 7-10ft range), but welcome ones can be up to 40ft, while mortuary ones are often between 50 and 70ft. Taller poles still will be mentioned later.

Contrasting with memorial poles (which usually have just one carved figure at the top), house frontal ones are very decorative. Also known as heraldic, crest, or family poles, they tell the story of the clan, village, or family which owns them. Often, a 'watchman' figure, offering



Totem pole in Kispiox, 2007
Photograph courtesy of www.cathedralgrove.eu



Alaskan Totem Poles at the 1893 Chicago World Columbian Exposition



L-R: The One-Legged Fisherman pole, the Raven pole, and the Killer Whale pole in Wrangell, Alaska



Totem poles in Thunderbird Park, Canada

protection, is the topmost carving, and the pole is fixed outside the clan house of the most prominent community leader.

The meanings of the designs on totem poles are as varied as the cultures from which they spring. As well as humans, animals, fish and insects figure prominently, as do symbolic beings, which can change shape, or supernatural ones, like the Thunderbird (which in Algonquin mythology makes thunder by flapping its wings).

Perhaps taking their cue from western culture, outsiders often mistakenly assume pole figures to be in ascending order of importance. In fact, the opposite is often the case, with the most significant appearing at the bottom, or at eye-level.

Making totem poles

So how is a totem pole made? First, a suitable tree is selected, then cut down and moved to the carving site, where the bark and outer layer (called sapwood) are removed. Which side of the tree to

carve is chosen, and the reverse removed, making the whole much lighter. The centre of the log is then hollowed out (making it lighter still) to prevent cracking.

Next, the intended designs are outlined on the wooden surface, using paper patterns. The rough shapes are formed with chainsaws, then made more precise using adzes and chisels. Knives and other small tools fashion the finer details, and, finally, paints are applied to highlight and enhance specific areas.

Following tradition, the colours used are obtained from natural sources, such as clay, roots, tannic barks, tree moss, and the juice of grasses. Their decorative value apart, the five principal colours are symbolic. White can stand for the sky, purity, and peace; red for blood, war,

or valour; blue for happiness, water or sky; yellow for sun and light (or happiness again); and green for the earth, hills, trees or mountains.

Installing a pole entails digging a deep hole and inserting the bottom end into it, while supporting the top end with a wooden scaffold. A team of men then haul the pole upright, while others stabilise it with side ropes and cross beams. Once vertical, the pole is fixed by filling the hole with rocks and earth.

Having erected the pole, the carving team and invited guests perform a celebratory dance next to it, which is followed by a commemorative event called a potlatch.

The traditional designs on totem poles reflect complex rules and customs, and are considered the property of a particular clan or body of carvers. However, financial temptation has led to 'fake' poles sometimes being produced, with scant regard for cultural accuracy, or offence caused. Risk of the latter has been greatest when these have been placed in crass entertainment settings, where they're unlikely to receive the respect poles normally enjoy.

The purpose of ridicule (or shame)



Tlingit totem pole brought from Alaska to Pioneer Square in Seattle



Totem poles at the Museum of Anthropology, University of British Columbia



Totem pole in Vancouver, British Columbia



Incomplete Haida pole in Skidegate, British Columbia



The K'alyaan Totem Pole of the Tlingit Kiks.ádi Clan, erected at Sitka National Historical Park to commemorate lives lost in the 1804 Battle of Sitka



A totem pole from Brockton Point, Stanley Park, Vancouver, British Columbia



The Seward Pole

poles is to discomfit those guilty of unpaid debts or other transgressions. Most represent their 'target' unmistakably, and usually mischievously, but are removed when the debt is paid, or the wrong amended.

A shame pole erected in Cordova, Alaska, in 2007, depicted the face of the (then) chief executive of the petroleum giant, Exxon. This was because punitive damages of \$5 billion awarded by an Alaskan court on account of the *Exxon Valdez* oil tanker spillage in nearby Prince William Sound remained unpaid.

England may seem an unlikely place to spot a totem pole, but in the south of Windsor Great Park stands one 100ft tall. It was presented to our own Queen Elizabeth in 1958, to commemorate the centenary of British Columbia. It was cut from a tree 600 years old, and weighs nearly 13 tons.

The loftiest poles are startlingly tall. One at Alert Bay, British Columbia, stretches to 173ft (the height of Nelson's Column), though it consists of more than one piece. The largest made from a single tree is at McKinleyville, California, which stands at 160ft.

Celebrated pole makers

Some individual pole makers are celebrated. Ellen Neel, the first woman carver on the Northwest coast, is one. Her uncle, Mungo Martin, produced the pole presented to Queen Elizabeth, and, tutored by her grandfather, she learned so quickly that, by the age of 12, she was selling her own work. During a hard and tragically short life (she died in 1966, aged 49), she produced not only commissioned poles, but small, good-quality souvenir ones for tourists. Her work, large or small, is striking, and graces public collections around the world.

David A. Boxley (born in 1952, and belonging to the Tsimshian tribe from Alaska) found no-one alive near him from whom to learn totem carving, so he taught himself. Today he enjoys an international reputation, having completed dozens of poles, and inspiring others through the instruction and demonstration events he offers at venues world-wide.

In 2013, the University of Nebraska Press published *A Totem Pole History*, reinforcing the academic respectability now also accorded to this long-established and much-admired craft. ✕



An example from Saxman Totem Park, Ketchikan, Alaska



Kwakiutl carver Ellen Neel working on a totem pole



This Centennial Totem Pole has a twin in Windsor Great Park, London. The pole is an exact replica of one carved for Queen Elizabeth II by Chief Mungo Martin of the Kwakiutl Nation. Each Figure on the Pole represents a mythical ancestor of the 10 tribes of the Kwakiutl Nation. This 100ft high totem pole was dedicated at a ceremony on 15 October 1956 in celebration of British Columbia's centennial year

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Jan Fridh, Sharpening Manager at the Dala horse making factory

TORMEK VISIT NILS OLSSONS HEMSLÖJD, THE DALA HORSE MAKING FACTORY

The Olsson brothers of Nusnäs in Dalarna began the old handicraft of carving horses as a way to help supplement their family's income. In 1928, when Nils was 15 and Jannes 13, they started a small production workshop, taking out a loan to buy a saw. The risk paid off, and the descendants of the Olsson brothers are still making Dala horses in Nusnäs nearly a century later.



Jan Fridh, Sharpening Manager, takes up the story: "We have about 60 people who carve for us here and we provide them with sharp knives all the time. They hand in their dull knives and get sharp well maintained ones in return. On average there will be 50-60 knives to be sharpened

daily. We do it using a Tormek machine. It takes little more than a minute to sharpen one knife.

"You start off with quite big sizes of horses, say 20cm, and use a new knife. As time goes by and as you sharpen it, the blade becomes shorter, and you use it for smaller and smaller sizes of horses. In the end you are down to carving the 1cm horses, but it can take you many years before you come down to that size."

Maintaining Swedish tradition

Horse making expert, Lelle Ihrén, continues: "The wood we use is pine. To make it a bit softer we dip it in water and leave it for a while. With a sharp knife and soft wood, you will get fine horses. Today we make them in 20 different sizes. We go from 1cm, which is the size of an earring, up to 1m in a series production, and the larger horses are made to special order. Red, blue, white, black and natural are the traditional colours but today they come in all sorts of other variations."

Every Dala horse is unique. No matter what colour or design you choose, you can be assured that by taking home a Dala horse you are helping to maintain a Swedish tradition that may have achieved global fame but still remains rooted in the community where it began, so many years ago.

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WOODWORKER'S ENCYCLOPAEDIA **PART 5**



In this article, **Peter Bishop** moves from bodgers to books and bows to bright stuff



Bodger

'Bodged' is often used in a derogatory manner to describe something that has been poorly made or 'bodged together'. It probably emanates from a lack of respect for those skilled 'outworker' craftsmen who were the backbone of the chairmaking industry in the 19th century. A bodger was someone who worked directly with the harvested timber in a forest or wood. They'd use pole-lathers to turn the spindles, legs and shaped rails that were used in large quantities to make traditional chairs. The components they made would form part of anything from simple kitchen chairs through to the more sought after Windsor chairs. The timber of choice was beech but whatever was suitable and available would be used. At that time the centre of chairmaking was located around High Wycombe in Buckinghamshire, so the bodgers would be plying their trade in that and surrounding counties. So the next time you hear someone being described as a bodger, reflect on the skills they had!

Bogie

In my old business, many years ago, we used 'bogies' to move large boards or packs of timber around our production mill and surrounding areas.



A pole-lathe in operation – Hampshire Coppice Group



A Bodger at work, making a chair leg on a foot-powered lathe



44ft long Fenland black oak trunk being excavated

Bog oak

Bog oak is prized for its dark, nearly black colour, its hardness and rarity. Found in peat and similar bogs the oak trees have fallen and sunk to a depth where they've been, effectively, sealed from all the elements in an airless cocoon for centuries. When found, the logs can be wholly or nearly completely intact. The full beauty of the timber is exposed when they are converted. Bog oak can be featured in furniture right through to fancy pieces of jewellery.

Bole

The 'bole' of a tree is its trunk. This is simply another word used in various regions of the timber trade. In context, a log buyer or sawyer might talk about the size or straightness of a bole in exactly the same way as others do a trunk.

Book-matched

Simplistically, imagine a nicely figured piece of, say, oak, that's about 25mm thick. If you cut this down the middle and produce two thinner pieces and open them like a book, this is exactly what you get when book-matching. Book-matching is primarily used with veneers. Where the thin sections are sliced off the main block they can

be placed alternatively to create the open book effect. What you get then is what, from one side to the other, is a mirror-like image.

Bottom rail

Wherever you have a structure incorporating a frame and rails, the lower one is referred to as the bottom rail. A typical example of this is the bottom rail in a door frame.



Book-matched veneer wardrobes in burr walnut

Usually a simple, four-wheeled platform upon which timber could be stacked, the ideal and most manoeuvrable bogie has a central axle with large wheels then a couple of smaller wheels in the idle each end. If these smaller wheels are slightly off the ground, you can then twist and turn the bogie in any direction you wish.



A piece of bog oak



Precision cut, sanded cocobolo cut from the same log

Bound moisture

Bound moisture or water is the opposite of free moisture or water. Wood is a cellular material. Once it is cut it can give off and take up moisture just like a sponge. When cut into planks it will give up its free moisture fairly quickly, leaving behind the bound moisture, which takes longer to extract. Imagine a series of adjoining tubes: some are joined on their sides, some on their ends. The free moisture is that which is contained within the tube cavities and the bound moisture is trapped in the tube walls. Replace the tubes with cells and you have got to grips with this feature of wood. Later on we'll cover fibre saturation point, which is the point at which the free moisture has all gone.



Bowed engineered wood flooring



Gramercy Tools bow saw



Antique bow saw

Bow

Bowing is one of the less attractive features of timber as it dries out. It's identified by putting a plank on a flat surface with any curving faces upwards. If it can be rocked by depressing one end, it's likely to be bowed. Depending on the severity of the bow, it can be straightened. Each of the end high spots needs to be trimmed until it becomes level and flat in relation to the middle. Bowing can create a lot of waste. If you have a badly bowed piece, try to use it in shorter lengths. Once the bow has been removed, the pieces should be fairly stable.

Bow saw

So named because a strip of saw blade is tensioned across the open face of a bow-like frame. The modern version will have a steel frame, with an in-built handle and a tensioning and locking mechanism at one end. Its predecessor would be made from an open wood frame pivoting on a central section. The blade is fitted between the bottom end of the two legs and the tension is created by twisting a cord across the other end of the legs and fixing it off. Bow saws tend to have big saw teeth blades and are used for quick, not necessarily accurate, cutting.

Box beam

A box beam is slightly different to a boxed beam. The first is a deliberately made beam that is a box section only; the second is a beam that has a box around it. A box beam may be constructed to replicate some existing beams or simply be fitted, singularly or in series, to add something to a room or a space. Boxing in a beam will be done because the underlying beam is unsightly, does not fit with the décor or might be a steel RSJ that needs covering. To get the best effect, in both cases, the box structure should be mitred along the long edges.

Brace

A brace in one context is a hand drill and in the second, a support that props something up. Like many workshops, mine has a drill brace hanging on the wall ready for use. Today it has been effectively replaced with any number of powered drills and, because of cordless technology, has all but been made redundant. However, there are times when a boring job turns up that needs a gentle, controlled approach. The second brace will be most easily recognised as part of a ledge and brace door configuration. The brace, or braces, in this example support the rails and should always be angled from the hinge side upwards.



Diagram showing wood warping



Stanley 105 hand drill



Stanley 5044 bit brace



Brad

This is a small, cut nail produced from a thin, flat sheet of steel. Brads are slightly wedge shaped and have been traditionally used as a glass fixing nail. With your pane of glass set into its bed of putty, the flat brad slides into place and is then knocked partly, but securely, in using the square edge of a paring or mortise chisel. Larger brads, up to 50–75mm long, were also used as second-fix nails for skirtings, architraves, etc. Once more, technology has moved on and various other fixing techniques are generally used today.

Bradawl

A little while ago we talked about an awl – a tool used to bore small holes – and a bradawl does a similar job. The subtle difference is that its primary use is to create pilot holes rather than cut right through something. I have a couple of these of different diameters for various sized screws. My favourite has a square shank, which seems to make an easier hole. With the advent of the modern so-called turbo screws, with a self-boring, leading point, the need for pilot holes has diminished except, of course, near end-grain.



Marples Irwin 183BM beech-handled bradawl



Brushing trees in Inverliever Forest, 1960

Brushing

Mostly in conifer woods and forests brush is cut, usually by hand, by removing the lower branches from the young trees. This practice is carried out as the first stage in the harvesting process, before any thinning of the plantation takes place. Brush, the result of this pruning, is usually stacked in rows. In fact, where a stand of conifers has been removed you will often see orderly rows of brush left behind. Between these rows the new saplings are planted and the remaining brush creates a natural habitat for many bugs and creatures. Over time it will break down and diminish in size and rigidity.

Brashness

A simple term used to describe a brittle break across the grain in a wood that you were not expecting this to happen with. Usually caused by some defect during growth, there are other similar anomalies, generally called shakes, which occur during the harvesting process.

Breaking down

A sawyer's term used to describe the cuts in a log to 'break' it down from the round into planks and beams. The saws used for this tend to be larger than others in the conversion chain.



Sawing logs into finished lumber with a basic 'portable' sawmill

Bridge joint

A simple joint, similar to a mortise & tenon, where one of the jointing pieces is open. Handy for quick joint making if, for example, you need a frame under or to support sheet material.

Bright

Generally refers to freshly sawn timber that looks 'bright' and clean with no marks or discolouration. A bit of bright stuff. ✕



Bridge joint on a picture frame



A bridge joint explained

NEXT MONTH

In the next issue, Peter looks at more terms from broad-leaved to carcass



DESIGNING BY DESIGN

The best way to connect with customers, says **Anselm Fraser**, principal of **The Chippendale International School of Furniture**, is to inject a little piece of your DNA into your furniture

A first rule of furniture making is that you can't make something until you've designed it. It's why woodworkers, from novices to skilled craftspeople, should, from time to time, lay aside their chisels and practise their design skills.

At the school, we first teach the age-old technique of 3D design. It shows students how to visualise, to understand ratios and proportions, and to express their designs on paper. Of course, there are software packages on the market that can also do an equally good job, and we applaud that because woodworking has always been about adopting new ways of working. For example, until recently, we had a former student in incubation space at the school. He uses a 3D printer to bring his designs

to life, albeit in miniature. It allows him to show customers what their piece of furniture will look like. They can hold it, look at it from all angles and, if need be, tweak the design. In other words, if you're not adept with a pencil, make use of technology because, as it's well known, good designers make better woodworkers.

Connecting with customers

We're now into the final Term Three on our professional course, and it's that nervy time when students are wondering whether their pieces are going to sell at our end-of-course exhibitions. It's always good when that happens because it gives the student a huge confidence boost, showing that their hard work has earned a justifiable reward. But more than that, because

furniture design and making is about finding a little bit of magic, and then communicating that magic to a potential customer. It's also about finding ways to connect with buyers, and to make what you've built stand out. For me, the best way to connect with customers is to inject a little piece of your DNA into your furniture. If your designs echo a little bit of who you are, you're much more

likely to find a buyer. For example, we have a student this year from Iceland. He's a former trawlerman and wants to create furniture that honours the Icelandic fishing community. He's made an olive ash table, with a wave motif across its top, named it the 'Dolphin' after the fishing vessel he sailed on, and has designed the table's legs to reflect the architecture of the ship's gallows – the arched structure at the rear of the trawler. It's a simple enough design flourish but it makes a connection to a buying market worldwide. It proclaims his passion for the sea, and makes his table commercially attractive.

Another student, Tom Smyth, has taken a very different kind of inspiration for a steam-bent oak garden bench that he's just completed. He was inspired by work he recently carried out when repairing the roof of a listed 400-year-old timber-framed barn in Hampshire. Although the scale of the roofing project was rather different, the principles of fashioning oak into strong and enduring structures are much the same.

Little pieces of magic

Over the years we've had students who have displayed all sorts of imaginations, making everything from the utterly functional to the absurdly wonderful. But the students who go on to do the greatest things are those who discover little pieces of magic within themselves and then find ways to share it, and working damn hard into the bargain. That really does put the unique into bespoke. Just remember: a priceless diamond is just a bit of coal that did rather well under pressure. But what any devotee or student of woodworking has to learn is the Oscar Wilde observation that a cynic is "a man who knows the price of everything and the value of nothing." For a furniture maker, that means selling at a reasonable price, because it's better to earn something rather than nothing. It means charging Ford prices before you can charge Rolls-Royce prices – that'll be the subject of my next article. ✕

FURTHER INFORMATION

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



Oli Juliusson and his 'Dolphin' olive ash table with wave motif across its top



Tom Smyth and his garden bench in steam-bent oak



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Full of light: Helen Robinson's stained glass studio in Bishops Castle

A SLOW-POUR'D MAGIC

Dave Roberts meets Helen Robinson, a stained-glass artist whose alchemy transforms silica and base oxides into liquid gold, and cobalt, and ruby, and turquoise...

“Of what use is it to speak of these things?” asked Christopher Whall in his instructional text, *Stained Glass Work* (1905). “The words fall upon the ear, but the eye is not filled. All stained-glass gathers itself up into this one subject” – colour. “The glory of the heavens is in it,” continued the elder statesman of the Arts and Crafts movement, “and the fullness of the Earth, and we know that the showing forth of it cannot be in words.”

It isn't difficult to accept Christopher's assertion that the luminosity captured and shaped in the slow-pouring magic of glass and paint and stain is a distillation of the ineffable, and not only because of his authority. To anyone with half an ear for the words that reflect life here in the borderlands, the Welsh 'hiraeth' will not be unfamiliar: it's a shorthand that encompasses a sense of longing and belonging that is intuited rather than understood, much as the particular scintillation that is a response to the living, liquid

light in stained glass can be felt but not described. We're not talking about just any coloured or stained glass, of course, but rather those examples that follow, as Christopher Whall would have it, “the rules of good taste and imagination which make such a difference between beautiful and vulgar art” – and for guidance in that, you need to talk to a stained-glass artist like... well, like Helen Robinson, who has recently moved her studio from London's hinterland to Bishops Castle in the Welsh Marches.

And all at once, the lofty and slightly ponderous language of Mr Whall is replaced – as if a radio dial had been quickly spun from 1905 to the present day – with Helen's insights to the craft.



Applying a resist to glass prior to sand-blasting – the safer alternative to acid-etching



Mortar, pestle, paint and stain – the makings of a kind of alchemy



From base oxides to liquid light: the dark, vitreous paint that is laid onto glass in a mott and worked with tools to 'carve' the light



Raw materials and inspiration: the light table shows the reamy waves of colour in the cups that have been cut from a 'bubble' of mouth-blown glass to create a cylinder, or muff, that's then split and softened to form flat sheets

These move from A to B not always by the shortest route, but with a crispness that was ironed in, no doubt, while training at Barts for her first career as a nurse, and always via humorously illustrative waypoints that make the excursions well worth the while. Indeed, if Alan Bennett were ever to write a monologue for – oh, let's see – someone encountering for the first time David Hockney's curious coloured window in Westminster Abbey, say, then Helen's delivery would probably have no less impact than a mischievously aimed pebble from a catapult. Here is the sort of maker who makes beach-combing the Marches in search of creative inspiration such a rewarding pastime.

'THE PEACOCK'

Helen describes this exhibition panel as one of her most complex pieces, using the best materials – richly textured mouth-blown glass which, says Helen, "has character, and thickness, and bits of ash and dead mouse that catch the light" – and the most involved techniques. The iridescence of the neck, for example, begins with a turquoise-flashed 'white' glass – clear glass that has been dipped into a second colour while being blown to give the clear body a veneer of turquoise. Partially etching this veneer with acid reduces its depth of colour so that when the area is treated with silver stain, which reacts with the glass during firing to create anything from a pale yellow to a rich gold, the fall of light through stain and flash creates the green. Similarly, the shading of the wings is the result of that happy irregularity of a brown-on-clear blown glass: because the depth of the flash wasn't uniform, the acid



etching has created a gradient that brings extra dimension to the feathers whose texture – like the impression of pillowed plumage on the breast – comes from applying a wash of dark



paint made of powdered glass. This 'matt' can be worked while wet using brushes or tools – cardboard, bubble wrap, polystyrene, almost anything to create the desired texture – or allowed to dry, and then etched and abraded. "This is what I call 'carving with light,'" says Helen, "because when you put paint on coloured glass, you hold the light; you concentrate it in the glass [then] cut it away with whatever means." The paint's vitreous nature means that, once fired, its patterns become permanent.

The comb, meanwhile, combines these techniques with plating: by laying an etched and stained piece of turquoise-on-clear onto a piece of ruby-on-clear that has itself been etched with a corresponding pattern, the passage of light through the filigree-like layers (which are just discernible in the photo opposite) makes for a complex combination of detail and colour

'GOING FOR GOLD'

As with 'The Peacock', this exhibition piece illustrates beautifully not only the way in which the irregular depth of coloured flashing creates a variation in hue across a piece of mouth-blown glass – in this case from pale to toffee-coloured – but also how those variations can be used to model light and shade.

Again, you can see the use of sgraffito, where a matt of paint has been applied to the glass and then cut away to create further detail, such as the Greek Key pattern, and the lettering.

Far from simply stitching together the elements of the panel, the thick lead comes serve to further define the figure, and also, through the contrast of their blackness, intensify the colours of the glass, making them "glow and hum," as Helen says. "The graphic quality of lead means that you can draw with it." Amplifying its effect, by extending the comes' with borders of paint, brings out colours – the darker reds, for example – that might otherwise be lost among brighter neighbours.

Fitting the figure to the square frame of the tile brings a discipline to the craftsmanship involved, that is perhaps reminiscent of furniture making. The 'frame' of a desk, for instance, imposes a certain discipline – it must be the right height, fit the space it's to occupy, etc. – but within that form, the maker is free to exercise imagination



'COCKCROW'

"I spent a day with Alan Younger in his shed in the garden," Helen told me. Alan, who died in 2004, was described by one obituary as, "one of the most important stained glass artists of the post-war era." His work is pinned to Helen's board along with her other heroes of the art, "and I use what I learned [from Alan] every day. My paint style is informed by the way he worked"

In 'Cockcrow', you can see the application of some of his techniques, such as that distinctive flea-bitten quality to the paint. This is achieved by using an atomiser to splatter a solvent over the paint and loosen the hold of the gum arabic that binds its pigment, the powdered glass; once dry, brushing the glass will dislodge paint wherever the solvent has loosened the bond between pigment and gum arabic. "You get lovely speckled effects, like medieval glass that's been pitted and eroded; and if you get a nice bit of glass and put the paint on like that..." she says with a hungry enthusiasm that makes the result sound more like a slice of deeply veined cheese than colourfully crusted glass.

"He also taught me [to] put silver stain on a toothbrush and flick it over the painted surface. It picks up the paint in places, but when fired and washed it gives pinpricks of gold with a tidemark of gunge around the edge. Brilliant!"



A journeyman in colour

Here, too, is someone who, as the daughter of an architect, grew up picnicking in churchyards, and surrounded by the language of stained glass; who, when family brought the opportunity for a career change, had an aunt – “everyone needs an Aunt Margaret” – to steer her unsatisfied artistic side towards a summer school in stained glass at Manchester University. And that began a process that started in a small shed, and progressed – by way of other short courses, evening classes – through increasingly large sheds, culminating in the workshop of today, which is equipped for all stages of stained-glass work, from sketching, cutting, and painting to firing and assembly, and whose shelves of glass are catalogued like a library of light: lemon amber, purple flashes/streaky, cobalt blues, pink brown (rich), ruby on yellow, mauve & russet, opals, red...



Tools of the trade

TESTING THE WATER

By rights, the craft of the stained-glass artist should hold an interest for the woodworker, and not only because it combines practical skills and creativity in a medium that has both the inspiration of tradition and scope for innovation. It's also a complementary craft in whose practice there are reflections of woodworking: glass has variety and character in the way that timber or veneers have colour and figure, for instance; there are aspects of marquetry in the design of leaded glass; and there is the discipline of furniture making in architectural glass, which must be functional as well as decorative.

You can find out more about Helen's practice, Oriel Glass Studio, and a gallery of her work at www.orielglassstudio.co.uk. For details of her leaded light and stained glass courses, contact Helen on 01588 638 940, or email her at oriel.glass@btinternet.com.

For more information about stained glass, visit the British Society of Master Glass Painters – www.bsmgp.org.uk.

Along the way there was also a year spent at Central St Martins College of Art & Design. “I wanted to go to college to learn those disciplined things – life drawing, calligraphy – that would've been taught at the Central School of Art,” which was St Martin's original incarnation. “If you can master the disciplined skills,” she believes, “then you can spread your wings and be original.” However, the Arts and Crafts spirit had left the college it once inhabited, and instead Helen gathered experience by being a kind of journeyman in stained glass, tackling restoration work for Steve Tomkinson, for example: “He used to buy glass from Britain and the continent, and when he rang, I'd just done my first glass-painting course. He brought broken pieces for me to copy to make replacement sections, and I learned a lot by looking closely to see how they'd been done.” She also borrowed inspiration from the workshop



Line, light, shade, colour and hue can all be drawn in stained glass



Library of light: though daylight is available in limitless quantity and infinite variety, the best glass with which to capture it – mouth-blown glass made before many English furnaces closed and went cold – is becoming more scarce by the day

of Alan Younger (see 'Cockcrow'), and from her heroes of the craft, and passed on some of what she'd gleaned in the short courses she ran at West Dean, and which she now plans to hold at her studio in Bishops Castle.

In spite of what she's learned, Helen freely admits that she still has no idea why so many people profess to 'love' stained glass. And in an age, too, when it is seen in its traditional setting, churches and cathedrals, by ever smaller congregations; when the manufacture of English mouth-blown glass is all but dead; and when the craft – whose last golden age was during the Arts and Crafts movement, when it was celebrated as one of a number of inter-related crafts – seems as vulnerable now to the trampling of its techniques and subtleties as it was during the iconoclasm of the Reformation.

But to paraphrase Mr Whall, of what use is it to ask these things? Perhaps glass and paint and stain still work their slow-pouring magic on the viewer so that the questions fall upon the ear, but the eye is filled; the glory of the heavens and fullness of the Earth is in it. ✕



The almost organic colour variation of mouth-blown glass is clearly visible in the walls of this muff, a cylinder of 'pot metal' glass, which is to say glass coloured throughout by the addition of metal oxides to the melting pot

ADDING THE FINISHING TOUCH TO PERIOD PROPERTIES

Whether converting a property to look older with a period interior, or restoring a historic building to its former glory, good door decoration is crucial for adding the finishing touches. From distinctive Edwardian doors to elegant Victorian townhouse doors or simple oak cottage doors, the small additions will make all the difference in complementing the chosen design theme.

The Olde Forge range, exclusively available from IronmongeryDirect, provides a wide range of hand-crafted products, which can be used with both interior and exterior doors. The products are forged from solid brass and finished in a soft antique bronze, adding an authentic and exquisite touch to any period property.

Olde Forge Butt Hinge

These hinges are essential for anyone looking to fit a wooden door in a period-style home. Manufactured using solid brass, they are highly durable and able to easily sustain weight from doors made from heavy materials such as solid oak.

Often used by cabinetmakers to enhance the beauty of the overall design, the simple construction ensures that it will function properly and smoothly for years.



Tudor Plain Hinge Front

Used in conjunction with traditional butt hinges, these hand forged hinge fronts are ideal to use when space restrictions do not allow for a conventional tee hinge. Used purely for decoration, these hinge fronts will create a traditional and rustic look on any interior or exterior door.

Ring Door Knocker

The front door of any home is arguably the most important, and for period properties they deserve careful consideration to make the ultimate first impression.

This brass Tudor style ring knocker is mounted on a fleur-de-lis backplate and supplied with fixing bolts and an ornate striker. Door knockers can be made from several materials; however, zinc and aluminium are known to wear down faster with frequent use and handling, while brass is a hard metal that holds up well in all environments and lasts for years.



Tudor Level Latch Set

For a special feature, a handle such as the Olde Forge Tudor Lever Latch Set can be added. The sprung handle has a decorative curved lever and a simple rectangular backplate, making the design ideal for most doors.

Matching interior latch and bathroom sets are also available to purchase from IronmongeryDirect.



Rustic Curly Tail Casement Stay

When it comes to replacing heritage windows in a period property, the Rustic Curly Tail Casement Stay will enhance the character of the window while also providing a smooth and efficient operation. This product can be used with timber frames and is commonly used in cottages or listed buildings. The classic curly tail pattern makes this range perfect for any home looking for an authentic period style.



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BOXING CLEVER

Denis Whittaker shares the steps he takes when making a basic box complete with inlay, feet and hardware

In more recent times, boxes have become a big part of my life and these continue to both fascinate and delight. For those new to the craft, this article will document how I go about making a basic box.

Cutting components

The item featured here measures 220 x 150 x 90mm and has just six basic parts: top, bottom, front, back and two sides. The bottom is 3mm birch ply and the lid panel is 4.5mm pippy oak. Recycled mahogany finished at 12.5mm thick is used for the front, back and sides.

For a similar size box, you need to select a piece of timber measuring approximately 800 x 100 x 15mm, which is sufficient for the front and side panels. Saw and plane to finish at 800 x 90 x 12.5mm. Next, while still in one length, cut an 8mm deep x 5mm wide rebate along the

top inside edge; this will house the lid panel, allowing 0.5mm to be trimmed after assembly. Approximately 5mm in, along the bottom inside edge, cut a 3mm wide groove, which is deep enough for the box bottom. Adjacent narrow grooves (approximately 2-3mm wide) also need to be cut to run along each side of the board, leaving a 3mm or 4mm core where the lid will eventually be parted off. Start these at least 20mm in from the top edge of the board to allow sufficient depth for fitting the hinges and catch. A table-mounted router is ideal for these operations but a hand-held router or circular saw are workable options. Whichever method is used, cutting the grooves and rebates at this stage ensures accuracy, reduces the risk of mistakes, and is much easier and safer than first cutting the four sides to size and machining each small panel individually.



After sanding smooth, the inside of the lid section can be stained and polished. This may sound premature but potential difficulties when polishing into corners are negated and any slight squeeze out of glue during assembly is easily cleaned off later. The board can now be cross-cut into four alternating 220mm and 141mm panels and checked in pairs for accuracy.

If using figured timber, mark the panels in order of fitting to achieve a flowing line around the box. Place the marks in hidden areas such as rebates and panel ends or use masking tape, which can be easily removed after assembly.

Sides & bottom panel

Joining the box sides is simply a matter of cutting





13mm wide rebates to a depth of 8mm on the inside ends of the front and back panels. These will house the side panels and, once again, the 0.5mm overlap will be trimmed after assembly, leaving a good, clean and suitably strong joint. The 3mm ply bottom panel can now be cut to size and checked for fit.

For the reasons given earlier, it makes sense to polish the underside of the base before assembly. When dry, use the tip of a knife blade to scrape off any polish where the panel fits into the box sides. This allows the glue to grip and, once again, any problems associated with polishing into corners are overcome.

The sides and bottom panel can now be glued up. Practice the sequence dry using at least four

and ideally eight clamps. Carefully position each one and tighten progressively and in sequence to ensure that all joints fit snugly and that the box is kept square. If strap clamps are used, packing pieces, slightly smaller than the end panels, are necessary to allow for the marginally extending front and back panels. Check for squareness both vertically, horizontally and diagonally across the top of the box during clamping and again after the clamps are removed. Any tiny discrepancies must be dealt with if the box lid is to fit properly once the hinges are fitted.

The lid is usually the first part of the box to be noticed, with veneers and inlays often providing heightened interest. More will be said about this later, but on the box under



1 Rebate (L) is for lid panel and groove (R) for bottom. The two adjacent grooves are where the lid will be parted off after assembly



2 Set-up for routing end rebates on front and back panels. Note use of push-stick behind workpiece to avoid break-out at end of cut



3 Panels and box bottom carefully checked for accuracy and labelled in order of fitting. Masking tape prevents stain from contaminating areas to be lined



4 A simple clamp with sliding stops makes easy work of polishing thin panels

construction, the pippy oak panel speaks for itself. Whatever is chosen, polish the panel on the inside, scrape off the polish around the perimeter and glue in place. Use very little glue in order to minimise squeeze-out inside the box and immediately wipe off any excess on the outside. After about 30 minutes the clamps can be removed and it's back to the router to trim off the excess from the front and back panels and around the box top. A bearing-guided trimming cutter does a perfect job and this leads on to the next task, which is to add a little sophistication to the box lid.

There will inevitably be a glue line on the lid of the box where the panel has been fitted. A more attractive appearance results from inlaying a line of banding to cover the join. This is achieved by routing a shallow trench around the top edge of the box, wide enough to slightly overlap the join between the lid panel and box sides. Ensure to

choose a banding with black edges and glue in place. When dry, use a cabinet scraper to bring the banding flush with the top surface. A little tip when cutting banding mitres is to view the cut in the reflection on the back of your chisel. This will appear as a 90° angle, which is much easier to judge than 45°.

Lid section

Attention can now be turned to parting off the lid section, but first mark each part identifying front and back. Re-fit the cutter used in the initial stages of production. Locate the cutter into the groove and set the fence up to the box in order to duplicate the initial machining set-up.

Continue the cuts, increasing the depth a little at a time. Cease cutting immediately a breakthrough is detected and complete the separation using a scalpel or fine-tooth saw. There will be a little feathering on both the lid and lower part of the box after separation. This is easily cleaned up by sanding, using abrasive paper glued onto a flat board thereby guaranteeing square, flat surfaces on both lid and box. The box is now ready for its hardware.

Fitting hinges can be a nightmare but more recent enthusiasm for box-making has resulted in some great developments in both design and fitting. For this project, I have chosen the more challenging to fit, but less expensive, quadrant hinges and an easy to fit small button catch.

Hinges

Fitting methods are similar for all quadrant hinges. Recesses are made to house the arms of the hinge. Deeper mortises are then cut to

allow the quadrant piece to slide and swing as the hinge opens and closes. The best way to ensure accuracy when fitting this type of hinge is to use a router table. Set your router with a down-cut spiral or straight cutter with a diameter equal to the width of the hinge. Centre the cutter on the side wall of your box. Set a stop to the right of the cutter, equal to the length of the hinge – measured from the centre of the hinge knuckle – less the diameter of the cutter. Make a spacer to the correct length to ensure accuracy.

Set the depth of cut to half the thickness of the hinge knuckle and run a test cut on a piece of scrap. Once happy, the upper left and lower right recesses can be cut. Using the same spacer, set the stop to the left of the cutter and repeat the process to form the other two mortises. A particularly firm grip is needed for the first two cuts as the rotation of the cutter will attempt to push the parts away from the cutter and fence. Care must also be taken when sliding the parts away from the stops after each cut is completed.

If specific details are not given in the fitting instructions, holding the hinge against the side of the box will indicate the length and depth of the deeper mortises required to house the sliding quadrants. First drill out the bulk of the waste and then tidy up using suitable chisels. Pilot holes for the screws can now be marked, drilled and the hinges fitted. Check once again that everything is square and that the lid moves smoothly.

Before removing the hinges to prepare the box for its button catch, mark a centreline on the front of both lid and box. Precise drilling following the supplier's instructions is required to install the catch, which is a friction fit and not fixed in



5 A pair of sash cramps provides a stable platform during the clamping. Soft-faced cramps provide good pressure without marking the timber



6 An MDF pressure plate, slightly smaller than the lid panel, spreads the clamping force. Take care to remove any glue squeeze-out immediately



7 A bearing-guided trimming cutter makes short work of trimming round the box



8 The box top prepared for inlay banding

place until later. Note: if opting for any type of commercial catch, it is wise to study the fitting instructions before starting your box. Some catches have specific requirements, including, as in this case, a minimum wall thickness for the box front.

Box feet & finishing

Box feet are almost a subject in themselves; they certainly improve presentation and many commercial varieties are available. Making them yourself is an obvious option but, in this case, I have used small brass feet to match the rest of the hardware. Prepare the necessary fixing holes, but do not fit the feet until all other processes are completed. With all hardware removed, the box is ready for final finishing.

Projects are so often marred by poor finishing and patience is certainly required for good results. Start by attending to any flaws or minor damage and then use progressively finer abrasives to banish all traces of roughness and scratches on all outside surfaces. Take particular care on the top of the box lid but keep in mind that if commercially available inlay banding has been used around the lid panel, this is usually only 0.7mm thick. Rounding over the sharp edges improves the overall appearance but avoid going too far where the hinges fit and where the lid and lower parts meet. Next, give the box a going over with a vacuum cleaner to lift any fine dust. This is particularly important where mixed colours are present, and if you can use an extractor during the sanding process, so much the better. If the box is to be stained, as this one was, care must be taken to avoid contaminating any surfaces which are to remain untreated. This often includes inlay banding and, in this case, the lid panel as well. The answer is to use a fine paintbrush (the artist flat type is best) to apply a coat of sanding sealer or French polish to these parts, thus forming a barrier to the stain. Use a similar clean brush to carefully 'paint' on the stain around the perimeter of the lid panel.

While the stain dries, time is well spent on making a very simple polishing aid. This consists of a small block of wood on which a piece of MDF larger than the box is mounted. A second piece of MDF, very slightly smaller than the inside of the box, is screwed on top. Strips of wood, slightly narrower than the box sides and less thick than the MDF, are then glued along each side of the top



9 Clean chisels make judging mitres much easier by viewing the cut at a 90° angle in the reflection on the chisel



10 Using the original router cutter to complete the parting off of the box lid



11 Abrasive glued to a flat board is used to remove feathering left by parting off the lid

piece of MDF to form a step, on which the box sits during polishing. The block of wood is held in the vice and the box lid, already finished on the inside, and fully supported with full access for polishing. Similarly, with the box bottom already treated, the lower part of the box sits on the platform presenting all four sides of the box for final finishing.

When the stain is dry, apply two coats of sanding sealer over the whole box, followed by several coats of pale French polish, rubbed down between each coat. When satisfied, set the box aside for two or three days before gently applying a good quality wax furniture polish using the finest grade steel wool, followed by buffing with a clean, soft cloth. This leaves a very satisfying sheen, which is a joy to both hand and eye.

Box lining

Carefully selected and well applied quality lining gives the box a measure of luxury and sophistication. Silk moire and suede pigskin are

particularly effective. To prepare and apply the lining you will need a cutting mat, a straightedge backed with abrasive, a ruler, scalpel, scissors, pencil, double-sided sticky tape and 'Copydex' or other fabric adhesive. Also required is a quantity of thin white card (160GSM is ideal) and of course your chosen lining material.

For the best results, prepare A4 sheets of card with double-sided sticky tape affixed to fully cover both sides. Carefully measure the inside of the box and using a scalpel and straightedge, cut a piece of card very slightly smaller than the bottom panel of the box, allowing only for the thickness of the lining material, which will be folded over the card edges. Peel off the protective covering on the tape on one side of the card and stick down onto the reverse side of the lining material. Cut the fabric around the card, leaving a 5-10mm border, which will be folded over the card edges. The thicker the lining, the wider the border. Trim the corners diagonally so that they meet when folded over to the back of the card.



12 A range of hinges, locks and catches available from several suppliers. The box featured uses gold finished quadrant hinges (top right) and a small button catch (bottom right).



13 Router table set up for cutting the upper left and lower right hinge mortises. Use an accurately made hardwood spacer to set the length of cut and a height gauge to set the depth. The spacer and stop will be set to the left of the cutter for the remaining two cuts



14 Take note of the swing of the quadrant during opening and closing, as well as its depth

TECHNICAL Basic box-making



15 Hinge housings cut and pilot holes for screws drilled. The three holes required for fitting the button catch have also been drilled

Next, remove the protective covering from the tape on the other side of the card, fold the edges of the fabric over and stick down. Apply a little fabric adhesive to the folded edges and fix firmly



16 When the lid is slid forward slightly, it will drop onto the steps ready for polishing

in place in the box. A similar procedure follows in sequence for the back, the two sides and finally the front.

With the lining completed, the box hardware can be fixed in place. Start with the button catch where a little pressure is needed to squeeze the friction fitting parts in place. Where prudent to do so, a very small dab of epoxy resin adhesive will provide extra confidence, but keep this well away from any moving or mating parts. Next come the hinges: fix to the lid first and line up the slots in the screws for a neat finish. Finally, the feet are added and, once again, a tiny drop of adhesive is used. And there you have it – a project to be proud of. It always strikes me as odd that we secrete things away in boxes, but make the box itself as attractive as we can, thus encouraging interest and curiosity in both the box and its contents! ✕



17 A variety of lining materials including pigskin, silk, moire and sticky-backed felt in a variety of colours



18 The bottom panel lining ready for the edges to be folded over and applied to the box



19 Items needed to prepare the box lining

SUPPLIERS

Suede pigskin
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20 The completed project

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LETTERS

BUDDING FURNITURE DESIGNER IN THE MAKING

★ LETTER OF THE MONTH



Hi Tegan,

My seven-year-old grandson, Jasper, has just designed this den-table! He sourced the materials from his Dad's shed, then designed the table on paper to use the wood available and painted the frame and table extensions. He then supervised his Dad in the construction to ensure it was done as he wanted. I love the imaginative 'twisted' design, the contrast between the natural wood table top and the painted frame, the choice of colours and the use of triangulation for structural integrity. Do we have a budding furniture designer in the making?

Regards, **Charlie Sanders**

Hi Charlie, thanks so much for writing in and sharing the photo of Jasper's project – what a great idea! Well, you know what they say about the youth of today being the designers of the future, and if Jasper's table is anything to go by then I'm sure we're in safe hands! Many thanks again! Best wishes, Tegan

A BUSY RETIREMENT

Hi Tegan,

I contacted you a while back last year when I first started woodworking. I retired in March 2018 and my plan was to take up woodworking as a new hobby. Prior to that the only woodworking I had done was at school in the '70s! It's been a very enjoyable learning curve – I started with an 8 x 10ft shed but quickly realised that wasn't big enough, so I now have two that size! I use one for marking out and assembly and some of my smaller bench machines, and the other contains my planer/thicknesser, table saw, pillar drill and router table.

I enjoy making Adirondack chairs and I have just completed my fifth one. All of my children and grandchildren now have one and they want more! I have attached a couple of photos of some of my projects.



A handy wine and glass rack – what a great idea!

Thanks for such an enjoyable magazine; I always look forward to receiving my copy and it has inspired me to try new projects several times.

Regards, **Matt Russell**

Hi Matt, it's great to hear from you and I'm always so thrilled when



Matt and one of his many handmade Adirondack chairs

A mini Adirondack Matt made for his granddaughter

readers get back in touch to update us on their stories. Congratulations on your retirement although it sounds like you've been kept very busy with your woodworking! Getting a second shed definitely sounds like a great idea, especially if it allows you to expand your skills and the projects you can complete in it. I love your chairs and the mini version you made for your granddaughter is delightful!

I'm so pleased to hear you're continuing to enjoy the magazine; we'll certainly do our best to make sure future content is kept as varied and exciting as possible! Best wishes, Tegan

PERSPEX 'MICRO FENCE'

Hi Tegan,

I don't know about you, but I thought the price of £250 for the Micro Fence – Edge Guide (see *WW* Feb, 2019) was, to say the least, a bit extravagant, especially, when in engineering terms, there is so little there to demand such a high price. Being a DIY person whenever possible, I downloaded the US Patent for this device, which contains several very good drawings. So I am in the process of making one of these tools – parts will cost about £5, with many of the rods salvaged from old scanners and printers (carriage rods in these are extremely well made), and I'm looking at about a day's worth of labour at the lathe and milling machine.

As I mentioned in my email of 12 February regarding the construction of a copy of the Micro Fence, I have now made a Perspex version (see attached photo). My metal copy weighed 850g (which must be similar to the commercial Micro Fence, although I cannot find any information on this) and my Perspex offering weighs 405g. As the Micro Fence is just a guide it requires little real strength, just rigidity, and the Perspex one proved to be an easily manageable attachment to my Vonhaus hand-held router, whereas I struggled to keep the router flat against the top wood surface with nearly a kg of my 'Micro Fence' hanging off it. Of course, if the Micro Fence is somehow supported beneath, or is routing areas inside the perimeter

of a piece of wood, then the weight advantage disappears, but in many applications (e.g. routing the edge of a table-top), such support is difficult to achieve.

Best regards, **Colin Lloyd**

Hi Colin, yes, I think we can all agree that the tool commanded quite a high price tag for what was essentially quite a simple item. Although it was precision engineered and easy to use, the £250 asked for it did mean it was out of reach for many woodworkers. I think your version of the tool is ingenious and it goes to show that with a little initiative and DIY skills, a similar one can be fairly easily made. Thanks for sharing the completed item with us, and if any readers would like further details about the design, please do get in touch and I will forward your queries on to Colin. Best wishes, Tegan



Colin's homemade Perspex version of the Micro Fence – Edge Guide, which was recently tested by Phil Davy in the February 2019 Issue

READERS' HINTS & TIPS

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

HOMEMADE DUST & SHAVINGS SOLUTION

Few would disagree that dust in a workshop – especially when using machinery and power tools – is one of woodworking's greatest problems. Wood shavings are a clear runner-up. Commercially available extraction systems are expensive and often not ideal for a home setup. An effective dust and shavings solution can be easily, quickly, and, above all, economically made using, for the most part, easily available materials.

A cyclonic dust and shavings collector can be constructed from used paint buckets or dustbins. My system (photo 1) consists of a cyclone chamber placed over a collector. Both are made from scrap plastic buckets. The suction is provided by a workshop grade vacuum cleaner. The vast majority of the debris is deposited in the cyclone's collector and the vacuum cleaner acts like a filter and fine dust collector; this gives me well over a year between bag changes and saves a fortune on vacuum cleaner bags. I also send general workshop vacuuming through this collector. Emptying (into a black bin bag) is a doddle. The size of the collector can be matched to space available and to the machinery or tools connected. Routing and planing produces bulky shavings whereas sawing and sanding produces a compact layer of wood particles and so requires a much smaller collector.

Extraction hoses and the various joints are also very expensive. I use PVC hoses from hose suppliers ensuring that they connect into ordinary domestic waste pipe joiners, elbows and Tees, all of which can be bought at the local DIY supermarket. I choose the 1½in solvent weld system (photo 2) whose fittings are tight enough not to drop out in use, can easily be rearranged and, if need be, can be permanently joined. The system is effective and I have never had any blockages.

To remove airborne dust, a simple air filtration box can be made out of plywood or MDF (photo 3). Buy the appropriate filters first and construct the box to measure, placing a simple (or not so simple) bathroom extractor in the side or at the back. The system, which is left running whenever I am using any machinery, is very effective and easy to maintain. When there is a discernible drop in the emitted air, the filter (or filters) need either a good shake (outside, of course) or replacement.

Maciej Pomian-Szednicki



1 Cyclonic dust and shavings collector. The inlet hose is connected to the machine's dust extraction outlet as required



2 Dust extraction from the WoodRat using PVC waste pipe connectors. A female connector on each of Maciej's machines enables a rapid changeover of the extraction hose



3 The air-filtration box consists of a commercially available set of filters held securely with softwood fillets in a plywood case. The box is installed close to ceiling level in order to save on space

CAULKING IRONS

Hello Tegan,

In the April edition of *The Woodworker* the end-grain piece is titled 'Seduction on an industrial scale' and is about the tools used to caulk wooden boats. In the article the tools are described as caulking chisels. In my view this is wrong. In the UK at least they are known as caulking irons. Chisels are made for cutting and that is the last thing you want to do when caulking a boat. The roving material should be in a continuous length if possible and you do not want to damage the edges of the planks, hence the irons are blunt and some have grooves. Perhaps it is time for an article of wooden boatbuilding? Also, are caulking irons going to feature in 'woodworker's encyclopaedia' and if so, what will they be called? Keep up

the good work with the magazine; it is an interesting read. Regards, **John Murrell**

Hi John, thanks for your email. I have passed this on to Edward Hopkins, who I'm sure would very much like to hear your views. Yes, I would love to have an article on wooden boatbuilding – it's just finding an author! We have had a few in the past, but hopefully there may be a new person who steps forward. I have also let Peter Bishop know and I'm sure we can get this term into the next instalment of 'woodworker's encyclopaedia' – look out for it in part 7 (Sept 2019 issue). Thank you for supporting the magazine. Best wishes, **Tegan**



Caulking irons or caulking chisels?

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 Kin 30-piece Router Cutter Set, worth over £100. Simply email tegan.foley@mytimemedia.com for a chance to get your hands on this fantastic prize – good luck!



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CHICKEN & EGG

Andrew Hall takes inspiration from an old German woodcarving video to create a lidded bowl with finial, which houses laid eggs

To follow on from last month's article where I made a whole dinner service for the table, here I'll show you how to turn a Weardale egg bowl. We've just introduced some chickens to the family so therefore needed a bowl to keep the eggs in.

At the same time as requiring a bowl for eggs, a YouTube video was doing the rounds and it looked at German woodcarving in 1926 – https://youtu.be/-z_Ph6nZfGE. It showed a craftsman making a bread bowl, and this proved to be the inspiration for this month's project. ✂



1 The bowl was made from a beautiful piece of cherry, which was harvested in Northumberland around eight years ago. The moisture content was down to 8.6%, meaning it should be very stable. It was air-dried for a number of years and then brought into my south-facing timber shed. This is probably the lowest M.C I have managed to achieve through natural drying



2 I started with a blank measuring 240mm in diameter x 100mm thick and proceeded to cut it into an octagon on the bandsaw. Using a Forstner bit, I then drilled a 50mm hole the depth of the cutter to hold it in the chuck



3 Next, I mounted the blank in the chuck and trued up the side using a 12.5mm bowl gouge. I use a gouge with a long swept-back grind, approximately 25mm long. I achieve this grind by protruding the tool out of the jig tool holder 75mm instead of the standard 50mm; this allows for a longer wing and thinner cheeks, which helps to prevent the dreaded turner's knock



4 I deliver the Certificate in Woodturning training for the AWGB and Worshipful Company of Turners and one of this year's students, Helen Bailey, introduced me to her method of associating the position of the tool in relation to a clock face. When demonstrating, I have always suggested holding the tool in either the 10 or 2 o'clock position and this is the most used for all general cutting processes. We both had a mutual friend, Walter Vassey, a well respected turner from the North East and a great friend of Axminster's North Shields branch. Walter is sadly no longer with us, but he suggested new students have a clock face mounted on the side of their lathe so the tool can be easily positioned at the correct angle





5 Many years ago, I had lessons with Les Thorne and he showed me a very similar method. Les places a small magnet taped to a pencil, which is at 90° to the flute. This shows the tool position on the clock face, which also works very effectively. I then trued up the face of the blank with the bowl gouge and measured the exact optimum jaw size for the jaws on my chuck. For this I used a 95mm set of jaws as I wished to core the blank for a later project



6 I then turned the material to create the spigot or tenon. The tool is at the 10 o'clock position and I'm using the front third of the wing to slice away the material. The tool is at an angle of approximately 15° to the toolrest and I'm using an overhand grip



7 I can now crisp up the tenon using a 10mm beading/parting tool. Mine is ground to an angle of 6° so that the tool will form a dovetail to reflect the jaws of the chuck. To help new students learn how to shape the curve of a bowl, I divide the side and face into four equal sections



8 Using a push cut and underhand grip, I work between the pencil lines to form a pleasing curve on the outside of the bowl. Again, the tool is at the 10 o'clock position and approximately 30° to the toolrest. Using a shear cut allows me to achieve the best possible finish. The tool is at the 9.05 position on the clock using the central part of the swept-back wing to cut a very fine shaving. To create this, I lower the back hand of the tool down to approximately 45°. Lifting the back hand up above 45° would create a scrape rather than a shaving. A shaving will always give a better finish from the tool than a scrape



9 Next, I sanded the outside of the bowl using Rynagrip hook-and-loop-backed abrasive with Simon Hope arbors. I then sanded the outside of the bowl using a Simon Hope inertia sander and the inside with an arbor mounted in a cordless drill using 80, 120, 180 and 240 grits. I only ever go as far as 240 grit on utilitarian pieces. When sanding with the lathe rotating towards me, I hold the pad at the 8 o'clock position. Sanding in reverse with the chuck secured with a stud in the register, I then work in the 2 o'clock position



10 It's then time to secure the bowl in the jaws of the chuck. A technique I learned after attending a course with Phil Irons is to place the chuck on the lathe and let the gravity of the bowl self centre. The bowl will run true rather than placing the bowl in the jaws on the lathe and hoping it runs true. I then surfaced the front 25mm of the bowl



11 I wanted to save a core from this cherry for a later project so I used the twin blade Woodcut Bowlsaver. I set up the saver and tested the depth of the core with the template turning at 800rpm. I then removed a core from the mother bowl



12 Good practice is to sharpen the sander at the end of the process so that every time you pick it up it's sharp. I sharpen mine using Trend lapping fluid and a diamond card. I sharpen upwards to raise the burr on the top of the cutter



13 Next, I created a rebate with the bowl gouge for the lid of the egg bowl. At this point I heard a clicking sound and realised there must be something in the grain, and on closer inspection I found it was a bark inclusion. I stopped the lathe and determined it was safe to continue. Had the bark inclusion been loose, I would have stabilised it with CA adhesive



14 I turned the remainder of the material checking the wall thickness with callipers. I use scissor callipers but figure-of-eight or D callipers will do the job just as well



15 I produced a finishing cut with a short-ground bowl gouge then sanded through the same grits as previously using the Simon Hope arbor mounted in a cordless drill. I always use a soft brush in between grits, which helps to remove any grit and dust left over from the previous abrasive



16 To complete the underside of the bowl and remove the spigot, I used Record button jaws and slightly undercut the bottom of the bowl using the short-ground bowl gouge



17 I was now ready to sand the bottom of the bowl, and it's always important to wear appropriate safety equipment for this. I also have a Record fine dust extractor running plus a Camvac extractor, which helps to get rid of as much dust as possible



20 I parted so far through the top with a parting tool and finished parting the material with a hand saw. The spindle was locked while carrying out the sawing



18 Next, I determined the size of the egg bowl top and trued up a blank as before to the size of the callipers



19 The blank was too thick for the top so I turned a recess in the top 49mm, which was the optimum size of the dovetail jaws



21 I then shaped the outside of the lid and cut a 3mm recess for the egg finial, sanding with an inertia sander to the same finish as the bowl



22 I could then turn and sand the inside of the lid as before



23 With the turning and sanding process complete, I could now start making the egg-shaped finial



24 To do this, I started with a square piece of stock and turned it from square to round using a spindle roughing gouge



25 I turned a spigot using the beading/parting tool and shaped the finial into an egg shape using a 10mm spindle or bowl gouge – this is probably the most used tool in my turning arsenal



26 I hand sanded through the grits from 80 to 240 and then fitted the egg to the top of the lid



27 I used two coats of Chestnut Products food-safe finish on the egg bowl, allowing 24 hours between each coat, which I applied with a sponge applicator



28 Here are a number of different egg bowls I've made: left in tulipwood for bantam eggs; middle in cherry for Serama bantam eggs; and right in cherry for hen's eggs

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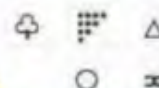
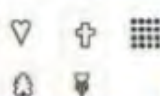
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ME AND MY WORKSHOP

Chris Fisher

This month we're in Lancashire as we learn more about blind woodturner, Chris Fisher

1. What is it – and where is it?

A converted double integral garage at our home.

2. What's the best thing about it?

It's safe and secure, easy to navigate because the layout was done by me, for me. My spirit soars when I'm there and it's pretty cool to be my own boss.

3. And what's the worst?

It can get a bit chilly in the winter. I only have a little fan heater, which does the job but can be expensive to run.

4. How important is it to you?

Hugely! It's the place where I can be creative, film my YouTube videos and build up a living as a blind craftsman. I couldn't imagine life without it and when I teach I know my students are in a safe, well equipped environment.

5. What do you make in it?

It serves as a workshop for woodturning, also DIY projects and even some welding. Like all woodturners, I make a lot of mess! I make everything a sighted woodturner is synonymous with – bowls, goblets, candlesticks, pens, etc. I'll have a go at anything.

6. What's your favourite workshop tip?

Work smarter, not harder. Don't let anyone steer you away from what your heart desires, be true to yourself, and don't worry about what other people say.

7. What's your best piece of kit?

My Axminster trade lathe, built to a very high standard. It's smooth, powerful and reliable. The magnetic remote makes it easy to operate even with no sight, and it's small enough to fit in my car for public demonstrations.



Chris in his workshop, turning a bowl
Photograph courtesy of Nicola Fisher

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

It would have to be my lathe; saving this would mean I could at least carry on turning!

9. What's your biggest workshop mistake?

Severing an artery in my thumb when using a Stanley knife!

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

Too many to choose from, but I love the textured and coloured work I've recently embraced. At a demonstration for Axminster Tools in Cardiff, I made a bowl with a coloured and textured rim, and the crowd thought it was beautiful. You can see more of my work on my website: www.theblindwoodturner.co.uk.

11. And what's the worst?

A little bud vase I made when I started turning. It was all wrong. I can still see it in my mind; if I could hold it now I'd be shocked.

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

Never, ever give up. Being a blind woodturner throws up challenges, some of which are very frustrating. Persevere until the project is finished.

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

A bigger lathe! In an ideal world, probably an Axminster AT508WL. I could do some larger wall hangings and platters. I would like to give some really big turnings a go. ✕

NEXT MONTH

In the next issue, join us as we take a look around the workshop of Canadian artist, craftsman and kayak fisherman, Doug Zech. We'd love to hear about your workshops too, so do feel free to send in a photo of your beloved workspace, and please answer the same questions as shown here – just email tegan.foley@mytimemedia.com

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SMALL THINGS MATTER

Whether practical or decorative, plain or ornamental, knobs and finials lend a project detail, interest and proportion, as **Dave Roberts** shows here

TOOLS YOU'LL NEED

- Tap & die set
- 3 & 6mm parting tools
- 6mm gouge
- Spindle roughing gouge
- 9mm detail gouge & 6mm scraper
- Screw chuck

Over the years, I've turned thousands of knobs and many finials. Some have been for kitchen manufacturers, others for antique restorers; some were turned a couple at a time, others by the dozen. The ones that I enjoy most, though, are those that have a lot of fine detail, especially knobs from the Georgian period and those turned from ebony.

Some of the detail is very fine indeed, and I've found that the only way to turn it is by making my own tools, which are basically scrapers fashioned from masonry nails. They have a short handle – no longer than 150mm – with a pilot hole drilled in one end, into which you tap the nail. Make sure the nail doesn't protrude any more than 65mm; this will keep it short and strong. The end of the nail is then ground to suit the job in hand, whether it's for turning tiny concaves, or fine grooves for inlaid stringing. They only cost a few pence to make so it's worth making a few blanks and putting them aside ready for when you need them. Right then, on with the turning.

First things first

There are three basic ways of fixing knobs to drawers and doors. These days, most people use a screw fitted from the back of the drawer front and into the knob. Another common way is to turn a spigot on the knob, which is then glued into a hole drilled in the drawer or door.

The third and more interesting way, though, is to use a wooden screw. While this is a more time-consuming method, tapping a hole in the blank and cutting a thread on a spigot not only provides the satisfaction of tackling another woodworking challenge, but a way to mount the blank on the lathe, too. So this is the technique that we'll use.



1 Cutting threads in face timber, is easy; just keep the tap square and work slowly



2 Separating the block to cut more thread before coming up against the shoulder





Mahogany knob

The only tools you need to turn this knob are a 6mm gouge and a parting tool, and careful use will produce a good finish. On knobs like this one, the back plate is the same diameter as the rest of the knob. I like to turn the back plate first then move on to the front. If you keep the bevel rubbing, it will produce a good finish.

If you are going to make several knobs, use a pair of Vernier callipers to check and transfer the dimensions. Alternatively, you could make yourself a cardboard template. When it comes to finishing, I generally start with 180 grit abrasive, and work through to 400 grit. Any further finishing I tend to leave to the customer, in case they want to stain or French polish them, for example.

The threaded spigots, meanwhile, are often made from beech, and the quickest way to turn them is to mount the blank onto a screw chuck. Take your time when cutting the thread, and don't force the die. The last task is to round the end over with a 6mm gouge.



1 Starting with the back plate, turn the knob to the finished diameter...



2 ... then round over the face with a 6mm gouge; keep the bevel rubbing to a good finish



4 Once threaded, use the 6mm gouge to round over the end of the spigot

CUTTING THREADS

Tapping a thread into timber is easy enough, especially if it is face-grain. End-grain isn't too bad if you are using hard timbers like boxwood and ebony, but in softer woods the thread has a tendency to break. The blank shown here is mahogany, and the thread's being tapped into face-grain, so it was just a matter of drilling the right size hole for the tap, then holding the block in a vice. The trick is to keep the tap vertical while you're cutting the thread, and to back the tap out after every couple of turns to clear the debris.

Mounting the blank onto the lathe is then very simple. Put a piece of hardwood onto a screw chuck, turn a spigot to size, and then use a die to cut a thread to suit the blank, which can then be run onto the spigot and held securely while you turn it



Screw the timber onto the thread; don't over-tighten it or you'll break the thread



3 The spigot blank is mounted onto a screw chuck and turned to the finished diameter



5 My home-made mini tools are just sharpened up masonry nails that protrude around 65mm



1 Turn the half-ball in the middle with a 3mm parting tool



2 A 6mm scraper gives quick results when turning the concave



3 A home-made tool is used to apply the fine score line

Ebony knob

Ebony is a dirty timber to turn: your hands will get black very quickly, but it has its good points as well. It's a quality timber which finishes superbly and it will also accept very fine detail. And that's what makes this piece a whole different ball game compared to the mahogany knob. It has a lot of detail, and so it's much more challenging. I tend to turn the detail on the front of the knob first, so that if I mess it up I can turn it off and start again, always providing that the ebony is long enough, of course.

Mount the workpiece onto a screw chuck and turn it down to the finished diameter. The first

job is to turn the half-ball on the end, which is done with a sharp 3mm parting tool.

Next, move on to the concave, which is best turned with a 6mm scraper. Raise the toolrest slightly and hold the handle above centre; if you take light cuts, you will get a good finish. For any fine score lines I use my home-made tools, which call for a steady hand and a keen eye. The one that I'm using here to make this decorative line is just ground to a point; the more you push it, the wider and deeper the line.

The rest of the knob can be turned with a 9mm detail gouge and a 6mm scraper. The gouge will do most of the shaping, while the scraper is good

for turning the concave. Used correctly, this tool will leave a good finish, especially on very hard woods. Sometimes you'll have to use a small scraper to turn concaves because there isn't enough room for a gouge.

Ebony demands a good finish, and providing you've used your tools properly, you should achieve a good result with 600 grit and '0000' wire wool. Be careful you don't sand away any fine detail, though. After sanding, put sanding sealer on top, and when dry rub back with '0000' wire wool and top it off with polish. The final job is to turn the spigot, which in this case was 12mm in diameter and 15mm long.



4 Use the 6mm detail gouge to shape the rest of the knob...



5 ... and a freshly sharpened 6mm scraper to turn the concave



6 After sanding, use '0000' wire wool for the final finish



1 Two-handed: turn the fillets until the callipers indicate you've reached the correct depth



2 Use the detail gouge to turn the rest of the finial; keep your work crisp and sharp

Finials

I have turned two finials here: the solid one is made from beech, and would be fine for the top of a clock or a chair; the other has been split turned, and would work well on the front of a clock, say.

When turning solid finials, I generally hold the timber on a screw chuck and support it with the tailstock until I'm ready to finish off the ball on the end. The first job, however, is to turn the workpiece to the maximum diameter and then pencil in all the fillets. When I've got several of these to turn I will have several callipers set to the appropriate sizes.

The parting tool and callipers have to work together, but this is easy enough: simply push the parting tool in and hold the callipers with the other hand. When you've reached the required diameter, the callipers will fall through. You can then use the detail gouge to turn the rest of the finial; keep the bevel rubbing at all times and it'll leave you with a good finish. Remove the tailstock and turn the ball on the end. Before you form the spigot, sand the finial and finish as required, then get to work on the spigot with the parting tool. The second finial is turned in exactly the same way, but from a blank that's made up from two pieces of timber glued together with a piece of paper between them. The idea is that, after being turned, they're split apart to give you two identical pieces. You have to be careful how you hold the timber on the lathe, though. You can use a screw chuck or fit it between centres as shown here. I used a Steb centre at the headstock – these are superb for split turning – and a revolving cup centre in the tailstock. Both of these will



3 Turn the spigot with the parting tool and check it using Vernier callipers

hold the two pieces of timber together while you are turning them, whereas with a standard revolving centre you run the risk of prising the timber apart. When you've finished turning, the halves of the finial are separated by gently easing a Stanley knife into the joint. Go easy with this – one slip and you'll cut your fingers. ✕



4 A Steb centre and revolving cup are ideal for split turning. Turn the balls on the ends last



5 Identical twins: use a Stanley knife to split the finial in half



6 These top and die sets for making wooden threads are available from Craft Supplies Turners Retreat. The removable part of the wooden block allows you to cut more thread on stock such as threaded mounts, where the face of the die comes up against the shoulder of the spigot. When cutting threads, remember to turn the die slowly. Under no circumstances should you start the lathe and try cutting the thread under power

NEXT MONTH

Dave Roberts, the Wiltshire wanderer, makes cubist candlesticks. No, really!

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1 OF 2 TRITON TSPS370 350W OSCILLATING TILTING TABLE SPINDLE SANDERS

Be in with a chance of winning 1 of 2 TSPS370 oscillating tilting table spindle sanders from Triton, which are ideal for the home workshop

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- Large tilting cast aluminium table for permanent flatness, smoothness and strength
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SPECIFICATION

No load speed: 1,425rpm

Oscillations per minute (OPM): 24

Product L × W × H: 381 × 381 × 480mm

Product weight: 14kg

Sleeve quantity: 5

Table size: 381mm

What's in the box: TSPS370 350W oscillating tilting table spindle sander; 6 × table inserts; 5 × drum washers; 4 × drums; 5 × sleeves; 2 × accessory storage units; instruction manual

HOW TO ENTER

To be in with a chance of winning 1 of 2 Triton TSPS370 350W oscillating tilting table spindle sanders, just visit www.getwoodworking.com/competitions and answer this simple question:

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AROUND THE HOUSE WITH PHIL DAVY



I know it's blindingly obvious, but unless we're green woodworkers most of us are so incredibly dependent on electricity, particularly during winter. Experiencing a power cut recently, within less than an hour I was beginning to get frustrated. And this was at the start of the day, with several hours of daylight ahead. No boiler, no internet access, no kettle for the all-important mug of tea. At least I could rely on the woodburner, still with a healthy supply of logs, plus a few candles if the inconvenience dragged on into the evening. With several cordless power tools, I reckoned I'd be OK for a few hours of woodworking, though I had to hope the batteries would last. The annoying thing is you generally don't know how long a cut is likely to go on for. This one was five hours, so I probably got off lightly compared with some victims... Perhaps a useful reminder to rediscover those hand tool skills...

BOOK REVIEW: BIRD HOUSE MAKE AND MAKEOVER

Everyone loves a bird box, and this book describes how to build a variety of styles from one basic design. Several different roof patterns then enable you to alter the appearance completely, with information on how to replicate tin, thatch, grass and shingles. There's even a contemporary, eco-friendly box with solar panel to power a fountain in the adjacent bird bath! Whether you fancy a log cabin, bamboo, brickwork or even a Tudor-effect dwelling, there's bound to be a pattern that appeals here. Adding decorative beams, shutters, doors and windows increases the overall look further. Designs have an American feel, not surprisingly as the author is now based in Florida. He uses materials readily available (dowel, craft sticks, place mats, plywood and so on), so minimal equipment is needed.

Entrance hole size depends on the species, and there's a guide included for common European and north American birds. Handy tips on photographing bird life and installing a Wi-Fi camera in the box are provided, too.

As you'd expect, few woodworking skills are required, with machinery unnecessary. A nail gun is suggested, though it's a bit of a luxury item. Plywood is used throughout for the construction, with just one thickness making life simpler. Material lists are provided for each house, plus cutting lists where necessary.

Step-by-step photography is clear, with the occasional illustration. Line drawings of bird box styles encourage you to photocopy relevant pages and experiment with colours before painting. A final chapter concentrates on mounting your completed box, the favoured method using galvanised steel pipe, which gives an almost industrial feel.

Conclusion

Certain designs may be more attractive than others, but if you know someone just getting started in woodwork, this hands-on guide could be an encouragement. No doubt our feathered friends would appreciate the thought.

SPECIFICATION

Alan Goodsell
published by GMC Books

Price: £14.99

Web: www.gmcbooks.com

Rating: 4 out of 5



DVD REVIEW: GANDOLFI – FAMILY BUSINESS

More social history documentary than your typical woodworking DVD, *Gandolfi – Family Business* is both entertaining and enlightening, if at times slightly sad. It tells of the demise of what was a famous camera-making business in Peckham, London. Established back in 1885 and later moving premises to a small garage workshop, the operation finally closed its doors in 1982, when the business was sold.

This film captures day-to-day life in a specialised part of the cabinetmaking trade during the latter half of the 20th century. Gloomy workshops, glue pots, long hours and with little health and safety concerns, it tells how cockneys Fred and Arthur Gandolfi continued building their wonderful large format cameras until their retirement. Much of the interview footage takes place on Bournemouth's seafront, the brothers' favourite holiday haunt – strictly out of season, you understand.

It's 20 minutes before you see any woodworking action, consisting mostly of cutting panels to size on an unguarded table saw and methodical French polishing strokes. There's no sign of other machinery, though I suspect there would have been a thicknesser and bandsaw somewhere. Probably no routers, though.

Cameras were made from Honduras mahogany, with contrasting brass fittings. There's a lovely sequence where Fred visits the William Mallinson timber yard, somewhere in the East End and probably gone now. Selecting 12in wide boards, you realise this timber purchase could well have been the last the brothers made, as they only built around 50 cameras a year. A barge laden with mahogany arriving at the yard and unloaded by crane is another reminder of what was once a thriving industry in the capital.

Conclusion

A fascinating glimpse, then, into a way of life that's virtually disappeared.

And you get the impression the Gandolfi brothers would be wondering what all the fuss was about...

Use the code **WWGFB** when buying via the Silverprint website and you can get the DVD for £12.95 inc postage.

SPECIFICATION

Ken & David Griffiths

Price: £15.95 (£12.95 with offer code)

Web: www.gandolfi-film.co.uk;
www.silverprint.co.uk

Rating: 4 out of 5



WORKSHOP: HARDWARE DRILLING JIG

Hardware, especially handles and knobs, can totally alter the appearance of a project, whether it's a small cabinet or something on a larger scale. Such metalwork may be simple to fit, but it's easy to spoil the overall finish when poorly installed. When fixing one or two items, most of us would just mark out and drill the appropriate holes freehand, using a bradawl or centre punch first so the bit doesn't skid off the surface. Cramping an offcut at the back of a panel to prevent break-out is generally a good idea, too.

Softwood or plywood

Faced with fitting 23 knobs to my new kitchen units recently, I decided a simple jig would make life easier. Not only would holes be drilled square but it would ensure the knobs would align exactly along the relevant edges. Of course, if you have a pillar drill or similar a jig is less important, though you still need to mark each hole carefully. With an accurate jig you shouldn't need to do any marking out, once it's built.

I used three pieces of 75 x 25mm PAR softwood for my jig. For holes limited to door corners this doesn't need to be made too long. As I needed to drill holes centrally in 600mm wide drawers, I decided to make mine about 400mm overall.

As I needed to drill holes centrally in 600mm wide drawers, I made mine about 400mm overall



Rather than making everything too tight, I allowed for a 14mm thick flooring offcut when assembling the jig. Sandwiched between the front and back sections, the spacer could be slid snugly into place with the jig in position on the panel. You don't want to risk hammering a tight jig across a nicely finished door or panel. Cramped to prevent movement, the spacer also prevents break-out when drilling.



Sandwiched between the front and back sections, the spacer could be slid snugly into place with the jig in position on the panel



Faced with fitting 23 knobs to my new kitchen units recently, I decided a simple jig would make life easier

Drilling accuracy

Screw components together but don't glue them, in case you need to adapt the jig later. Adding a stop across one end means you can slide the jig up tight to the corner of the door or drawer for precise, repeat drilling. A gap allows you to check the stop is tight against the door.

Measure along from the end stop when marking the initial hole position on the jig, and obviously down from the top edge. You must drill this accurately, completely through front and back so the jig can be used either way round. If you don't have a pillar drill then line the bit up with a small square as best you can. If you're using the jig for two or more different holes, label each one with a marker pen.

Check the drill bit size, which should be a tad bigger than the screw thread for the handle or knob. Once drilled, you can fit the knob knowing repeat hardware will be precisely located. If the pilot hole should get sloppy, simply drill a new one, shortening the jig if necessary. You may want to substitute hardwood or plywood if you plan on using the jig for plenty of holes.

Anyone regularly fitting units would almost certainly use a jig, whether it's adjustable or made for each particular job. With a bit of ingenuity you could make your homemade version adjustable, though it's probably easier to knock one together from scratch each time.



Once drilled, you can fit the knob knowing repeat hardware will be precisely located



SUMMER PROJECT PLANTER

Takes: One weekend

Tools you'll need: Mitre saw, sander, bench plane, pocket-hole jig

PRACTICAL PLANTER

The horizontal slats on Phil Davy's planter can be placed at two different heights depending on the height of the shrubs



No matter where you live, a planter will brighten up any outdoor area even if you're no gardener. This slatted version will look good in either a traditional or more contemporary setting and can be used for plants or shrubs. The horizontal slats are not fixed in place and can be positioned at two different heights to suit the height of the plant. Made from PAR softwood, it's dead easy to build and relies mostly on nails. A mitre saw will speed up cutting timber to length, though this is not essential equipment.

Although straightforward to construct, this project is easy to get wrong as the legs consist of two sizes of timber. Build the side panels in matching pairs and check the drawing. The first pair has 45mm-wide legs, with inner horizontal battens that run flush to the outside edges. The second pair of panels have 70mm-wide legs, with shorter battens. Once glued and nailed together they form a rigid structure. When marking out batten lengths for building the second pair of panels, make sure there's a slight overlap where the legs meet at the corners. This will give just enough (less than 1mm) to plane the edges flush. Do this and you'll not see these butt joints when the planter is painted.

Pocket screws

The top frame is mitred at the corners, though don't just rely on butt joints here; exposed to the elements, you'll find the mitres will open up. I fixed the rails together with pocket screws, though an alternative would be to cut halving or even bridle joints. Reduce the width of the top rails to about 55mm.

On any project that features rows of regular rails, assembly is far simpler if you use spacers between them. I used 12mm plywood strips for this, but use thicker material if you want wider gaps between the rails. Wider gaps make for easier painting with a brush.

I made a couple of planters for family, which explains why one is painted cream and the other sage green. Two coats of Cuprinol Shades were applied by brush, painting all inside surfaces first. Punch nail heads below the surface and use an exterior filler before sanding.

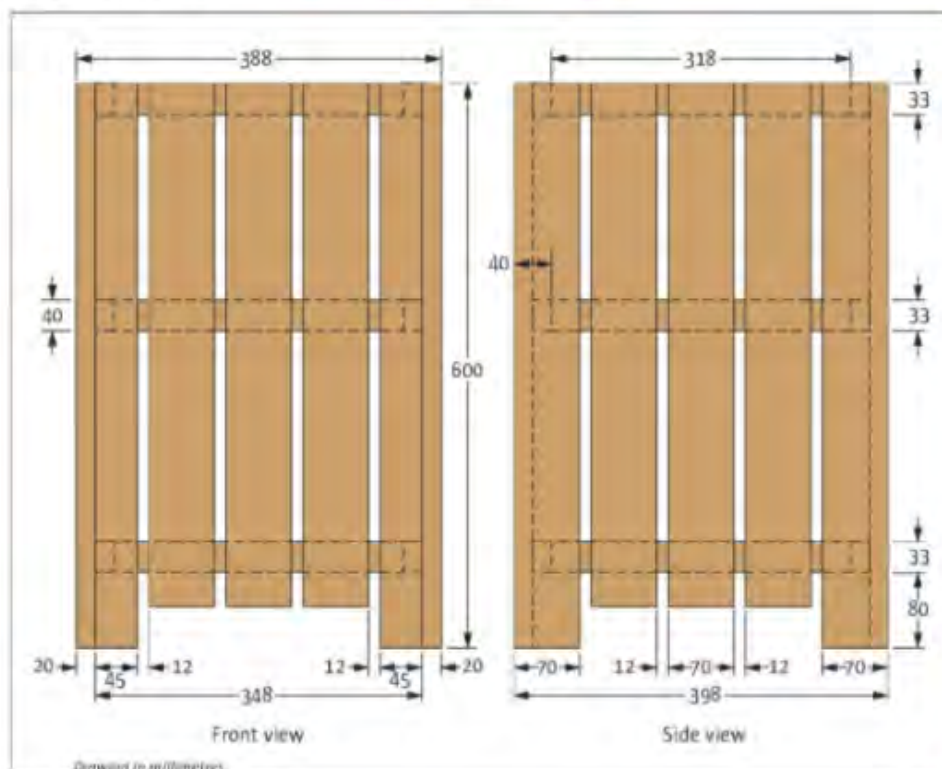


Fig.1 Planter dimensions



1 Cut softwood to length, checking that all 12 inner rails are 40mm shorter than the legs



2 Butt ends of two narrow legs and three rails against the timber and mark lines across for the horizontal battens



3 With 12mm plywood spacers between them, cramp together legs and rails. Any defects should be face up



4 Lay the middle batten across the rails and mark to length. You need to cut six pieces at this length



5 Keeping timber cramped, spread exterior PVA glue between the pencil lines previously marked



6 Fix battens to the rails using 30mm oval or lost-head nails. Pre-drill ends to prevent splitting



7 Once you've made the first pair of side panels, mark against the adjoining legs. Cut six more battens to length



8 Build the remaining two side panels with shorter battens; make sure adjoining sections fit together snugly



9 Apply glue to edges and cramp the panels together. Check ends for alignment and square



10 Wider legs should overlap narrow legs slightly. Drive in nails and punch heads below the surface



11 When the glue has dried, trim the edges of the legs flush with a bench plane. Lightly chamfer corners and remove arrises



12 The top frame is mitred together at the corners. Cut the first mitre, check timber on the planter and cut the other end



13 Cramp timber in position and cut remaining pieces to size; you could simply cut halving joints if you prefer



14 Use a pocket-hole jig for the mitre joints; experiment with drill depth and angle on offcuts first



15 Screw the frame together, cramping joints together as you insert the screws. Nail the frame to the top edges of the planter



16 Fill nail holes and sand the planter. Brush on a couple of coats of suitable outdoor paint, such as Cuprinol Shades



17 Cut slats to support the plant holder; these simply sit loosely on the middle or lower battens



18 The finished planter will fit in with contemporary gardens while also looking very effective in more traditional areas



19 The completed planter should look something like this

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'THE BOX WITH THE FUNNY TOP'

Originally inspired by the work of French woodturner **Benoît Averly**, **Les Thorne** sets about making his own version of a classic piece

I'm often asked about sources for new ideas. You come up with a radical new design, make the piece, take it along to your local woodturning club, only then to find someone piping up to inform you that some obscure turner, hidden away in a cave on a remote island, has already made an identical piece. I do a number of demonstrations, both at home and abroad, so most of my new pieces are aimed towards a need to show a tooling, texturing or colouring technique. The beauty of this is that when it goes slightly wrong, it gives me an opportunity to evolve the project.

This particular piece is borne from such a mistake. I was turning a box in the style of French turner, Benoît Averly, with a fish tail shaped finial on the top, when I discovered a split in the timber, meaning I had to remove part of the top. Because of the lessons learned while carving feet on bowls and doing barley twists, I luckily had the tools and know-how to shape the top into a point. The flame finial was a later addition and actually started life as a bell shape, before someone likened it to Noddy's hat! ✂





1 This is a common problem for a production turner: while turning batches of items, I've worn a groove in the toolrest due to using a parting tool in the same place over and over again



2 This is easily remedied by draw filing with a fine mill saw file and then finishing off with some 180 grit wet and dry. You'll be pleasantly surprised how easily the tool now traverses along the toolrest



3 A very boring piece of iroko is perfect for this box: it's dense, fairly easy to work and not prone to movement, which is a very important thing to take into consideration when making a lidded piece. Mark centres with a mortise gauge; this is about as close to real woodworking as I get!



4 Mount the piece of wood – about 300mm long × 75mm square – up between centres. When you've made it round, put a spigot on either end to suit your chuck



5 At this point you need to decide which end will be the top, and this part needs to be mounted in the chuck. Here you can see that I've marked where the join is going to be and the shaded area shows the spigot, which will hold the two parts together



6 A 10mm round skew is the ideal tool for cutting the spigot. The best way is to present the tool and advance it by lifting the handle; this will give a peeling type cut rather than a scrape



7 The sides of the slot need to be at perfect right angles to the spigot. If the tool is tilted slightly it will shear scrape on the side; this is a cut that removes tiny amounts of timber and leaves a great finish



8 At this stage of making a box you'll need to decide whether the male spigot remains on the lid or the base. On this design, I leave the spigot on the lid. It's parted off with a thin 2mm parting tool so as not to waste too much wood



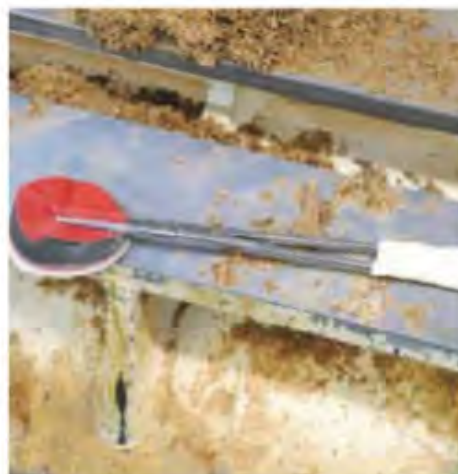
9 When parting off I advise leaving a tiny piece of spigot on the base; this will give you a guide to hollow to, which will ensure you're left with a perfectly fitting lid



10 Begin the hollowing using a 13mm signature spindle gouge. You could drill a hole down to your finished depth but I prefer to just work down with the gouge



11 At about 50mm deep you may start to experience vibration, and this is the time to resort to a specialist-type hollowing tool such as the one shown here from Simon Hope Woodturning. Its small cutter and large shaft make hollowing vibration-free



12 Once you've turned the inside of the lid to a 'U' shape you'll need to sand to a smooth finish. My fingers won't reach all the way in so I use a soft foam hook-and-loop pad held in a pair of forceps



13 My go-to product for the final smoothing is Chestnut Products' Cut 'n' Polish. This wax-based abrasive is best applied with kitchen towel after sanding to 240 grit



14 The initial shaping of the lid can now be carried out using a spindle gouge. You want a flowing curve with a fish tail shape at the chuck end. A rough shape is all that's needed at this stage as you can re-turn when the two halves come together



15 Mount the base up onto the lathe and repeat the hollowing process. I recommend keeping away from the final size at this point. As you come up the side of the box, keep the flute of the tool pointing at 3 o'clock, which will prevent the tool 'digging' in



16 Once the majority of the inside is turned away with the gouge, it's time to do some cleaning up cuts. The gouge will remove the timber really effectively but won't always leave the best finish



17 The 10mm skew is just long enough to access the bottom, acting as a scraper. This cut isn't easy as the overhang off the toolrest is a bit far to be ideal, but it is doable with some practice and a light touch



18 Trying to sand the flat base on the inside is almost impossible without using a power sanding pad. Be careful not to press too hard as any excess heat generated will crack the end-grain



19 After the whole inside is sanded, cut a small step into the base to accept the spigot. Remove small amounts of timber using the side of the tool as before. Stop frequently and check the fit, which will ensure you get a nice push fit



20 With the lid in place you can see the shape I'm aiming for – an elongated bottle. The tailstock can now be brought up before the final shaping is completed



21 If you're not confident using a skew chisel, try a spindle roughing gouge, although the skew will give a superior finish down the convex shape. A gouge will be needed to complete the concave section, however



22 Whenever I make boxes I like to create a punctuation point where lid meets base; this is done with a small 'V', which is made using the long point of a skew. It also acts as a boundary for the texture



23 When I first made one of these I completed most of the shaping using Microplane rasps, then I discovered the rotary carbide-type cutters, which are great as they remove loads of material amazingly effectively



24 The cutter fits in a Proxxon mini angle grinder and can be used to remove almost all the fishtail shape, leaving just the point. Keep revolving the piece so you're able to see the shape emerging



25 I'm afraid that sometimes you just have to get on with some hard work and sanding! The final shape and finish on the top can be quite laborious but worth it in the end. The hook-and-loop pad holds the abrasive and makes life a little more comfortable



26 One way to get away from having to sand to a finish is to add some texture. A ball cutter mounted in a mini drill gives an interesting effect on the surface of the iroko



27 Whenever you're doing something as repetitive as this it's important to get comfortable and you can see how my hand is resting on the toolrest and the box is rotated against the cutter; this is much better than trying to manoeuvre the cutter all over the box



28 The ball cutter fluffs up the grain in places, and these areas are best cleaned up with a brass brush mounted in a drill. Ensure to protect your eyes from any loose brass wires



29 A new idea I had for this box was to cut the plain wood areas down slightly, to accentuate the textured areas. These small adjustments can really improve the look of a piece



30 Once happy with the surface on the piece, apply a coat of sanding sealer before giving the whole box a spray with ebonising lacquer. Let the first coat dry before applying the next



31 Using 120 grit abrasive, give the texture a sand, which will remove the point from the high points thus exposing the wood underneath. Sand with 180 grit and finish off with 240 grit abrasives



32 This brown colour from Hampshire Sheen is a water-based stain and brilliant on the iroko. Try not to get too much over the black, but don't fret as it won't show anyway



33 Just like any box I make, the spigot needs to be removed and the best way of doing this is to turn a jam chuck from a softer wood, such as pine. It doesn't need to be a really tight fit otherwise you run the risk of ruining your nearly finished box



34 It's important to minimise the risk at this stage, so I like to use the 10mm signature gouge as it encourages me to take small controlled cuts. You should be left with a really clean surface that requires very little sanding



35 The flame finial is made from a small piece of ebony. I wouldn't normally recommend working with the piece only screwed partway onto a screw like this, but with a small turning, it seems to work perfectly fine



36 The completed textured box in iroko with flame finial should look something like this

MATERIALS & TOOLS REQUIRED

MATERIALS

- 1x6x8 – (19mm thick x 140mm wide x 2,438mm long) piece – 3 off
- 1x3x8 – (19mm thick x 64mm wide x 2,438mm long) piece – 2 off
- 2x4x8 – (38mm thick x 89mm wide x 2,438mm long) piece – 1 off
- 2x6x8 – (38mm thick x 140mm wide x 2,438mm long) piece – 2 off
- 1x2x8 – (19mm thick x 38mm wide x 2,438mm long) piece – 3 off
- 64mm pocket hole screws
- 32mm pocket hole screws
- 1x4x8 – 1 off (for French cleat) – (19mm thick x 89mm wide x 2,438mm long) piece
- 2, 159mm pine cove moulding
- 4.9m shoe moulding
- Wall trim moulding – 1 off
- Minwax Stain – Weathered Oak
- Minwax Stain – White
- Minwax One Coat Polyurethane
- Wood filler

TOOLS

- Mitre saw
- Impact driver
- Kreg jig
- Random orbital sander
- Finish nailer

CUTTING LIST

- 50x150mm piece @ 1,918mm – 1 off
- 25x150mm piece @ 762mm – 8 off
- 25x75mm piece @ 762mm – 1 off
- 25x50mm piece @ 1,740mm – 2 off
- 25x50mm piece @ 686mm – 2 off
- 50x100mm piece @ 762mm – 2 off
- 25x75mm piece @ 2,019mm – 1 off

* Please note that these are rough estimates of the sizes I used. You will need to adjust to suit your preferences. The trim pieces will have to be cut to size once the main part is assembled

HEAD OF THE BED

Mitch Wilmoth works to commission and creates a bespoke headboard in a farmhouse style

I typically don't do commission work for others, just because it isn't really my goal in creating projects, but every once in a while, I like to do things for good friends. This is one of those times. My friends were looking for a headboard in a certain style and they'd had trouble finding what they were looking for. As a result, they asked if I could build something and I accepted the challenge. This is a very fun project that anyone can make, so let me take you through the necessary steps.

Cutting the wood to size

The first step I took was to cut the pieces of timber to size. There are a lot of different parts affiliated with this project, so I decided to cut all the components as I went along rather than all at once. When making projects, things don't always go as planned, so when you cut as you go, you're leaving room for error and you can custom cut each board to fit perfectly down to 0.5mm. A rough cutting list is shown in the 'materials & tools required' sidebar opposite.

Sanding first

After cutting everything to size, I sanded all of the different pieces up to 220 grit. I chose to do this now as I thought it may be a little challenging once everything was assembled.



1 Cutting the wood to size using a plunge saw



2 Sanding all components up to 220 grit using a random orbit sander



I added a chamfer on the corner of all the slats – where you cut away the right-angled edge or corner to make a symmetrical sloping edge. I did this to make sure the panels would look more like panels rather than just random pieces of wood.

Assembling the headboard

The next step was to assemble the headboard. I did this in three phases: inside, outside and trim. For the inside, I first laid out all of the slat panels in the correct orientation and then, using

a finish nailer, nailed a frame around the outside of the 25x50mm slat; this created the inside of the headboard. For the outside, I basically built around the inside section. I constructed the top and bottom using pieces of 50x150mm material



3 Using the finish nailer to assemble the headboard



4 Marking where the pocket holes will be drilled



5 Using the Kreg Jig to drill pocket holes



6 Attaching the 38 x 140mm piece to the inside of the headboard using 32mm pocket holes screws



7 Using a finish nailer to attach the top cap

and the sides with a 50 x 100mm piece. I then flipped the entire structure over and added pocket holes to all of the pieces on the inside frame. I used 32mm pocket hole screws when I was screwing into the 25 x 150 piece and 64mm for the 50 x 150mm. The next step was to add the trim.

Attaching the trim pieces

After constructing the inside and outside, I could then add the decorative trim parts of the headboard. These included the top cap, the cove moulding for under the top cap, the shoe moulding for around the inside of the headboard, plus the wall trim moulding that I added. To attach them I used a finish nailer as before. On some of the pieces, I used a mitre saw to achieve the 45° angle as it would curve around the headboard.

These elements are not completely necessary, but they do make the finished project look far more aesthetically pleasing.

Prepping for finish

Next I could prep all the components for finish. To do this, I went around the finish nail holes and placed a small amount of wood filler into each one. I let it dry, then sanded everything down until smooth. I also sanded any other areas that required a small touch up.

Applying a finish

After prepping everything, it was time to apply my choice of finish, but you can use whichever product you like – paint, stain or just leave it natural if you prefer. I tried something that I haven't done before and luckily it worked!

I decided to go for a white weathered look, so I first applied a thick coat of a stain called 'Weathered Oak' and let it dry for a few days before applying several coats of a white stain, then waited a few days between each coat. When you apply the white stain, it wants to streak, so be sure to apply it evenly and all in the same direction. It took several coats to achieve the desired result. If I were to do this again, I'd probably paint it all white and then use steel wool or high grit abrasives to distress it. After I achieved the desired colour, I applied a coat of water-based polyurethane over the top. This wasn't supposed to yellow the white at all, but it did a little. See the online video for details on the polyurethane I used. After this the headboard was complete; now all I had to do was hang it.



8 Cove moulding that was installed under the top cap



9 Installing a decorative wall trim moulding around the headboard



10 Using wood filler to hide the nail holes



11 Applying the first coat of 'Weathered Oak' stain



12 Applying first of several coats of 'White Stain'



13 Using a level in preparation to hang the headboard



14 Attaching the French cleats to the wall

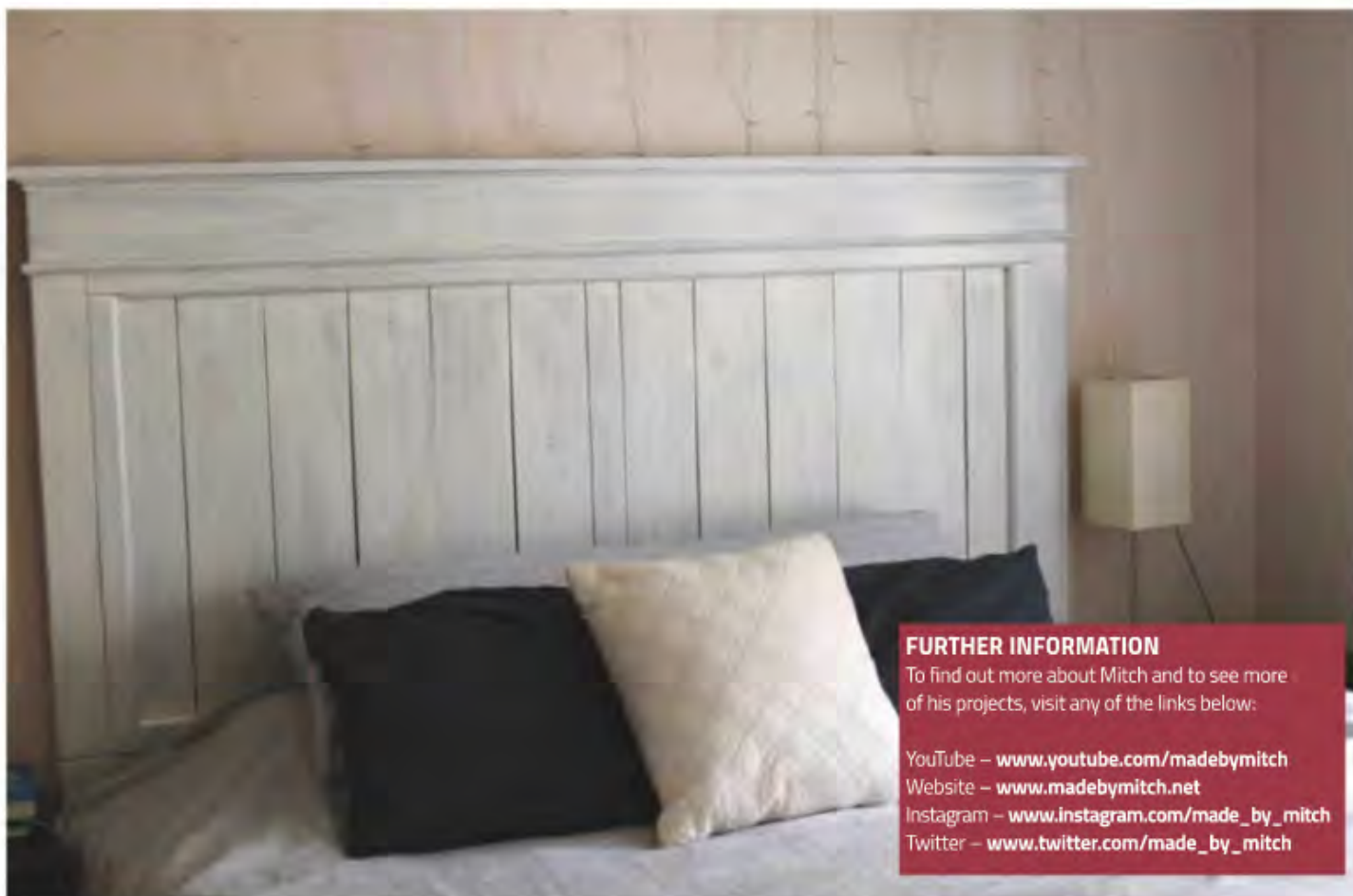
Hanging the headboard

I decided to use French cleats to hang the headboard. In my opinion, this is the best way to hang a large item on a wall. First I attached the cleats to the back of the headboard part using 50mm screws. I added a board at the bottom of the back of the headboard to ensure everything would be level. Next I attached the other side of the cleats to the wall. I made sure to fasten them in the studs using 64mm wall screws, which would hold the weight of the headboard. After the cleats were attached to the wall, I could then hang the headboard, and once this was hung, the project was complete.

Be sure to check out my online video for the full how-to experience and if you have any questions regarding the steps, please leave a comment or send me a message. ✕



15 Hanging the headboard on the wall



16 The completed headboard in situ

FURTHER INFORMATION

To find out more about Mitch and to see more of his projects, visit any of the links below:

YouTube – www.youtube.com/madebymitch
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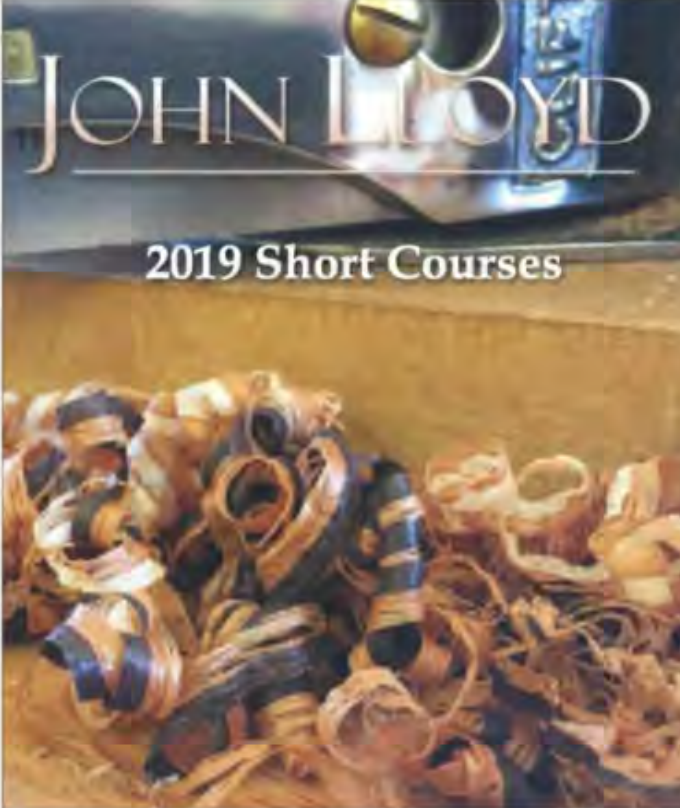


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DEAR PRUDENCE

please come home

What can woodworkers do about climate change? Nothing. There, that was a short article. I could pad it out by listing the equivalences to: turning off the tap while you brush your teeth; not mashing more potato than you're going to eat; and keeping your distance because every time you touch your brakes you're wasting fuel. It wouldn't make a jot of difference. Not to the wider world. Or, let's be clear, to the wider human world. The rest will survive. Termites will have a field day. Fields will be stiff with rabbits, and towns will teem with rats: they'll be alright. It's us we're worried about.

Long ago we stopped using Cuban mahogany largely because we felled it out of existence. Most of the good stuff has gone. All timber is magnificent, but fast grown forest stock is not as magnificent as woodland standards left to their own twists and turns for generations. Softwood is softer than it would have been a few decades ago. MDF is little more than industrial cardboard. It's a microcosm: we're debasing our environment, and we're all in it together.

No one is to blame, however rich and powerful and corporate. All those people are just like us, and we'd be just like them, given half a chance. We're all the same and we're all to blame not only because we're lazy, greedy and cruel as a race, but because we can't help it: it's who we are. We are termites enjoying the moment. Rabbits in paper hats having a whale of a time. Rats.

Jeremiah

Is that it? Is my middle name Jeremiah? Yes, I'm afraid it is; but that doesn't mean The End. Until humans stutter and splutter and go the way of Cuban mahogany, doing nothing is not an option. I still don't mean that doing something will change anything (it might if everyone did it, but not everyone will – just look at the progress so far); I mean that we inevitably do things, and that these things contribute. Assuming you have any say in the matter (I'll save Free Will and Determinism for another day) what would you like those things to be? It does come back to teeth, mash, and those pig-ignorant drivers who breathe down your neck at 70 miles an hour. Grrr.

It comes back to prudence. Economy. Minimal waste. Minimal usage in the first place. Don't think of it as a constriction. The strongest human trait is adaptability, and we've never had so many resources to play with. Carefully. Be inventive. We are not constrained any more by fashion. Just as pop music crashed through every barrier and made all music possible, you can choose any style that chooses you.

Don't do it for the sake of it. Do it to answer a need – even if that need is emotional and psychological rather than practical; and especially so, for practical needs are more easily met. Make it count. Make it last. Make it valuable. Don't just make something; create it. What will it say? What will it speak of? Quality. Patience. Care. Skill. Endurance. Balance.

What will it speak of? You! These are your best qualities, and you can tone them up in the workshop just as you tone up your muscles in a gym (or you don't). Woodwork can improve you! Make you more aware of yourself. Happier. It will rub off on other people. Different values will pertain. You care for your work and the customer/relative/friend cares for it too.

Statistical noise

It will be a slow seep. It probably won't make any difference overall. Your best intentions will be lost in statistical noise. Except to you. You will benefit in ways that are beyond you. Woodwork connects you to the beautiful physical world as if with a cord. It becomes you. Looking at a piece of your own work is like looking in a mirror.

This is the connection that we humans are losing. It is the connection that, if we stand a chance, we must regain. The world is not a quarry or a fridge to be raided at whim. It isn't a timber yard. It isn't even our backyard. It's our home.

What is your most treasured possession? What is the most beautiful thing you have ever seen? What surpasses your imagination as a light year surpasses a mile? What matters most? What is the only thing that really matters? For what would you risk your own comfort? For what, if push came to shove, would you risk your own safety? Answers on a postcard. ✖

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★★★★★ 4.9 Stars

AT350WL Woodturning Lathe

£849.96 Inc.vat 501214

A popular lathe for both teaching and craft demonstrations, not too big or heavy, but with enough capacity to show off your skills. Utilising reliable inverter technology usually found on much bigger machines, this lathe also has electronic variable speed suiting delicate work, large diameters or out-of-balance workpieces.

- Heavy cast iron construction gives strength and low vibration
- Forward and reverse capability, perfect for final sanding
- Versatile magnetic switch mounting for optimum positioning
- 24-position spindle indexing, position held by magnetic dowel pin
- Supplied with Axminster drive and revolving tailstock centres

Stand **£239.95** 502498

Bed Extension **£229.96** 502496

Bed Extension Stand **£99.94** 502497



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Watch video
online



Matt Estlea, woodworker and social influencer, will be visiting all 8 Axminster Tools & Machinery stores over the coming months.

High Wycombe - 22 June

Cardiff - 29 June

Nuneaton - 06 July

Axminster - 17 Aug

Warrington - 14 Sept

North Shields - 28 Sept

Sittingbourne - 12 Oct

Basingstoke - 26 Oct



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★ Trustpilot 9.7/10



Coronet Herald Heavy Duty Cast Iron Electronic Variable Speed Lathe

"I found the lathe a delight to use. Functionality wise, it did everything I asked of it without fuss and components stayed put when locked in place...I think it is a great midi-lathe which will suit many turners' needs, capacity and space wise."

Woodturning 317



"With large blanks mounted you can use the variable speed control to keep the machine stable and vibration free...Would I recommend this lathe? Yes without a doubt, it's well designed and built to a high standard."

Online Review

"The new Herald - Sets a new standard"

It surpasses my expectations by a country mile! The size is ideal for the turner with limited space, has outstanding capacity for its footprint and is very quiet indeed... Record Power most certainly have a winner."

Online Review



Heavy-duty spindle lock and 24 point indexing



Features the latest motor technology to deliver huge amounts of torque from the 750 W output motor



Rotating headstock features accurate angle stops and can swivel 360°



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£999.⁹⁵**

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16011 Cast Iron Bed Extension	£149.99	Save £30.00
16013 Cast Iron Outrigger	£39.99	Save £10.00
16012 Bench Feet	£59.99	Save £10.00

Shown with optional leg stand.

Specifications

Maximum bowl diameter:	533 mm
Maximum between centres:	508 mm
Maximum swing over bed:	355 mm
Spindle speeds:	96-3890 rpm
Motor input P1:	1000 W
Motor output P2:	750 W
Thread:	M33 x 3.5
Taper:	2 Morse taper
Weight:	48 kg
Size:	W870 x D290 x H252 mm



Prices valid until 30.06.2019. £60E

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