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December 2021

The Woodworker

& Good woodworking

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ROCKING HORSE REBIRTH

Shaun Newman rejuvenates a Collinson classic

WIN

1 OF 2 CLARKE CTS16 250MM (230V) TABLE SAWS

PLUS...

- PETER DUNSMORE'S DESIGN FOR A WOODEN POP-POP STEAM BOAT
- KEN MOORE TURNS A RANGE OF LED-LIT SNOWMAN DECORATIONS
- **WHEN MUSIC MEETS WOOD:** NORMAN MACKAY & WOODEYE FURNITURE

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Welcome

I'm not sure where the time goes – it's hard to believe that 2021 is nearly behind us! The good news is that we've survived another tricky year, and while it's important to be aware of possible challenges ahead, it seems that things are getting back to where they need to be, albeit at a slower than expected pace.

A new online home for the magazine

We're very pleased that despite a tough few years, the magazine continues to thrive, and we're honoured to be able to build on its long and esteemed history. The exciting news is that in addition to a print version, we've also created a new online home for the magazine – **www.thewoodworkermag.com**. This includes a brand-new forum for members, an extensive archive of articles – past and present – while benefitting from a slicker, more user-friendly design. We hope you like it!

Festive fun

Getting back to this, our December edition, there's a healthy dose of festive fun in store. As usual, we've included some wonderful projects designed to be made as gifts, including a wooden pop-pop steam boat, 1917 Fokker DR-1 model triplane toy, a range of homeware from offcuts, and an LED-lit turned snowman decoration. Easy to make and requiring only basic materials, these will also provide you with some welcome relief from Christmas proceedings if you so need it – we won't tell if you don't!

Rocking horse revival

In keeping with the 'toy' theme, there's also a fascinating feature by Paul Greer on the history of wooden toys, which happens to link to this month's cover star – Shaun Newman's Collinson rocking horse renovation. As Paul says in his article, wooden rocking horses first appeared in Europe in the 17th century, with handcrafted variants being an 18th century phenomenon. The English dapple grey – similar to Shaun Newman's 'Caroline' – is perhaps the best-loved and some fantastic examples still exist to this day. As Shaun references, the Rocking Horse Shop in Fangfoss, Yorkshire is a wonderful source of materials and supplies for making your own as well as those items required for a renovation project. If you'd like to know more about Anthony Dew, who founded the company back in 1976, his new book, *The Complete Rocking Horse Maker (2nd Edition)*, is now available to buy via the website – **www.rockinghorse.co.uk**. An ideal Christmas read, it distills the knowledge gained by Anthony during his nearly 50 years as a rocking horse designer, maker and restorer.

Alan Peters Furniture Award 2022

We also have some exciting news to share regarding the Alan Peters Furniture Award, which will return next year in partnership with Organiser Jeremy Broun and main prize sponsor Axminster Tools. While this year's award had to be changed to an online-only platform due to ongoing restrictions, we're very hopeful that for 2022, a physical award ceremony and exhibition of winning entries will take place at Axminster Tools' Nuneaton store. Deadline for the 2022 award will be late summer – still to be confirmed – but further details will be announced in the January issue. As before, entrants are invited to create a piece(s) that echoes Alan Peters' furniture making philosophy. We're thrilled to be able to continue this award, which celebrates the legacy of one of Britain's most prominent furniture designer-makers of the late 20th century. Be sure to pick up the next issue where we'll also announce the range of prizes on offer.

Lastly, from myself and the team, we'd like to wish you all a very Merry Christmas and a happy, prosperous 2022!

Email tegan.foley@mytimemedia.com

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Technical & Consultant Editor

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

WIN!

1 of 2 Clarke CTS16 250mm (230V) table saws with stand

Ideal for bench top use, this 230V table saw from **Machine Mart** is perfect for cross cuts, rip cuts, mitres and bevel cuts on both hard- and softwoods.

There's two up for grabs, so visit our new website – **www.thewoodworkermag.com** – for your chance to win and see **page 32** for further details

Machine Mart

Good luck!

51 CLASSIC INSTRUMENTS REINVENTED ON THE LATHE

Woodturner Andrew Hall is known for making some rather unique instruments on the lathe. Here he shares his take on a traditional cajón as well as the novel 'Bowlbro' design, based on a Dobro guitar

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The Woodworker & Good Woodworking
DECEMBER 2021

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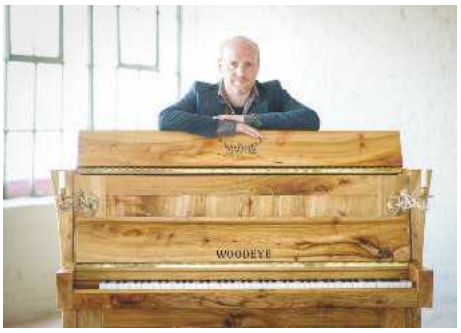

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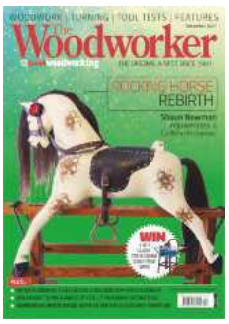

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WAYWOOD awarded two Bespoke Guild Marks

Waywood, a team of bespoke furniture designers and makers based in Oxfordshire, were recently awarded two prestigious Bespoke Guild Marks – one for their 'Sculptural Sideboard' and another for their 'Display Table' designs.

The Bespoke Guild Mark, awarded by The Furniture Makers' Company, is the ultimate accolade for designer-makers, recognising excellence in design, materials, craftsmanship and function for exquisite pieces of furniture made as single items or a limited run of up to 12. It's awarded to beautifully crafted pieces of bespoke furniture and, since its launch in 1958, has been the apex of distinction for UK designer-makers.

'Sculptural Sideboard'

Designed by Barnaby Scott and Clive Brooks, this piece is described as a fumed oak and pear drinks cabinet with sculptural reveal handles and shaped wine shelves. The reveal handle with mitred detail involved a complex process in order for construction to be kept as minimal as possible. The doors are made from various layers for stability and cleanness of design. The sideboard was made by Simon Smith and Clive Brooks.

'Sculptural Sideboard' – a fumed oak and pear drinks cabinet with sculptural reveal handles and shaped wine shelves

Commenting on the piece, Barnaby said: "We wanted to create a sideboard with flexible storage as well as dedicated wine storage, which also serves as a feature piece with only a few standout design details."

'Display Table'

This second piece, designed by Clive Brooks and Simon Smith, was made to commemorate and celebrate the client's mother and her love of flowers. The table – made from burr elm, fumed and figured eucalyptus – features eight complex laminated shapes, joined together at the top then fixed into a domed veneered base. The engraved glass disc sits into the formed base. Clive Brooks and Jered Allcock were the makers behind this project.

Daniel Hopwood, Bespoke Guild Mark Chairman, said: "As judges, we're looking for exemplary design and attention to detail. These two beautiful pieces from Waywood achieved this and thoroughly deserve a Bespoke Guild Mark."

Barnaby added: "We feel honoured to have received two prestigious awards for our craftsmanship and feel extremely proud to receive this recognition within our industry."

'Display Table' in burr elm, fumed and figured eucalyptus, featuring eight complex laminated shapes

The 'Sculptural Sideboard' and 'Display Table' are the 477th and 478th pieces to be awarded a Bespoke Guild Mark in the award's 50-plus year history.

Such pieces are recognisably items of quality and distinction, and to substantiate and promote this accolade, Bespoke Guild Mark holders receive a certificate of authentication, PR opportunities, permission to use the Bespoke Guild Mark branding in communication materials and automatic consideration for the annual £1,000 Claxton Stevens Prize, given to the best Bespoke Guild Mark awarded piece of the year.

In addition to celebrating the creativity, skilled craftsmanship and technical ability of award recipients, the Bespoke Guild Mark provides invaluable expertise and insight to unsuccessful applicants to further improve their craft for the future. To find out more, see **www.furnituremakers.org.uk**.

12-month finance now available at MACHINE MART

To help spread the cost of buying all the tools and equipment required to get the job done, Machine Mart has teamed up with Hitachi Personal Finance to offer new, convenient and great value payment options. Customers can now pay for goods over a 12-month period, thus offering a great deal of flexibility when it comes to repayment.

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MAKITA adds new 2Vmax CXT multi-line lasers to its range

Among a series of new product launches, Makita has added two new 12Vmax CXT multi-line lasers to its extensive range of site equipment. The multi-line lasers project one horizontal and two vertical 360° lines and include a precise self-levelling feature to allow simple setup, layout and alignment.

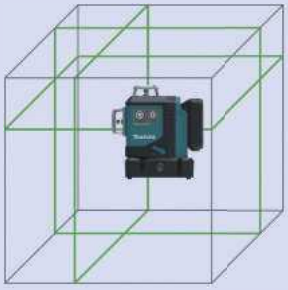
12Vmax CXT Red & CXT Green multi-line lasers

The 12Vmax CXT Red – SK700DZ – and 12Vmax CXT Green – SK700GDZ – multi-line lasers are versatile and durable with a range of features to make work on site as simple as possible. The SK700DZ has a range of 25m in each direction – 50m diameter – while the SK700GDZ's green lasers provide an increased range of 35m – 70m diameter – and increased line visibility in brighter conditions. The robust units are IP54 (dust- and splash-proof) rated, have an operating temperature range of -10 to 50°C, and feature a ¼in tripod thread for easy mounting.

Each vertical and horizontal laser emitter projects four lines to create up to three 360° laser lines. Depending on what's required, users can choose various combinations of laser lines in addition to the full three line configuration. Single horizontal or vertical lines, vertical and horizontal combined, or both vertical lines – front to back and side to side – are available. Also included are three brightness settings for optimum visibility depending on environment.

Rotary base & self-levelling system

The multi-line laser units feature a rotary base with eccentric rotation mechanism, which reduces set up time by allowing the laser body to rotate without changing the position of the defined plumb point. With a dial for fine adjustment, the vertical laser lines can also rotate around the defined plumb point by up to 10°, left and right.



In addition, the pendulum-operated self-levelling system – accurate to ±4° – makes it easy to ensure the lasers are level, regardless of surface or uneven ground. The units feature a pendulum lock where self-levelling isn't required, thus protecting the laser during transit.

Effective & accurate use

Part of the Makita CXT platform, the compact 12Vmax batteries utilised by these new units provide excellent run times, with up to 22 and 14 hours from a 4.0Ah battery for the new red and green multi-line lasers respectively.

The operational range of both lasers can be increased to 70m – 140m diameter – when using the Makita LDX1 Line Laser Receiver Set – sold separately – which also enables effective, accurate use of the laser line in bright natural light.

Kevin Brannigan, Marketing Manager at Makita UK, said: "The new 12Vmax CXT multi-line lasers have been designed for use on a range of site layout, first- and second-fix tasks. The multi-line configuration and self-levelling mechanism makes it easy to align and lay out everything from doors and windows, floors, pipework and electrical installations to tiling, lighting and kitchen and bathroom installations."

To find out more, see **www.makitauk.com/products/measuring**.

IRONMONGERYDIRECT launches latest catalogue with exciting new products

Leading trade supplier, IronmongeryDirect, has issued its new catalogue with over 18,000 products in stock for next day delivery as standard. The updates include a choice of Rothley curtain poles and accessories, suitable for many domestic and light commercial applications. For example, its popular Rothley Baroque range is available in a number of finishes including antique brass and antique copper to perfectly match Rothley legs, twin slot shelving and hand rails.

Also featured are Carlisle Brass knurled cabinet handles and knobs, precision engineered from solid brass. The textured design aligns with various interior styles, particularly industrial, modern and contemporary aesthetics. To achieve a cohesive look, the knurled range is available in pull handles, knobs and t-bar knobs, in five different finishes including satin Nickel and Antique brass.

IronmongeryDirect's exclusive Altro range features a new assortment of designer bathroom ironmongery, which is available online. Offering a wide range of quality products for both domestic and commercial projects, the collection spans towel rails and hooks in satin or polished stainless steel as well as matt black.

Commenting on the new catalogue, Katrina Adamczyk, Manager of Category & Merchandising at IronmongeryDirect, said: "We constantly review and update our ranges to ensure we can deliver the products our customers need to meet a variety of project specifications from domestic premises through to specialist builds.

"Not only is our product offering constantly developing, we're also dedicated to expanding our delivery options with free next working day delivery available on orders over £45, as well as same-day delivery to selected postcodes and our Click & Collect service, allowing customers to collect orders from a network of over 6,000 UK shops."

To request a free catalogue or to view online, see **www.ironmongerydirect.co.uk/free-catalogue**.

RUSTINS adds 500ml aerosol to Strypit Paint & Varnish Stripper range

Rustins' award-winning Strypit Paint & Varnish Stripper range has been extended to now include a 500ml aerosol, which joins the existing 250ml, 1l, 2.5l and 5l sizes.

Vince McDonagh, Marketing and Design Manager at Rustins, says: "Our DCM free Strypit 500ml aerosol will achieve the same results, but it's now easier to get into those harder to reach and more intricate areas of the piece requiring stripping. It's non-drip, so ideal for use on vertical surfaces, as well as non-caustic and water and solvent washable."

Simply spray on a liberal coat of Strypit and leave until the paint starts to soften or blister, then wait a further 5-10 minutes before removing with a stripping knife or scraper.

For further information, visit **www.rustins.co.uk** or call **020 8450 4666**.

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THEAKSTON BREWERY holds once-in-a-generation 'Trussing In' ceremony


Former apprentice Cooper, Euan Findlay was recently 'Trussed In' at a ceremony held at Theakston Brewery, North Yorkshire

For the first time in a generation, a historic 'Trussing In' ceremony, where an apprentice barrel maker – or 'Cooper' – graduates to become a Journeyman Cooper, recently took place at iconic Yorkshire brewery, T&R Theakston.

In a ceremony largely unchanged for hundreds of years and tracing its roots back to the 14th century, apprentice Cooper Euan Findlay was Trussed In on 7 October. He was joined by fellow Coopers who gathered from across the country, going on to complete his initiation into the Worshipful Company of Coopers.

Theakston is one of only two breweries in the UK to still have an in-house cooperage, a tradition its maintained for nearly 200 years. The last time a Cooper was 'Trussed In' was more than 20 years ago. Beginning with the 'ringing of axes', the custom involves the construction of a 54-gallon cask – also known as a Hogshead – into which the Apprentice Cooper is inserted in front of an audience of friends, family, colleagues and invited dignitaries. They are then rolled around the brewery yard before being unceremoniously sacked and immediately re-employed as a fully-qualified Cooper.

25-year-old Euan from Bedale, North Yorkshire, began his apprenticeship with Theakston five years ago, learning the ancient craft of making the wooden casks designed to transport beer, including Theakston's famous Old Peculier ale. His 'Trussing In', originally scheduled for May last year, was delayed due to the pandemic.

To celebrate this important milestone, the brewery also announced the launch of a new pale ale to honour the occasion – Theakston Stave Bender – which was served on the day.

Joint Managing Director, Simon Theakston, said, "We've not had a Trussing In Ceremony for over 20 years, so this was a very special occasion, which also marked a great achievement for Euan. It was great to welcome him into the company as a fully qualified Journeyman Cooper, and the moment was toasted with a pint of our new Stave Bender ale.

"While Coopering is no longer practised in many breweries across the country, we've always maintained the tradition and we're also now seeing a renewed interest in the craft as many traditional and new brewers are seeking to explore more cask-conditioned beers."

On being made a Journeyman Cooper, Euan commented: "It was great to celebrate my graduation with colleagues, friends, family and fellow coopers. It was a very special moment and one that I'll remember for the rest of my career."

For more information on Theakston Brewery, see the website: **www.theakstons.co.uk**.

Extended deal for contemporary art in the nation's forests


'The Clockwork Forest' by Greyworld, 2010, Grizedale Forest

Arts Council England and Forestry England have embarked on a revitalised partnership to bring contemporary arts and new audiences to the nation's forests.

Originally begun in 2012, the new extended five-year agreement, which runs until 2026, will bring more ambitious contemporary artworks from emerging and established artists to forests across England, with a strong focus on climate, environment, biodiversity and peoples' connection to nature. The partnership is based on a shared belief that art and culture can bring people from all backgrounds together and teach us about how to care for the environment.

Since 1968 Forestry England has pioneered arts initiatives in a variety of art forms, across the nation's forests with temporary and permanent installations ranging from sculpture trails to virtual reality.

The partnership was signed at Forestry England's Grizedale forest, a key location that highlights Forestry England's historic relationship with the arts. British sculptor, David Nash, helped to give Grizedale its name of 'Forest for Sculpture' back in the 1970s when he was one of the first artists in residence funded by the Arts Council.

Since then, over 200 artworks have been created in Grizedale forest alone; the current collection includes seminal works by artists such as Andy Goldsworthy, Richard Harris, Sally Matthews and Greyworld.

Building on the success of the previous two Memoranda of Understanding, the new agreement supports the ambition of both organisations to address climate and environmental issues in the context of art and cultural production.

Mariam Zulfiqar, Contemporary Arts Manager, Forestry England, says: "Success from our previous partnerships with Arts Council England shows that woodlands and forests are a vital place for audiences to engage with art. Now more than ever we need artists to be able to connect with scientists, researchers and experts working in forestry, and our future programme will create conditions for this exchange to take place. As experts in forestry at the forefront of climate change and biodiversity issues, we have an important role to play in supporting artists when it comes to understanding and addressing the complexity of issues we face as a society. We see our arts programme as an integral way to connect audiences with these priorities and together with Arts Council England, we believe that art and culture inspire, bring together, and teach us about the world around us, including how to care more for the environment."

For more information on Forestry England, see the website: **www.forestryengland.uk**.

Phoograph courtesy of **Forestry England/Crown** copyright

DEVIL 2850 2.8kW electric fan heater

The Clarke Devil 2850 2.8kW electric fan heater, available from Machine Mart, is ideal for heating your workshop or garage. With its sturdy steel frame construction and tough powder-coated finish, the Devil 2850 weighs in at just over 2.5kg. Featuring a convenient carry handle, it's lightweight and portable enough to be easily transported.

The fan heater has three settings: Heater 1 (1.4kW), Heater 2 (2.8kW) and fan only, which is ideal for cooling during warmer weather. For added safety, the Devil 2850 benefits from a tip-over cut-off switch, which will trigger in the unlikely event of the heater being knocked either forwards or backwards.

Priced at £47.98, see **www.machinemart.co.uk** for more information.

DICKIES launches new **Women's Performance Workwear collection**

Global workwear brand Dickies recently announced details of its forthcoming Women's Performance Workwear collection, which is aimed at DIYers, tradespeople and professionals, all of whom demand high standards.

Every element of each product within the range has been designed and chosen to ensure exceptional performance. Dickies has long been proud to support women in work and as it moves into its centenary year, this new dedicated women's range is the perfect way to mark a continued passion.

Whether battling heat and dust on site or in the workshop, this new range ensures the wearer isn't only covered but also protected, thanks to the use of UV protective, wind-resistant and reflective materials, which include DWR (Durable Water Repellent) and AWT (Advanced Waterproof Technology). Dickies Temp-iQ ensures heat and moisture regulation and materials such as Cordura toughen garments in just the right places.

This exciting new range continues Dickies' commitment to providing exceptional outfitting and product to workers from all walks of life and disciplines, something that the brand celebrates 100 years of in 2022. For more on Dickies Workwear and the new Women's Performance collection, visit: **www.dickieslife.com**.

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RYOBI R18MMS ONE+ MULTI MATERIAL SAW

Part of **Ryobi**'s ONE+ system, the R18MMS is a versatile problem solver for keen DIYers and renovators, as **Phil Davy** discovers

This kit is supplied with a 2.0Ah power pack and IntelliPort charger, meaning newcomers to the ONE+ system don't have to pay out extra

Everything is supplied a large zipped fabric holdall, with enough space to store another tool inside, such as a drill or jigsaw

Although Ryobi are renowned for being power tool innovators, their latest multi material saw isn't exactly a new concept. In recent years Dremel, Skil, Makita, Worx and Einhell – among others – have all produced small saws capable of cutting thin materials, without the bulk of a bigger tool. While most of these are 230V, there's a few cordless examples, such as those from Bosch and DeWalt, with the latter having a larger capacity than most. Fitted with a regular TCT blade, these tools will cut softwood, laminate flooring and sheet materials up to about 20mm thick or more, as well as thin, non-ferrous metals, depending on the model. Swapping this blade for a diamond disc, it's possible to cut ceramic tiles.

Ryobi's R18MMS saw is part of their huge 18V ONE+ range, so batteries are interchangeable. This kit is supplied with a 2.0Ah power pack and IntelliPort charger, meaning newcomers to the ONE+ system don't have to pay out extra when it comes to getting started. Charge time is around 80 minutes with a 2.0Ah battery, but this increases if using a larger capacity pack. Included with this kit is a large zipped fabric holdall, with enough space to store another tool inside, such as a drill or jigsaw.

Pivot action

Fitted with a large rear D handle, this is covered in textured rubber for comfort and grip. Also shrouded, the protruding front handle means both hands are close together above the cut when controlling the tool. Bolted to the hefty steel baseplate, the upper plastic shell pivots at the back, exposing the blade. Baseplate and alloy blade guard are screwed together, ensuring the blade is completely enclosed until you plunge downwards to make a cut, which increases tool safety when in use. This does mean the line of cut is a little difficult to see, though notches on the baseplate act as a guide. Like other multi saws, there's no blade tilt facility, so you can only make cuts at 90°.

Not only does a lock-off button on the handle need to be depressed to activate the on/off trigger, it also releases the blade plunge action. With a powerful return spring this action initially seems awkward, but you soon get used to it.

A single, fixed speed of 4,250rpm seems adequate for most work. An 18-tooth TCT general purpose blade is standard, suitable for timber, plastics and metals. Blade diameter is 85mm with 15mm bore, producing a 1.8mm kerf.

Cutting depth is set via a locking thumb button and sliding stop at the front of the tool, which is made accurate thanks to a depth scale. This gives a respectable 26mm maximum cut in wood, so cutting nominal PAR softwood – finishing at 20mm – isn't a problem. Also provided is a diamond blade, designed for cutting ceramic tiles. Recommended depth of cut here is 9mm, with 2mm in metals.

All change

Changing the blade is a cinch: you slacken off a retaining nut with the hex key provided – stored above the baseplate – and spindle lock button. Swap the blade, retighten – left-hand thread – and that's it. A pair of heavy steel flanges clamp the blade tightly.

A basic steel rip fence is tightened with a thumbscrew. Maximum ripping width is 160mm, though at this distance it becomes harder to maintain sideways pressure. The fence shoe is rather short, so it can be difficult to get a dead straight cut. To add a longer wooden facing would entail drilling the shoe for screws, or maybe using double-sided tape. For accuracy, I found it much better to run the saw against a guide rail, which produced consistent results.

The lack of riving knife means the tool is ideal for making pocket cuts, where you plunge the saw down into a board. It's easy enough to follow a pencil line and cut freehand, though for any degree of accuracy, it's best to position the saw against a batten or guide fence. The outside of the guard is just 8mm from the blade, so you can cut pretty close to an edge. Marks above the baseplate indicate where the cut starts and finishes in regard to that of blade depth and material thickness.

Baseplate and alloy blade guard are screwed together, ensuring the blade is completely enclosed until you plunge downwards to make a cut, which increases tool safety when in use

Cutting depth is set via a locking thumb button and sliding stop located at the front of the tool

Changing the blade is a cinch: you slacken off a retaining nut with the supplied hex key – stored above the baseplate – and spindle lock button...

... then swap the blade, retighten – left-hand thread – and that's it

A basic steel rip fence is tightened with a thumbscrew

For accuracy, I found it much better to run the saw against a guide rail, with consistent results

The lack of riving knife means the tool is ideal for making pocket cuts, where you plunge the saw down into a board

A tapered plastic pipe allows a suitable extractor hose to be easily connected

The plastic pipe clips into a small dust port at the front of the baseplate and works well enough

A tapered plastic pipe allows a suitable extractor hose to be easily connected. This clips into a small dust port at the front of the baseplate and works well enough. Overall weight with battery fitted is 2.3kg.

In use

Testing the saw on 12mm plywood and MDF, 19mm OSB and 20mm softwood, I was surprised at just how clean the resulting cut was. The finish on ply was better than that produced by most circular saws and similar to that of a planed edge.

As you can lock the blade at a specific depth, the saw is particularly handy for cutting through existing floorboards. You can limit the depth, which means there's little risk of nicking pipework or cables that may be hidden under the floor.

For cutting plastic waste pipe or similar, you'll need to rotate the workpiece as blade depth is restricted to 26mm. This means it's almost impossible to achieve a dead square cut, though for plumbing work this probably isn't critical. Swapping to the diamond blade, cutting a 15mm thick limestone tile was slow, noisy and dusty work. Unsurprisingly, cutting an 8mm ceramic tile was that much easier, though you still need to be patient. The Ryobi is fine for occasional cuts, but for any quantity you'd be better off using a dedicated tile saw with water lubricant. A compact design means it can be tempting to grip the saw with just one hand, but this should be avoided. It's easy for the blade to bind, so to prevent this, ensure to always use both hands.

Conclusion

The R18MMS may be limited as a workshop saw, though it could be handy if you work with thin sheet materials for the odd DIY or renovation project. Used with a guide fence or batten, it's capable of reasonably accurate cuts. The diamond blade will cope with tiles, but don't expect to cut a large quantity. Although I didn't check the amount of cuts, sawing time generally was quite impressive with 2.0Ah battery fitted.

Ryobi is currently running one or two special offers, so you may get lucky if you decide to buy. The saw comes with a three-year warranty.

Testing the saw on 12mm plywood and MDF, 19mm OSB and 20mm softwood, I was surprised at just how clean the resulting cut was

Cutting 8mm ceramic tile is much easier, though you still need to be patient

SPECIFICATION

Power: 18V
Blade diameter: 85mm
Bore size: 15mm
Max cutting depth 90°: 26mm
No load speed: 4,250rpm
Weight without battery: 1.9kg
Supplied with: 1 × multi-purpose blade; 1 × tile blade; dust port; edge guide; wrench

- Ideal for cutting wood, metal, drywall, plastic and tile
- Innovative plunge mechanism allows you to make accurate plunge cuts in wood
- 4,250rpm no load speed allows for effortless cuts in wood up to 26mm, 2mm in metal and 9mm in tiles
- Multi-purpose blade cuts a variety of materials without the need for blade change
- Tool-less depth adjustment allows for quick and easy set up

Typical price: £129.99
Web: www.ryobitools.eu

THE VERDICT

PROS

- Quiet (sheet materials); enclosed blade; clean cuts

CONS

- Fence shoe could be longer

RATING: 4 out of 5

QUANGSHENG LUBAN NO.101 BLOCK PLANE

This delightful tool is perfect for model makers, luthiers and anyone producing small-scale, fine tolerance work, says **Phil Davy**

You can rest your forefinger on the front button or even guide it with both hands

Measuring just 87mm in length with an overall width of 32mm, this diminutive tool sits in your hand

With a cutting angle of around 45°, honing the blade edge only takes a minute or so

It's fantastic for shaping smaller items, adding chamfers or even planing end-grain

Many of us probably dream about a workshop equipped with the finest hand tools. Not everyone can afford or justify the expense of Lie-Nielsen or Veritas planes, saws, etc. but luckily, we don't necessarily need to spend a fortune these days to approach their quality. Chinese manufacturer Quangsheng make similar tools which are rather more affordable, under the Luban brand name. Workshop Heaven have been selling these products for a good few years, so it's time we revisited the brand.

This little block plane is based on the original Stanley No.101, which is crude by today's standards. It's no longer made but second-hand versions can often be found on eBay.

Bronze baby

As the body is cast from bronze, it won't rust. Measuring just 87mm in length with an overall width of 32mm, this diminutive tool sits in your hand. According to Workshop Heaven, Stanley made the original plane for children, so those with large hands may struggle…

Weighing 240g, the Luban is solid without feeling excessive. The bed is machined at a lower angle than the Stanley and supports the blade fully. At 3mm thick, the T10 carbon steel blade is heftier than you'd expect, so you're almost guaranteed zero chatter when planing. At 22mm wide it's tiny and ground at 25°, creating a cutting angle of around 45°. Honing the edge only takes a minute or so.

A notch on the back locates over a knurled steel depth adjuster, which in turn runs along a threaded rod embedded in the base. To adjust cutting depth, you simply tweak the adjuster, which moves the blade in or out. A polished bronze cap iron secures the blade and is locked by spinning a brass wheel down in front of the depth adjuster. Because of its size, the mouth is non-adjustable and around 2.5mm wide.

In use

This has to be one of the neatest block planes I've used, even though it's so tiny. You can rest your forefinger on the front button or even guide it with both hands. It's fantastic for shaping smaller items, adding chamfers, or even planing end-grain. I found the blade – hardened to RC63 – retained its edge well and is quick to dismantle and reassemble for honing. Should you need one, spare blades cost around £15.

Conclusion

Everything is beautifully engineered on this Luban – I checked the sole with a steel rule and it was almost perfect. It's the sort of tool a small, backstreet engineering shop would be proud to turn out and is almost half the price of a similar Lie-Nielsen plane. For musical instrument work, cabinetmaking or model making, you're likely to wonder how you got by without one.

If you think the No.101 is a tad too small, Quangsheng's No.102 apron plane is slightly larger and costs £69.50. This is a delightful tool, perhaps an ideal stocking filler for the woodworker who has almost everything?

Due to its size, the mouth on this plane is non-adjustable and around 2.5mm wide

SPECIFICATION

Body: Cast bronze
Blade: T10 carbon steel RC62-63
Blade width: 22mm
Sole dimensions: 87 × 32mm

Typical price: £59.50
Web: www.workshopheaven.com

THE VERDICT

PROS
- Perfect for small-scale work

CONS
- Perhaps too small for big hands?

RATING: 5 out of 5

I found the blade retained its edge well and is quick to dismantle and reassemble for honing

I checked the sole on this beautifully engineered plane with a steel rule, and it was almost perfect

JOURNEYMAN HANDCRAFTS TOOL ROLL

How do you store your edge tools? If you spend most of your time in the workshop, it's likely these are kept in a wall-mounted rack, or perhaps inside a cupboard. I tend to keep chisels in a couple of tool rolls – one an elderly canvas version, the other a cheap leather one. I've not had a problem with moisture affecting the blades, although some woodworkers suggest leather isn't the best option. A decent tool roll, however, protects the blades and is almost essential if you do site work and need to carry them about.

Journeyman Handcrafts, a small UK-based family business, specialises in creating outdoor and camping equipment from leather and canvas. There's a few tool roll designs, the most expensive being a wool-lined version with webbing straps. This one is made from 16oz cotton canvas, which seems pretty rugged, with nicely bound edges. Double stitched with a tough nylon thread that's water- and rot-resistant, it's unlikely to disintegrate in a hurry. Brass eyelets and a leather drawstring allow you to tie the roll up securely, with wood toggles at the ends. 480mm wide × 380mm high, this roll is ideal for bulky carving or green woodworking tools, such as framing chisels. With just seven pockets across the full width, six are quite capacious at about 70mm. There's a single, narrower one at the end that's 40mm wide, perfect for pencils.

As I'm not a woodcarver, I filled it with a selection of regular chisels, which are generally narrower. For protection, you could always wrap blades in bubble wrap or similar, so that each pocket would then accept a couple of tools.

The roll will accommodate tools up to about 270mm in length, with enough canvas left to fold over the ends and secure in place. Once the drawstrings are tied, everything seems pretty safe and secure.

Conclusion

Perfect for the outdoor woodworker or carver, this tool roll is nicely made and should offer maximum protection to anything stored inside.

SPECIFICATION

Dimensions: 30cm high × 40cm long

Typical price: £37.80
Web: www.classichandtools.com

THE VERDICT

PROS
- Ideal for bulkier edge tools

CONS
- Pockets may be too wide for narrow chisels

RATING: 4 out of 5

Brass eyelets and a leather drawstring allow you to tie the roll up securely, with wood toggles at the ends

As I'm not a woodcarver, I filled it with a selection of regular chisels, which are generally narrower

NAREX MARKING KNIFE

A decent marking knife is invaluable if you're regularly cutting joints using hand tools. For making dovetail joints in particular, a scribed line allows you to line up the chisel edge precisely when chopping out waste material between tails or pins. When marking out, you may get away with using a Stanley knife but this tool isn't ideal, as a slip of the blade could result in a cut finger.

Marking knife blades tend to vary in shape and size. This one from Czech brand Narex is unusual in that the blade has a recess on each edge. These act as finger depressions, allowing you to exert downwards pressure on the tip when scribing a line. A spear-point tip, with two bevels ground at about 25°, makes it easy enough to maintain the point on a sharpening stone. The steel blade is sandwiched between two pieces of what's described as rosewood, though my example looked more like walnut. Fixed securely with brass rivets and in a lacquer finish, the handle is square in section with nicely softened edges.

I tried the largest with a blade thickness of 2.5mm, but if you want something a tad slimmer, the 1.2mm and 0.75mm versions are slightly cheaper. Overall length is 150mm, weighing 45g.

Conclusion

A simple but effective tool, the tip is easy to position precisely and grip when scribing a line. If Narex chisels are anything to go by, the steel used here is top quality.

For making dovetail joints in particular, a scribed line allows you to line up the chisel edge precisely when chopping out waste material between tails or pins

SPECIFICATION

Available in three widths: 2.5mm; 1.2mm; 0.75mm
Handle: Polished rosewood with brass pins
Blade: Stainless steel – hardness 57HRc

Typical price: From £18.74
Web: www.classichandtools.com

THE VERDICT

PROS
- Comfortable to use

CONS
- Which size do you choose…

RATING: 4 out of 5

With two bevels ground at about 25°, it's easy enough to maintain the point on a sharpening stone

A simple but effective tool, the tip is easy to position precisely and grip when scribing a line


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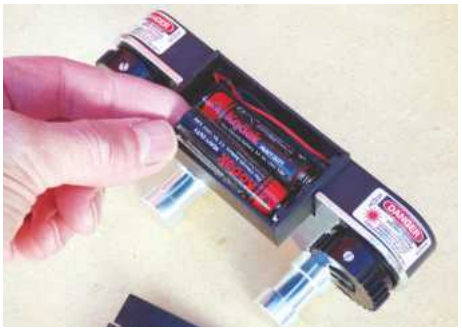
WIXEY WL133 PILLAR DRILL LASER

This neat gadget from **Wixey** saves you time and frustration when drilling – perfect for the frequent drill press user

The Jubilee clip column is plenty long enough for the biggest of machines and simple enough to tighten in place with a screwdriver

Twin plastic thumbwheels are used to adjust the laser lines vertically



Removing a cover on the compartment between thumbwheels allows you to insert two AA batteries

If you have an old drill press without a fancy laser system, you'll know that lining up timber or metalwork for precise drilling can often be somewhat frustrating. Unless you make a jig when repeat drilling is required, getting the drill bit dead centre can be a rather hit or miss affair. This American gadget is designed to fit easily to any pillar drill without interfering with its plunge action. Once set up correctly, the laser crosshairs that are projected pinpoint the exact centre of the quill, guaranteeing spot-on drilling.

Setting up

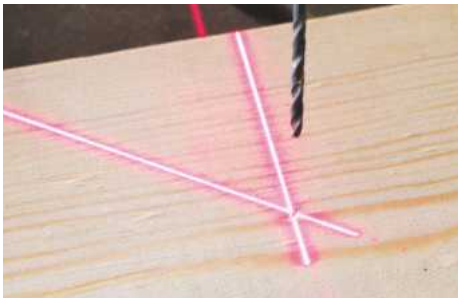
The WL133 pillar drill laser consists of a pair of posts beneath a sturdy steel plate, attached to the drill press column with a Jubilee clip. This is plenty long enough for the biggest of machines and simple enough to tighten in place with a screwdriver. Twin plastic thumbwheels are used to adjust the laser lines vertically, with inset screws for setting the 'XY' position at the point at which they cross.

Once that's done, removing a cover on the compartment between thumbwheels allows you to insert two AA batteries – not included. An on/off rocker switch activates the laser and the device is then ready to adjust. This is achieved by drawing a pencil line across a piece of accurately-planed timber, square to the edge. With the block stood on edge on the machine table, each line can then be adjusted via its respective thumbwheel until parallel to the pencil line. Before you get going, it's important to read the instructions thoroughly. You need to set up from the rear of the timber, not the front, and knowing this in advance will save time. You may want to ask someone to lend a hand here, as this can be tricky if your drill press is located in a confined space. Getting the lines parallel is important to ensure accurate drilling when moving the machine table up and down the column.

Crosshair calibration

Next, you insert a small drill bit in the chuck and lay the wood flat on the machine table, then lower the bit so that it makes an indent, which is dead centre. Finally, set the 'XY' position by adjusting the set screws with a screwdriver so that the lines intersect over the indent. Once that's done the device shouldn't require further adjustment, though it may be a good idea to check accuracy every so often.

With the block stood on edge on the machine table, each line is adjusted via its respective thumbwheel, until parallel to the pencil line



The drill bit is lowered is such a way that it makes an indent, which is dead centre

The crosshairs remain precise no matter how low or high you adjust the table or drill head. I set the laser up on my old Startrite machine with a maximum distance of about 500mm from the device to the lower table. At this distance, the crosshairs each measured a tad over 1mm wide, so don't expect the same accuracy you get with the machine table set closer. Moving the upper table to within about 200mm reduced the lines to less than 0.5mm, which is a pretty good result.

Conclusion

Like any laser device, reading the crosshairs really depends on your eyesight. If your drill press is sited near a window, you may wish to shield this when working as any laser lines are harder to see in broad daylight. That said, for the frequent drill press user, the WL133 laser is a handy workshop aid that'll save both time and frustration.

SPECIFICATION

- Thin and precise, easy to adjust crosshairs
- Mounts quickly to any drill press
- Crosshairs stay on centre at any table or workpiece height
- Rugged steel construction

Typical price: £32.54
Web: www.machine-dro.co.uk

THE VERDICT

PROS

- Saves time and frustration when drilling

CONS

- A bit awkward to set up

RATING: 4 out of 5

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D&M TOOLS

TREND T18S CORDLESS TOOLS – COMING SOON!

MANUFACTURER: Trend
D&M GUIDE PRICE: See our website

This autumn sees the launch of Trend's new T18S cordless range: power tools with long lasting Lithium-ion batteries for extended battery life; high torque performance motors to increase productivity; and advanced electronics for better power efficiency.

Designed for the rigours of a trade environment, the T18S range has been carefully created to offer the right tools for job completion. Its led by a new cordless router, which features plunge and trim bases ideal for routing edges, hinges and compact laminate worktops, etc.

The performance of any power tool range is more than just skin deep; what really matters is what's going on inside. As such, the T18S range is built around three essential elements – power, control and performance – which Trend call 'Trinity Technology'.

Trinity Technology is the perfect relationship between the 18V TXli battery platform designed for maximum life, high performance motors designed for high productivity, and the latest advanced electronics, which deliver high efficiency.

Trend's Xpert Lithium-ion 18V TXLi batteries lie at the heart of the T18S range with three available options: 2Ah Compact; 4Ah Slimline; and 5Ah Heavy Duty. Each is designed to give consistent power to T18S cordless tools, ensuring tasks can be completed for any application.

With three power options available, ready to fit to any tool within the T18S range, each can be set up with a battery tailored to suit any power tool and application. A 6Ah fast charger maximises working time, allowing you to focus on job completion.

METABO'S NEW RANGE OF 12V CORDLESS BRUSHLESS SANDERS

MANUFACTURER: Metabo
D&M GUIDE PRICE: See our website

Metabo's new range of 12V cordless sanders permit guidance near surfaces thanks to their low design. Weighing only 1kg, these cordless offerings are also ideal for extended sanding work overhead. The removable protector guards adjacent surfaces and prolongs the sanding pad's service life.

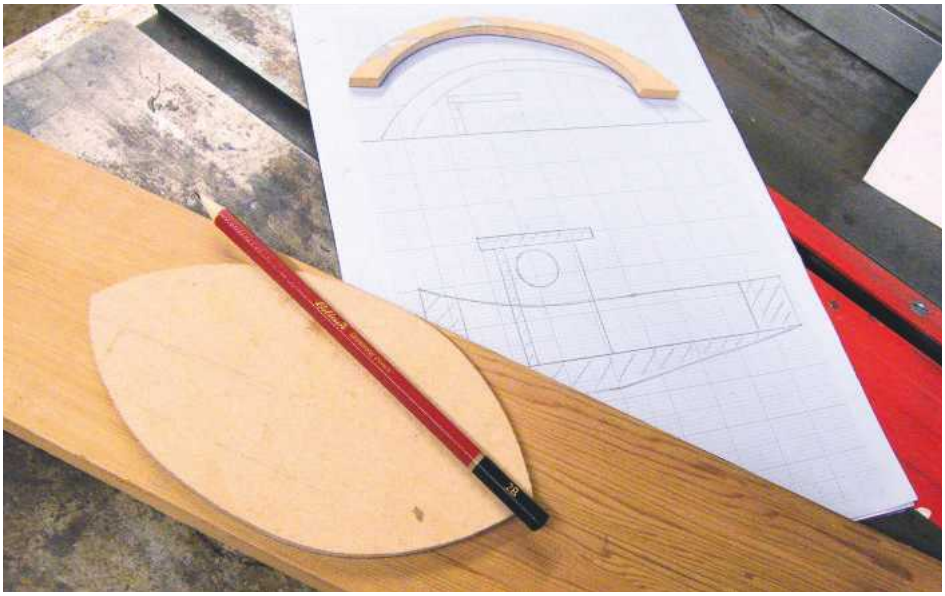
Each tool is a specialist in its class, starting with the **PowerMaxx SMA 12 BL multi sander** (1), which is particularly suited to edges and corners owing to the sanding pad's triangular shape. For sanding smaller areas, the 635204000 rectangular sanding plate – not included – can also be mounted. The **PowerMaxx SRA 12 BL orbital sander** (2) is supplied with a square sanding plate, useful for flat areas, although this can be replaced with a triangular sanding plate – not included – making it ideal for sanding corners and edges. Finally, the **PowerMaxx SXA 12-125 BL random orbital sander** (3) is designed for sanding high-grade surfaces and ensures an excellent sanding finish. All three sanders are available as body-only units, each supplied in a Metabo metaBOX.

FULL STEAM AHEAD

WW PROJECT

A perfect gift for young enquiring minds, **Peter Dunsmore** takes a tried and tested design and modifies it to make use of scrap timber and a few basic materials

Imagine making a model boat that runs on candle power and only stops when the flame is extinguished. For many years, this model has been known as a pop-pop boat owing to the sound it makes when fired up. Once primed with a little water in the boiler, the heat generated by the candle boils the water, turning it to steam, which is forced out of tubes at the rear of the vessel. This, in turn, creates a slight vacuum in the boiler, sucking up a small droplet of water and turning it to steam once again, and so the cycle is repeated.



1 Draw a plan view of the boat onto your chosen timber

2 Ensure to use a waterproof adhesive!

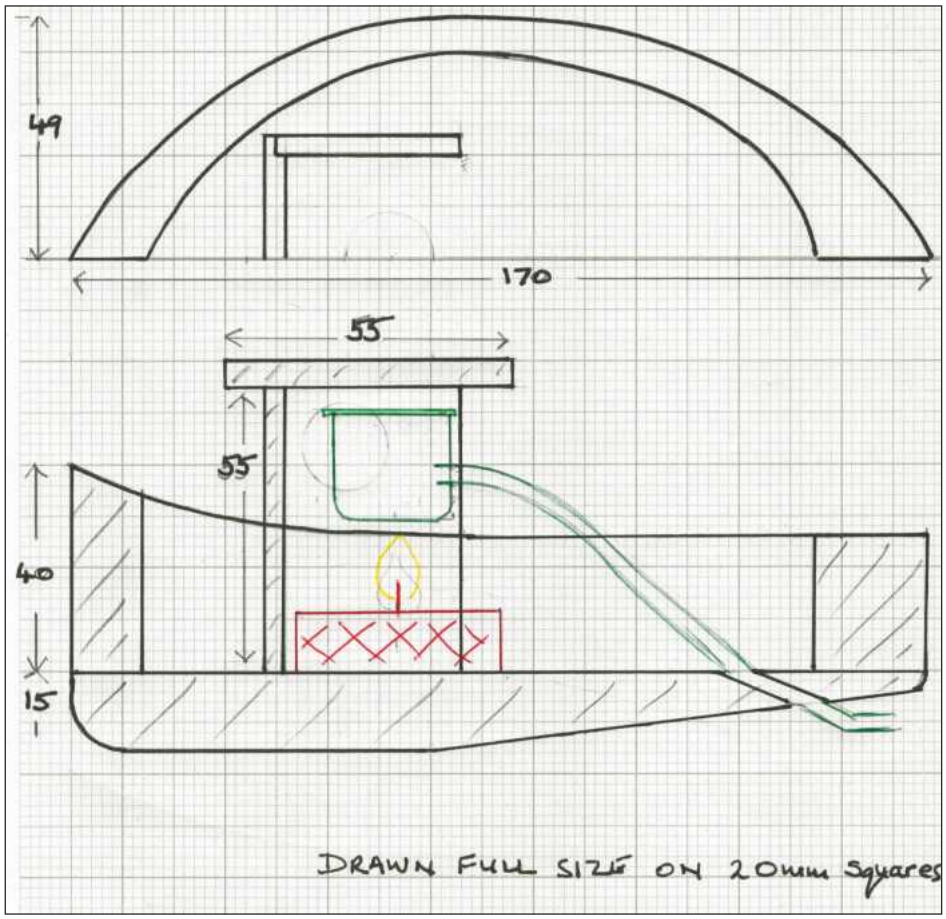


Fig.1 Pop-pop steam boat dimensions and plan

Don't expect speed and power, but seeing the boat chug along in the bath, powered by just a candle, is a wonderful sight. It's also a terrific way of getting children to investigate some key scientific principles.

The project is made from scrap timber plus some basic metalwork; it's great fun to make and easily adapted depending on tools and materials available. My local timber merchant had a 20mm thick offcut of cedar, too short for him to make use of, but owing to its light weight and the fact it can be easily cut, this was ideal. Before we get going, it's worth mentioning that most of the original boats were made from tin. As this project uses timber, however, it's important to point out that extra vigilance should be taken when operating the toy and any young children should obviously be supervised during play. Let's make a start.

MDF template

I've made a few of these boats in the past and an MDF template allows the project to be easily repeated, although the outline could simply be drawn onto a piece of card and used to mark the wood. I started by preparing three pieces of timber, each 100mm wide × 180mm long, marked a centreline along the length and drew a plan view outline onto the timber (**photo 1**). I glued two of the pieces together, spreading the adhesive thinly (**photo 2**), then clamped up and left to dry (**photo 3**). I secured the third piece in place with double-sided tape and used a marking gauge to mark the centreline down both ends (**photo 4**). I made a cardboard template of the side view, which is used to draw the side profile onto the block (**photo 5**). Next, moving to the bandsaw (**photo 6**) I cut the profile to the line drawn on the side of the block.

3 Softeners aren't required when clamping in the corners

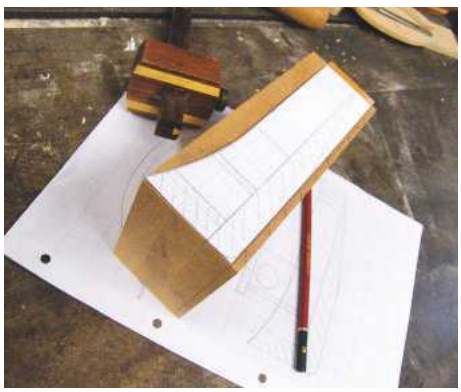
In the absence of this piece of kit, however, a hand-held fret saw can be used but isn't as efficient. Try to make the cut in one steady line and reposition the waste piece back onto the block with double-sided tape.

Make an MDF template of one half of the boat's sides (**photo 7**) and use this to draw inside and outside lines on the top of the block (**photo 8**), ensuring to align the centrelines. Don't forget to remove the floor of the hull previously held in place with double-sided tape before cutting out the middle of the boat (**photo 9**). A pilot hole will be required to let the blade into before cutting out the waste. Remove the waste piece from the top, then clean up the saw marks on the inside faces of the hull using various abrasive grits while you still have easy access (**photo 10**).

Making the floor piece

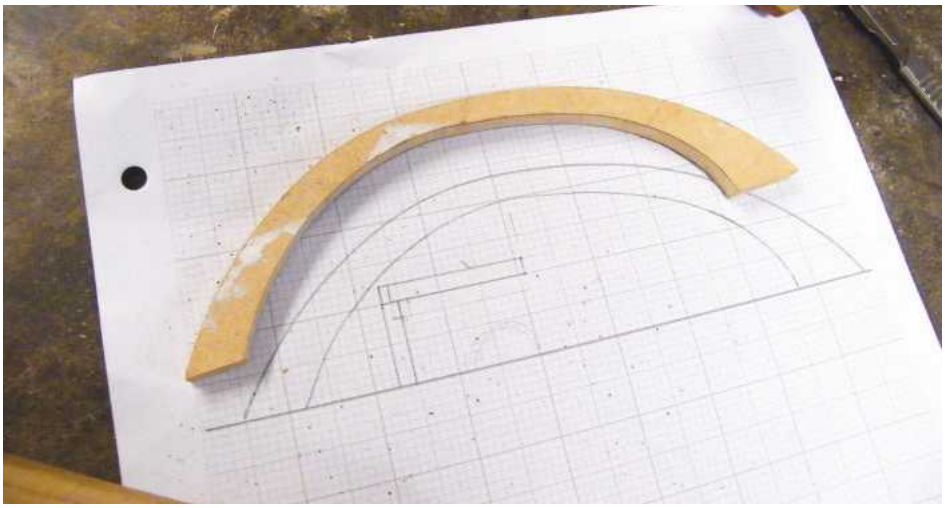
Drill two 4mm diameter holes at an angle in the floor, either side of the centreline. For a neater hole, drill through a scrap piece of wood clamped to the base, which guides the drill bit. If you're fortunate enough to own a small mortising machine, make a simple jig to secure the timber as you drill the hole (**photo 11**). Failing that, use a drill fitted with a smaller bit to first cut a pilot hole (**photo 12**). Don't forget that this is just a simple toy, which is both entertaining to make and fascinating to watch in action.

4 Mark a centreline



5 Note how the join lines up with the floor of the hull

6 Cut to the waste side of the line



7 Make a template from suitable material

8 Use the template to draw the inside and outside lines of the hull

Finishing the hull

The next step is to glue the floor to the sides and clamp in place until dry (**photo 13**). You can then cut the outline of the boat to the lines previously drawn (**photo 14**) on the top of the block, using abrasive to smooth the sides until you achieve a satisfactory finish (**photo 15**). Looking at the side view of the drawing, you'll notice that the rear of the hull's underside slopes up to an angle. Using the cardboard template as a guide, mark this in place and remove the waste using a small block plane before finishing with abrasives (**photo 16**). Finally, prise away the top waste piece secured with double-sided tape, then smooth the top edges of the sides and round the lower edges of the hull.

You should now have a nice, smooth hull, ready to be fitted out (**photo 17**).

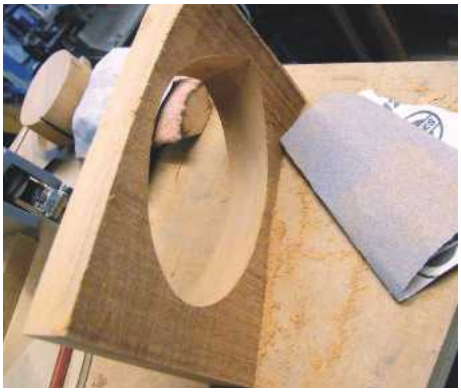
Making the cabin

The cabin can be made using a small offcut of timber around 4mm thick. The edges can be simply butt-jointed, but if you have access to a small router table, to produce a stronger joint, cut a small rebate along the edges (**photo 18**). Before gluing these together, drill some holes to represent the windows. I used 20mm and 13mm Forstner bits to cut neat holes (**photo 19**). Another source for the cabin timber is to use the otherwise redundant block previously discarded from the hull's body. To protect the inside of the cabin and make it a little more fireproof, curve some copper sheeting so that it surrounds the candle but stops just below the window line. Use Araldite or similar to hold it in place. For the cabin roof, you'll need a rectangle of 6mm timber, slightly curved at the front edge, which softens the outline a little. This, too, can then be glued in place.

The engine room

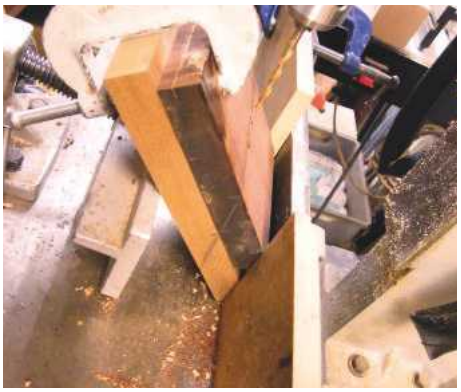
This must be the simplest of steam engine as there's no moving parts to make, but it does require a little soldering work using either a small blowtorch or soldering iron. For the actual boiler part, you need a 22mm end stop, which can be purchased from a plumbing merchant. I found that this diameter accommodates the flame

9 Remove waste from inside the block



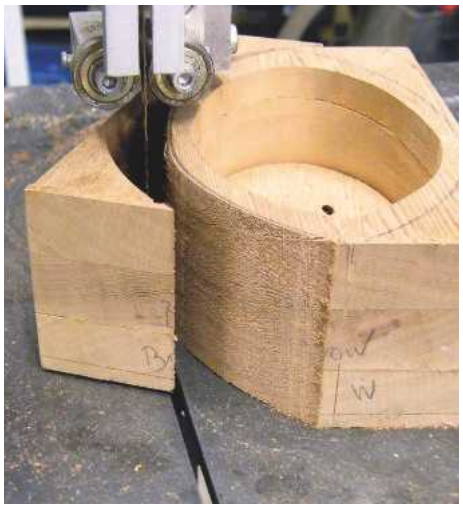
10 Use abrasives to clean up any saw marks

12 ... or drill the holes freehand if you prefer



11 A simple jig can be used to hold the timber in place...

13 Glue the floor to the side of the hull



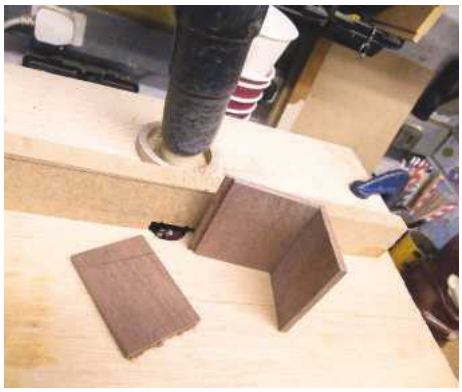
14 Cut the hull's outline...

15 ... then sand to a satisfactory finish

16 Use a small block plane to shape the base

underneath when lit whereas anything smaller would let the flame spill out to the sides. Solder the end stop to a piece of copper, which you may be lucky enough to have in your scrap box. Failing that, Hobby's – **www.hobby.uk.com** – is a good source for copper tubes and sheet as well as small sections of timber. As you probably know, the secret to successful soldering is cleanliness. Put the parts to be soldered together and scrub clean using wire wool or emery paper, then wipe with flux to remove any oxidation on the copper. Apply some heat until the reel of solder melts and is drawn into the joint by capillary action (**photo 20**). Once cooled, cut round the copper plate and file until level with the edge of the end stop. Secure this part in a vice and drill two 4mm holes a little apart from one another (**photo 21**). When drilling into metal, use a 4mm HSS drill bit set to a slow speed. You're looking for a sliding fit into the end tube; you can use a needle file to open this out a little if required. Next, the tubing needs to be bent in order to fit it satisfactorily into the boat. To make this easier, start by annealing the tube. This is a simple process but care should be taken to avoid any potential burns. Annealing is the process of heating the copper in a flame until it reaches a cherry red colour (**photo 22**), then leaving it to cool naturally. Once cooled, the metal can be easily curved to the desired shape without kinking the tube. The 300mm tube can then be cut in half and cleaned with wire wool. Apply a little flux to the openings and end of the tube, then solder the two tubes to the end cap (**photo 23**), taking suitable precautions if using a naked flame. Gripping the copper in a vice between scrap wood acts as an insulator between the copper and metal of the vice, which would otherwise take the heat away and make soldering a little more difficult. Soldering on an old house brick or similar is also a good idea. Once everything has cooled, wash any remaining flux off the metal and burnish with wire wool and metal polish. Now the tubes can easily be bent to shape, allowing them to be slid into the openings made in the floor of the hull and the boiler positioned

17 A pleasing looking hull ready for the cabin



18 A small rebate makes for a neater joint

19 Drill suitable holes using a sacrificial piece of timber to prevent breakout

20 Solder the end cap onto a piece of copper sheet

21 Ensure to use a slow drill speed when cutting metal

22 Heat the copper until you achieve a cherry red colour

23 The scrap wood acts as an insulator/heat shield on the vice

24 The tubes bend easily to the shape required

25 This little steam boat makes a fantastic gift for a youngster with an enquiring mind

just above the candle. You want to ensure the wick is situated directly underneath the centre of the boiler; a little adjustment and tweaking will allow you to achieve the correct position (**photo 24**). Just in case you were thinking brass would look better – yes it would, but brass can't be annealed and bent in the same way as copper, and copper is also far easier to work with. If the thought of soldering puts you off, just anneal a length of tubing, wrap the centre part round some dowel to make a coil, and fit into the hull in exactly the same way. Once completed, the protruding tube ends can then be trimmed level with the end of the hull.

Now on to the finishing stage, which begins with protecting the hull using your preferred method. In my case, I chose to apply three coats of polyurethane matt varnish to give a smooth finish. To obtain a better result, thin the first coat a little, allow to soak into the wood and leave to dry thoroughly before adding any further coats.

In terms of operating the boat, put a small tealight under the boiler and place the cabin into the boat. Paraffin-based candles give off a surprising amount of smoke due to incomplete combustion, so use beeswax tealights if possible – not only is the flame hotter, but it also produces less soot, thus helping to keep the boat clean. A hotter heat source will improve the performance of the boat. Firstly, prime the boiler by blowing a small amount of water up one of the tubes – before lighting the candle – then watch what happens. After a few moments, the boat will start chugging along quite nicely and continue to do so until the candle expires.

Requiring just a few hours of workshop time, this little project makes a fantastic gift for a youngster with an enquiring mind. One thing I can guarantee is that once you've made one of these wooden toys, you'll very quickly be asked to make another!

FURTHER INFORMATION

Hobby's – **www.hobby.uk.com** – for copper tubes/sheet and timber sheet material. You can also purchase other pop-pop boat plans and the required materials

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Christmas boxes

Searching for a practical wooden box, **Robin Gates** is spoilt for choice by the December 1944 issue of *The Woodworker*

Have you noticed how many people are drawn to old wooden boxes and cannot resist opening them to see what's inside? You can always tell the woodworker because they'll first rotate the box while studying the corner joints, turning it upside down to see how the bottom is attached, and only then peer inside – chiefly to examine the hinges.

Boxes have such universal appeal, from early years when the gift box provides as much amusement as the toy it contains, to old age when a memory box filled with photos, letters and curiosities unfolds the past like a map waymarked by meaningful days. In the run-up to Christmas, could there be anything more fun to make or more gratefully received than a hand-crafted box?

My acting career began and ended in December 1964 when, as a six-year-old wise man in the school nativity play, I presented the baby Jesus with a carved cigarette box my Dad had brought home from India during World War II. Certain grown-ups interpreted the scene as me offering God's soon-to-be forsaken son a Player's No.10 in consolation for what lay in store, and I was banished from the stage. Still, while searching for box-making ideas I thought I'd check the *Holy Bible* for clues to contemporary materials or construction. Our Christmas tradition of exchanging gifts is largely inspired by those wise men who brought gold, frankincense and myrrh from the East, even if it's more deeply rooted in pagan winter customs.

But while the nativity scene painted by the *New Testament* describes the wise men and gifts, there's no mention of a box, let alone hints on making one. Artists down the centuries often show a wise man holding a box, although typically contemporary with the painting as is often the case with tools.

The archaeological record provides a wealth of ideas for making wooden boxes, going all the way back to Ancient Egypt, but those unearthed from tombs of the rich and powerful are lavished with intricate decoration and rare materials. I'd prefer one of those down-to-earth iron-bound chests you see in old churches, made by hollowing a log, with a slice of tree trunk for the lid, retaining something of its forest origins. But time is too short for felling trees and forging iron in search of authenticity, what I need is feasibility, and that means inexpensive materials, ease of construction and – crucially – usefulness. Is there anything more disheartening than a receiver of gifts asking 'what's it for?'

WOODWORKER

VOL. 48 DECEMBER, 1944 No. 613

TEN USEFUL BOXES
Ideal Christmas Presents

THE sizes of the various items may be adapted to suit the material available.

(A) Cash Box.—Dovetail together and cut across for caddy lid. Bottom is rebated in and top glued down and neatly beaded. Shaped handles are screwed from inside. An inner tray could be added. 2 sides 10 ins. by 4½ ins. by ⅜ in.; 2 ends, 5½ ins. by 4½ ins. by ⅜ in.; bottom, 9¾ ins. by 5 ins. by ⅛ in.; top, 9¾ ins. by 5 ins. by ¼ in.; for 2 toes, 10½ ins. by 1½ ins. by ½ in.; for 2 handles, 3½ ins. by 2½ ins. by ⅛ in. Linings from ⅛ in.

(B) Cutlery Box.—2 ends, 9 ins. by 3½ ins. by ⅜ in.; 2 sides, 12 ins. by 2 ins. by ⅛ in.; bottom, 12½ ins. by 9½ ins. by ⅛ in.; 2 divisions, 12 ins. by 2½ ins. by ¼ in.

(C) Tea Caddy.—2 ends, 5½ ins. by 4½ ins. by ⅜ in.; 2 sides, 8 ins. by 4½ ins. by ⅜ in.; top, 8 ins. by 4½ ins., by ⅜ in (shaped to section shown); top lining, 7½ ins. by 4½ ins. by ⅛ in.; bottom, 7½ ins. by 3¾ ins. by ¼ in.; for 4 toes, 6 ins. by 1½ ins. by ¼ in.

Sides may be rebated (see X) and glue-blocked with a bead. Bottom is rebated in (see Z). Note that toes are glued on anglewise.

(D) Hall Brush or Glove Box.—2 ends, 6 ins. by 4½ ins. by ⅛ in.; 2 sides, 13 ins. by 4½ ins. by ⅛ in.; Top, 13 ins. by 6 ins. by ⅜ in.; bottom, 12¾ ins. by 5¾ ins. by ¼ in.; 2 feet, 6¾ ins. by 1¾ ins. by ⅜ in.

(E) Cigarette Box.—As the box is suitable also for playing cards, jewellery, etc., sizes may be adapted as required. On the scale diagram thicknesses are indicated for a box up to, say, 8 ins. by 5 ins. by from 2½ ins. to 5 ins. high. Thicknesses may be slightly reduced for the smaller sizes.

(F) Nail Box.—2 sides, 13 ins. by 2½ ins. by ½ in.; 2 ends, 10 ins. by 2½ ins. by ½ in; mid partition, 13 ins. by 4½ ins. by ½ in. (Note shaping and hand hole). Cross divisions as required will be about 4½ ins. by 2½ ins. by ⅛ in. Bottom, 14 ins. by 11 ins. by ¼ in. Corners will be through-dovetailed and then mid-partition housed to ends. Cross divisions must also be housed, and the bottom is screwed on. It is important to screw the mid-partition from below.

(G) Box (Kitchen) for Household Tools.—Bottom, 19 ins. by 11 ins. by ⅜ in.; 2 ends, 10½ ins. by 11½ ins. by ½ in.; 2 sides, 18 ins., by 4½ ins. by ½ in.; division, 18 ins. by 5 ins., by ½ in. Handle bar (hardwood), 18 ins. by 1½ ins. by ⅞ in. Shape the ends as shown. The handle bar is through tenoned and wedged to ends.

The construction of these is so obvious from the diagrams given overleaf that no description is necessary. The cutting lists will prove handy in preparing the material.

Stop-chamfer as indicated and soften the edges with glasspaper. A box of this kind will be left in the white.

(H) Lady's Workbox.—Sides and ends will be dovetailed and afterwards cut across to separate the caddy lid. Bottom is rebated in, a mitred plinth being added below. The piece is suitable for veneering.

(*Continued on page 191*)

TEN ATTRACTIVE BOXES WHICH CAN BE MADE FROM ODDMENTS

(A) Cash Box, 10 in. by 5½ in. by 4½ in. (B) Cutlery Box, 12 in. by 9 in. (C) Tea Caddy, 8 in. by 4½ in. by 6 in. (D) Glove or Brush Box, 13 in. by 6 in. (E) Box for Cigarettes or Cards, 5½ in. by 4 in. by 3 in. (F) Nail Box, 13 in. by 10 in. (G) Box for Household Tools, 18 in. by 11½ in. (H) Lady's Workbox, 15 in. by 9 in. by 8 in. (J) Shoe-Polishing Box Stool, 15 in. by 10½ in. by 15 in. high. (K) Stationery Box (with doors), 13 in. by 8 in. by 11 in. high

Scale Diagrams and Details are given on next page.

189

There's something extra special about a box which sets out with a definite purpose, even if that purpose changes down the years.

Old-fashioned style

I wondered if a World War II issue of *The Woodworker* might provide the answer, because at that time readers were using simple hand tools and also hard-pressed for wood. Sure enough, the December 1944 issue suggested 'Ten Useful Boxes' to make 'Ideal Christmas Presents'.

Of course, times have changed and our lives and attitudes with them. In 2021, the cigarette box might be regarded with eyebrows even more critically arched than in my 1964 nativity play, but it should serve equally for car keys and small change. Speaking of which, the cash box seems obsolete in our increasingly cashless society but would make an elegant candle box. Boxes for 'shoe polishing' and 'hall brush or gloves' would bring a touch of old-fashioned style to any home, but in this age of electronic mail the 'stationery box' could find better use housing a collection of fossils, coins or seashells. Certainly the tea caddy remains in vogue, there being so many brews on offer now, while the workbox, nail, household tools and cutlery boxes are as purposeful today as in 1944.

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SPECIFICATION

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Blade size: 250mm
Max cut 90°/45°: 73/53mm
Max depth of cut: 73mm
Blade dia: 250mm
Dimensions (L × W × H): 960 × 640 × 1,040mm

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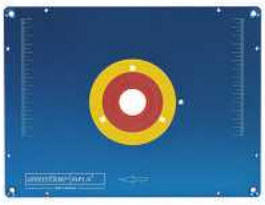

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ROCKING HORSE REBIRTH

Deciding to rejuvenate an old family friend, **Shaun Newman** rescues 'Caroline – a Collinson rocking horse – from the basement and gives her a new lease of life

It was 1985 and I'd recently started a new job in Bebington on the Wirral peninsula. I was returning home one evening and spotted a rubbish skip on the side of the road. As a keen woodworker – and I'm sure I'm not alone here – I couldn't help but peep inside and see if there were any nice scraps of timber that may be useful. To my surprise, there was what remained of a rather well-made rocking horse with its frame and some old bits of leather, a mane and some tail scraps, albeit in a dilapidated state. It was clear from the very first look that the horse had been expertly carved and the face had real charm, with just a touch of attitude. How could I resist? I didn't feel quite able to lift it all out and make off with stealth,

1 After 25 years in the basement, Caroline was in a bit of a sorry state

MATERIALS & SUPPLIES

All restoration materials for a project similar to this one are available from The Rocking Horse Shop – **www.rockinghorse.co.uk**

Collinson rocking horses – **www.collinson-rocking-horses.co.uk**

2 Sanding the frame and cleaning up

3 Polyurethane varnish provides a tough finish

4 A dovetail saw is used to cut a flat part on the broken ear

5 The back edge is cut with a small hacksaw

so I nervously approached the front door of the house outside which the skip was placed, and knocked. A rather well dressed and elderly lady answered, so I popped the question: Could I take the rocking horse home to repair it as our daughter had just passed the age of three and I felt sure she'd love it.

The owner was truly delighted that I'd taken such an interest, and that I felt confident I could do something to restore what had been an old favourite of hers. I came to learn that she'd had the rocking horse since childhood, and was pretty sure it'd been made in Liverpool, although unsure as to when or by whom.

So, I loaded the bits and pieces into the car and went home. After a few weeks and a few coats of paint, and quite frankly quite a lot of bodging, the rocking horse was ready for use, and did it get some… it was hammered! Our first daughter was followed by another and then a son, and they all played and played with 'Caroline' as the horse became nicknamed. Then, as Caroline, somewhat battered, fell out of use, she spent nearly a quarter of a century in the basement of our house without anyone giving her a second thought (**photo 1**).

Back to basics

Then a couple of years ago, our first grandchild was born. When he turned two, I felt it was time to give Caroline a second chance. By now the internet existed, so I began researching and discovered a great deal about Caroline. It turns out she was made in the early 1950s by a Liverpool firm named Collinson. The company had a proud history, beginning trading in 1836 and only closing in 1993. Luckily, although they no longer make rocking horses, enquiries are still responded to regarding former products and the website explains something of their history, not least, for example, that Queen Victoria once visited the workshop and was very impressed.

Their response to my enquiries was extremely encouraging and informative. Having taken a long look at Caroline's current state, I decided that this time I'd start virtually from scratch, restoring every single part. The Rocking Horse Shop in Fangfoss, Yorkshire, was an invaluable resource. What I needed most was a new mane and tail and some daisy head upholstery nails, all of which they were able to promptly supply, along with helpful instructions on how to fit the mane.

Undercarriage, body & tail

I began work on the undercarriage, made from pine; it had flat-sided pillars tapering from the base upwards, characteristic of Collinson horses. The job required a complete rub down with coarse, then fine abrasives (**photo 2**) followed by three coats of polyurethane varnish. The varnish brought the colour out beautifully and made me feel like I was on track to recreate something really quite special (**photo 3**). The body of the horse itself was in quite a good state, but one ear had been almost completely broken off. This needed to be sawn down to offer a flat area onto which a block could then be glued to make a new one. This was achieved using a dovetail saw (**photo 4**), followed by a small hacksaw (**photo 5**). Once the glue had cured, the ear could be re-shaped (**photo 6**), first with a Japanese carving knife (**photo 7**), then smoothed with fine abrasive (**photo 8**).

The next task was to prepare a channel into which the mane could be pushed; this is seemingly the approach favoured by The Rocking Horse Shop, and explained in a leaflet sent with the parts. The mane arrived with a strip of thick linen tape sewn along the middle and it's this tape that needed to be later pushed into the channel. The channel, around 12mm deep and wide, first needed to be prepared with a dovetail saw (**photo 9**), then finished with a sharp paring chisel (**photo 10**). In similar fashion, I prepared a hole into which the tail hank would be placed – the operation isn't as painful as it looks (**photo 11**)! The hank is bound at one end and cut off square, with a diameter of

6 A small pine block is glued into place

7 The ear is carved with a Japanese marking knife

8 Once smooth, the new ear blends in well

9 The channel for the mane is first sawn out

10 A 12mm paring chisel is used to hollow the channel to the correct depth

11 Preparing a hole into which the tail hank will be placed. Ouch!!

12 A dry fit of the tail looks a little more comfortable

around 19mm. I cut the hole to receive it to a depth of around 25mm. When the tail was dry fitted, I had a good idea of how things would begin to shape up later on (**photo 12**).

Painting the body & hooves & creating the eyes

Before any of the hair or hardware were fitted, the horse's body had to be well prepared and painted. I chose to use satin cupboard paint as it's extremely durable and gives a pleasant, even glow to the whole carcass (**photo 13**). The dappling presented more of a challenge, but luckily my wife is a competent artist and undertook the task for me. The first thing to do was to prepare a dappling stick – a length of 22mm dowel with a flat disc of sponge attached to one end. This sponge was then covered with a piece of thick cotton gauze and dipped into the paint. The dappling is created by making circles that link together in a rondel-like pattern (**photo 14**).

The eyes also represented a challenge, but a fine brush and a steady hand created a very realistic looking shape, which added enormously to the appeal of Caroline's face (**photo 15**). At the opposite end, the hooves were painted in satin enamel by Blackfriars, which seemed a good choice (**photo 16**).

Making a new saddle

Once the mane had been pushed into the channel, it had to be pinned with gimps to ensure it would remain in place. I also added a thin film of glue, as thinking back on my first attempts to attach one, I recall it pulling off very easily as our young daughter lost her balance and grasped it for support (**photo 17**).

Luckily the original leather work had survived not only the time of the original owner, but also the extensive use it'd endured from our three children. A tin of shoe polish and a bit of elbow grease brought the bridle and reins back to life (**photo 18**), but sadly the saddle was too worn to use.

I therefore set about finding enough leather to create a new one. An old handbag left by my late mother came to the rescue! It was two tone and made from two different thicknesses, which was ideal. I was able to use the thinner material to make the underpart of the saddle as well as the thicker part for the seat (**photo 19**). The daisy head nails (**photo 20**) helped to create an authentic look when the saddle was pinned into place (**photo 21**), but to get the fully upholstered look, a piece of firm foam around 6mm-thick was placed under the seat. To achieve an even appearance all over, opposite sides were alternately nailed into place – a task that reminded me of replacing the cylinder head on my 1952 Morris Minor after a gasket had blown… The bridle and other leather strips were put into place with screws and extra large drugget pins (**photo 22**). The central pin in the breastbone is 30mm long with a 16mm head.

Completing the makeover

When completing Caroline's first makeover, I found some steel stirrups in a junk shop but they proved too heavy and chipped paint off the inside edges of the legs and frame. As such, I decided to make my own from 17mm ply, which I cut out by means of a jigsaw (**photo 23**), followed by a bandsaw

13 The cupboard paint is applied

14 Dappling begins

15 Establishing the shape of the eye is tricky

16 The hooves are added

17 Pushing the mane into place

18 The leathers are cleaned up with shoe polish

19 Cutting the saddle parts from an old leather handbag

20 Daisy head upholstery nails add a touch of authenticity

21 The leather must be kept firmly in contact with the contours of the body while nailed down

22 The bridle is screwed into place

23 The stirrups' inside shape is cut out with a jigsaw

24 The bandsaw copes with the outer profile

(**photo 24**), before spraying with antique gold paint. The stirrups proved to be easily strong enough and didn't produce the damage made by the steel ones.

Once the stirrups were completed, it was time to consider putting the horse onto the underframe. Before this could be done, however, I had to strip and repaint the swing irons with satin black enamel (**photo 25**). With all components reassembled, the rocking horse restoration was now complete (**photo 26**), and our young grandson Elliot could finally have a go – as you can see, he loves Caroline (**photo 27**)!

25 The swing irons are painted with satin black enamel paint

26 The restoration is finally complete

27 Elliot enjoying his first ride

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WOODWORKER'S ENCYCLOPAEDIA PART 34

A-Z

Peter Bishop ploughs further on into the Ss, culminating in a monologue on shakes

Sawyer

Anyone who's trained to use and operate a powered saw – as well as those pit saw operators! In a conversion mill, the sawyer is a key operator. When cutting 'from the round', they'll determine where the first cut is made, which in turn influences the 'yield' produced by the log. In fully automated situations, the sawyer will have the means to flip and turn logs at will before they're cut.

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

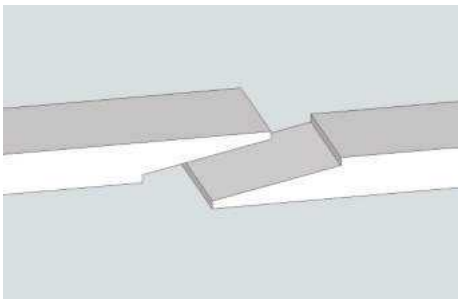
Early 20th-century sawmill, maintained in Jerome, Arizona

Scant cut

Anything considered to be slightly undersize could be called 'scant cut'. It's usually applied to re-sawn material that, say, started as 2in stuff and has been cut down, and if the two pieces finish shy of 1in, they're scant.

Scantlings

We use the word 'scantlings' to describe thin, narrow stuff. The general classification is anything under 6in wide and under 4in thick. Scantlings are produced to save wasting timber that doesn't meet standard size requirements.



A nibbed scarf joint

Scarf joints & scarfing

A 'scarf' joint is used to join two pieces in the length. A simple scarf with have matching sloped surfaces cut into the opposing ends. The more complicated ones will be designed so that they lock together.

The scarf joint used on the beams above the post is known by its French name 'trait de jupiter' or 'bolt-o-lightning' joint

Oak scotia moulding

Scotia

The 'scotia' is usually applied to a simple shape and can be of various sizes. It's a concave moulding that might be round or elliptical and often used in small sections as a finishing piece.

Set of four Veritas super hard scrapers, available from Classic Hand Tools

Scrapers

Often known as a 'cabinet scraper' this is a thin, steel plate, flat or shaped, with a burred edge. The burred edge acts as a cutting tool which, if used correctly, will scrape off a very thin shaving from your workpiece. Using a scraper, you should be able to produce a very fine surface without any of the swirls associated with hand or machine sanding. The burr is created by rubbing a round, hardened steel tool down the edge. Scrapers can be hand-held or, when straight, mounted in a tool. There's other types of scrapers too, some of which are used on a lathe. These are also flat or shaped with a simple, sharp end. They'll most likely be used in bowl work to remove the central cavity.

A scratch stock with ¼in radius beading cutter, and the resulting bead

Scratching, scratch moulds & stocks

You can create 'scratch' beads and mouldings using small, shaped pieces of steel. You start out by shaping your piece of steel, then create a simple 'stock' and fix the scratcher into it. The bead or mouldings are usually towards the edge of a piece so you'll need some sort of integral guide to hold it equidistant from the side. You then simply create the shape by rubbing the scratcher along the length where you want it to be. Like a scraper, it takes successive layers off until you're satisfied with the finish.

The six most common types of screwdriver and their accompanying screws

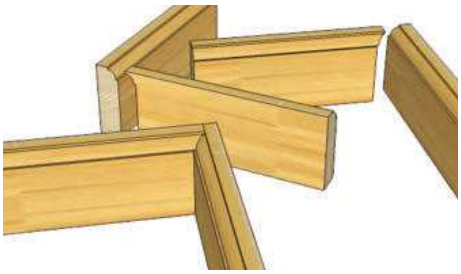
Various screwdriver heads and screws

Screws & screwdrivers

I won't dwell on this subject, albeit to say there's so many of both that a book could easily be written on the subject. Just try to pick the right one for the job in hand and use the correct driver to put away.

Scribed joints & cutters

A 'scribed joint' is a shaped shoulder of a tenon. The scribe is made to fit over a section of framing, which has a moulding already applied to it. The moulding might be quite complex or relatively simple, but to get a good joint it must be mirrored on the adjoining shoulder,



A scribed joint

or shoulders. A scribing cutter is one used in a cutting block to create the mirrored shape. Most work like this will be factory-based using dedicated machines to cut both the mortise and tenons. There are ways in which you can avoid making a scribed joint if working by hand. Part of the mould on a mortise piece can be cut away to leave a mitred corner. A matched mitre is made in the tenon piece and the two should then create a clean joint.

Many woodworkers use a scrollsaw for intricate pattern cutting

Scrollsaws

Oscillating, powered saws with narrow blades, which are designed for fine, detailed cutting.

S.E.

An abbreviation found on a suppliers listing, for example, which means 'square edged'.

Cellulose sanding sealer from Chestnut Products

Sanding sealer applied to a turned clock project mounted on the lathe

Sealer, sanding sealer

A 'sealer' is applied to your finished project before polishing. These help to seal up the grain surface so that you can achieve a much smoother finish. They may be water- or spirit-based. Water-based acrylic sealers will raise the grain more than spirit ones. You apply a sealer coat then cut it back before moving on to a finishing coat.

Seasoning hardwood

Seasoning & seasoning checks

This is the art of drying, or 'seasoning' wood; the removal of moisture, which may be air, kiln or vacuum drying. Seasoning checks are small splits on the surface of dried wood.

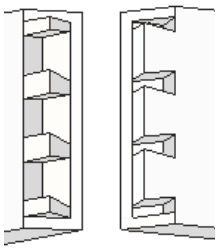
Second fix

This is a trade expression that refers to the 'second fix' of joinery after a building has been plastered. What you'll be fixing is skirtings and architraves, etc.

Secondary growth thickens the stem and roots, typically making them woody. Obstructions such as this metal post and stubs of limbs can be engulfed

Second growth

Second or secondary growth refers to the natural regeneration of woods and forests after fire, felling or any other trauma.



A secret mitred dovetail joint

Half lap dovetail

Secret joints

A secret or 'blind' joint is one that doesn't display the intricacy of the work that's hidden. The best example of this is probably a 'secret' dovetail. If made correctly, you'll end up with a superb looking joint that appears as a simple mitre joint.

Secret nailing in parquet flooring

Secret nailing

Any nails that are covered over by the following piece to be fixed can be called 'secret nailing'. Most often found in flooring where the nail heads shouldn't show.

Selects

A type of grade used in the hardwood supply chain – not 'prime' but of a reasonable quality. There are definitions of select but these tend to vary depending on country.

Axminster eight-piece nail and centre punch set

Set, nail

A nail 'set' is another name for a nail punch.

A set square is used to ensure the accuracy of layout lines and cuts made using other tools

Set square

We'll all have a number of 'set squares' on our tool rack. The basic ones will be 'set' at right angles, allowing you to square across and down the sides of a workpiece. Others will be set at various angles with the most popular being 45° for mitres. We also have combination sets, which might allow us to mark a variety of angles. I have at least three 90° angle ones – small, medium and large – along with a couple of mitre variants.

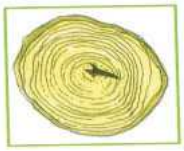
Setting out

We start 'setting out' at the beginning of a project by drawing all or, perhaps the most complex part of it, full size or to scale. The objective being a working drawing from which you can then take measurements. My setting out board is the top of a flat workbench, made from MDF. I'll draw projects out until it's full, then sand it off and start again.

Shake & shakes

A universal language applies to these defects – 'shakes' – found in wood. It doesn't matter where you are if a name is given to a shake, it's likely that everyone will understand. Most are caused during the drying process but a few others are naturally occurring. The shake, crack or break, ruptures the wood fibres, causing a gap to open up or a weakness to become apparent. Below are some of the most common examples:

- **Checks** – small surface shakes that might occur on any face;
- **Cross** – a shake that runs across the grain. A number of theories exist as to how these occur. They are sometimes called 'thunder' shakes and, if not caused during growth, may have occurred when the tree was felled;
- **Cup** – a curved opening that follows the growth ring pattern. Some might be caused by trauma during the growth of the tree or, most likely, by tensions set up during drying;
- **End** – splits emanating from the ends of a plank – short or long;
- **Falling** – or 'felling' shakes – these are cross shakes;
- **Heart** – one or more splits running from the centre – core – of the tree outwards;
- **Ring** – bigger versions of a cup shake that may or may not just about complete the circle;
- **Shatter** – long splits caused by trauma such as a lightning strike or shattering once felled;
- **Shell** – alternative name for ring or star shakes;
- **Star** – multiple heart shakes that make the cracks appear like a star;
- **Surface** – these small shakes are shorter splits in the surface of planks;
- **Wind** – caused by extreme weather conditions, such as hurricanes, for example.



Heart and star shakes

Star check, or wind shake, on tulipwood

The whipping back and forth of a trunk might fracture the fibres longitudinally.

NEXT MONTH

In part 35, Peter cracks on with the Ss, this time discussing odd and interesting terms such as shot holes, skid, slash sawn and snedding

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FLIGHT OF FANCY

Arguably the most famous plane of World War I and associated with the Red Baron, **Rick Wheaton** sets about making a push-along toy version of the 1917 Fokker DR-1 model triplane for his four-year-old relative

I've delighted in the early days of flying since childhood. I also love making things out of scrap, so when my Goddaughter's son – four-year-old Finley – wanted a toy plane for Christmas, I delved into the odds and ends box thinking a Fokker Dr-1 'Red Baron' triplane would be perfect for him, not to mention a lot of fun for me.

I used some 4mm ply, which was left over from an old cabinet; a piece of spare beech worktop; some 50 × 50mm sawn timber from a skip; and – although I had to buy these – a few lengths of dowel plus tubes of red, white and black acrylic paint. As I was making this for a very bright child, it therefore needed to be reasonably accurate, so I used a free online plan.

The plan gave no dimensions and was slightly too small, so I began by measuring everything and multiplying by 1.5 (**photo 1**). If you search online, you'll discover dozens of Fokker triplane plans – I found mine on Pinterest and it was free to download and use. Have a look for yourself and find a version you like, then play around with the dimensions to suit.

Making the wings

The Fokker's wings have a complicated detail – beautifully scalloped rear edges – but marking out is simple, and a bobbin sander is perfect for helping to achieve this (**photo 2**). Next, twirl a sheet of 400 grit abrasive into a roll and begin to sand the detail (**photo 3**). The eight struts are constructed from simple, 5mm dowelling

1 The plan I used gave no dimensions, and was slightly too small, so I began by measuring everything and multiplying by 1.5

2 A bobbin sander is perfect for creating scalloped rear edges for the wing detail

– available from any DIY store – but they must all be the same length. An easy setup for acheiving this is a bench-top bandsaw and guide (**photo 4**) – ensure to use a push stick here.

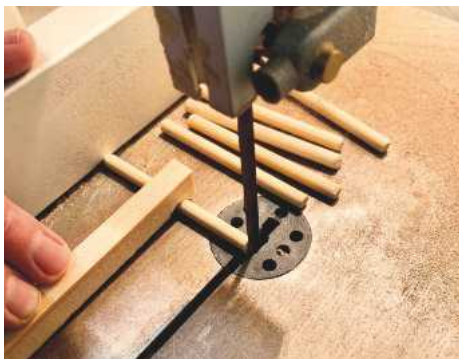
The three wings are different lengths, and interestingly, the Fokker's success was partly due to additional lift from its 'extra' wing, despite the added drag. Early designers were doubtless tormented by the power/weight/lift/drag formula – one that clearly worked well on the Fokker – and it could reach 110mph and climb to 15,000ft. This was quite an astonishing performance for 1917 – barely a decade after the Wright Brothers' first flight. Before the wings are drilled to take the struts, they need to be carefully lined up. Mark a centreline on each, lay them exactly one above the other, slightly staggered so the upper wing is ahead by a few millimetres. Next, clamp them in place then mark the hole positions – by eye to judge how far apart they should be – using a square to guarantee alignment (**photo 5**).

I'd recommend a bench drill for the next stage, or very careful hand drilling. The holes need to be vertical (**photo 6**) so that the struts line up easily. Use a 5.5mm drill for the holes; this will make fitting everything much easier. The stated diameter of dowelling is often incorrect – plus or minus 0.5mm is common – but check before drilling.

Tailplane unit

The same ply is required for these two pieces – a triangular horizontal stabiliser and small vertical fin and skid (**photo 7**). The horizontal part will sit on the flat at the end of the fuselage. Ensure to take care when gluing later, as this part must be parallel to the main wings. The fin and skid will sit in the slot you'll mark out shortly.

3 Twirl a sheet of 400 grit abrasive into a roll and begin to sand the detail

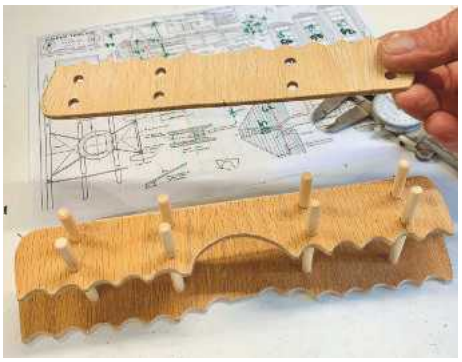


4 An easy setup for achieving this is a bench-top bandsaw and guide – ensure to use a push stick

5 Clamp the wings and mark hole positions, using a square to ensure they're in line

6 The holes need to be vertical to ensure the struts line up easily. Use a 5.5mm drill here

7 The triangular horizontal stabiliser and a small vertical fin and skid are both made from ply



8 Lay the bottom wing flat on the bench, top uppermost, and apply a drop of glue. Push a strut into each hole, then slide the middle wing down the struts

9 The fuselage is 40mm diameter at its widest and a simple job to turn...

10 ... and sand from 50 × 50mm stock mounted on a small lathe

Assembling the tri-wing unit

To assemble, lay the bottom wing flat on the bench, top uppermost, and apply a drop of glue into the holes. Push a strut into each hole, then slide the middle wing down the struts (**photo 8**). Don't glue the middle wing just yet – instead, push it down and apply a dab of glue to the ends and top 3mm of each strut. Now push the top wing over all eight struts until these are level with the surface. This is a bit fiddly, but you'll be glad you shaped a chamfer and kept the wings the correct way up – even more obviously – with the scalloped edges facing the rear. Use a slow acting glue here – regular PVA is perfect.

You should now have three wings, which are held together by eight struts. Note: the middle wing isn't glued – rather it's loose on the struts and will be glued later. Now – while the glue is wet – make any small adjustments until all looks good, and leave the wing assembly on a flat surface for a few hours until the glue sets.

11 Shape the tail area almost to a point before filing another flat, this one for the triangular stabiliser

Fuselage & undercarriage

The fuselage is 40mm diameter at its widest and a simple job to turn and sand from 50 × 50mm stock on a small lathe (**photos 9** & **10**). If preferred, you can shape by hand, but either way, it needs to be finished by filing small flats where the wide front section touches the middle and lower wings. Further sanding – using a belt or disc sander – will flatten the very front. Shape the tail area almost to a point before filing another flat, this one for the triangular stabiliser (**photo 11**). If you're using 4mm ply, mark two lines 4mm apart along this flat area (**photo 12**) and cut out using a fine saw. This slot will accept the fin and tail skid (**photo 13**). Finally, cut a hole for the pilot, ideally using an 18mm Forstner bit (**photo 14**). The pilot can be turned from a piece of scrap, or shaped using a bit of dowel, and glued in position later.

Once the wing assembly is solid, use a belt sander to sand the strut ends on the upper and lower wings and slide the fuselage into its final position between lower and middle wings – this is why you didn't glue the middle wing in place. Line everything up so it's parallel and square, and fix the middle wing in position with dabs of glue on the struts and fuselage (**photo 15**).

Most drawings – and of course the real plane – will have a delicate looking metal undercarriage, but something stronger is required here. Mark a piece of hardwood, but drill while it has a 90° end (**photo 16**), shape after it's been sawn (**photo 17**) and drill a countersunk hole for a small screw; this will fix it to the bottom wing later. 8mm dowel is required for the axle and the wheels can be cut from hardwood scrap with an 8.5mm hole (**photo 18**), which will allow them to turn freely. A couple of wire pins will hold these in place.

Propellor & guns

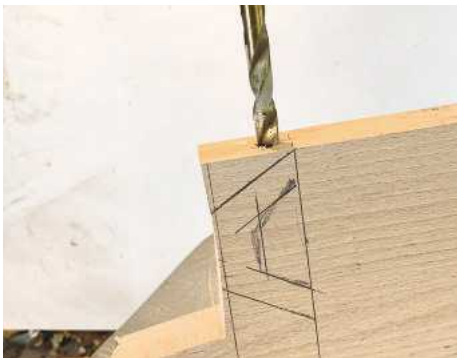
These tiny details add some realism, so it's worth taking your time over them. Mark out the propellor so it's 85mm long and drill the centre

12 If you're using 4mm ply, mark two lines 4mm apart along this flat area and cut out using a fine saw

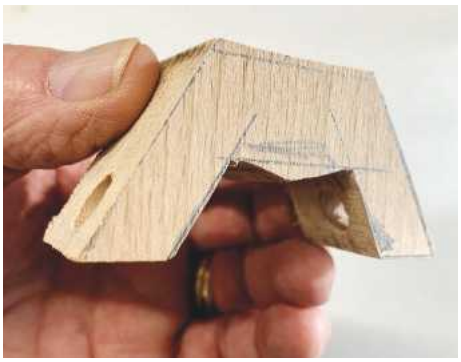
13 This slot will accept the fin and tail skid

14 Cut a hole for the pilot, ideally using an 18mm Forstner bit mounted in a pillar drill

15 Line everything up so that it's parallel and square, and fix the middle wing in position with dabs of glue on the struts and fuselage



16 Mark a piece of hardwood and drill while it has a 90° end



17 Shape once sawn and drill a countersunk hole to accept a small screw – this will be used to fix it to the bottom wing later

hole before shaping it. Put a dab or two of paint on the ends and fix in place with a small pan head screw. The DR-1 was well armed, carrying two 7.92mm Spandau machine guns; these are easily mocked-up from a few pieces of dowel (**photo 19**). In a superb technical achievement, some Fokkers had guns that were mechanically synchronised to fire through the arc of a spinning propeller!

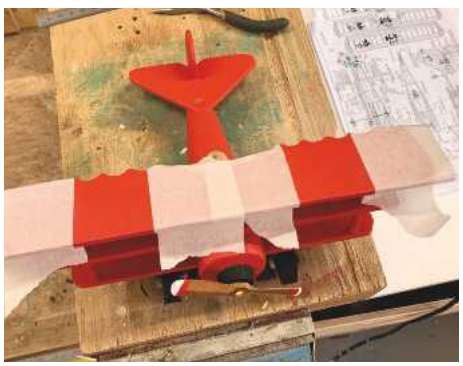
Painting & final assembly

It's easier to paint one end of the wings at a time, and swap ends once the paint has dried (**photo 20**). Later, mask up for the white areas (**photo 21**) ready to receive the black cross decoration (**photo 22**). Decals are available, but I enjoyed painting this detail by hand. When the undercarriage is dry, screw it to the fuselage through the lower wing, slide in the axle, then finally add the wheels and pins. The toy plane can then enjoy its first flight!

18 8mm dowel is required for the axle, and wheels can be cut from hardwood scrap; an 8.5mm hole ensures they turn freely

19 The two 7.92mm Spandau machine guns are easily mocked-up from a few pieces of dowel

20 It's easier to paint one end of the wings at a time, and swap ends once the paint has dried



21 Mask up for the white areas...

22 ... ready to receive the black cross decoration

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CLASSIC INSTRUMENTS **reinvented** on the lathe

Woodturner **Andrew Hall** is known for making some rather unique instruments on the lathe. Here he shares his take on a traditional cajón as well as the novel 'Bowlbro' design, based on a Dobro guitar

One of my main passions is making wood-turned instruments and learning how to play them. In this article, I'll explain how I made an unusual lap steel guitar inspired by the Dobro model, which I call a 'Bowlbro', as well as a percussion instrument based on a traditional cajón, which is explained overleaf...

Cajón

Originally from Peru, a cajón is a rectangular box-shaped percussion instrument, which can also be used as a seat. Also known as a 'beat box', it's been a great accompaniment to my cigar box guitar, fiddle, and now blues bowl.

I started by carrying out quite a lot of research, but knew that I wanted to make my version a little different from the norm, while also integrating modern technology into its design.

A friend of mine who's son owned a carpet business asked if I had any use for some semicircular birch ply carpet display stands – this gave me the initial idea for making a cajón.

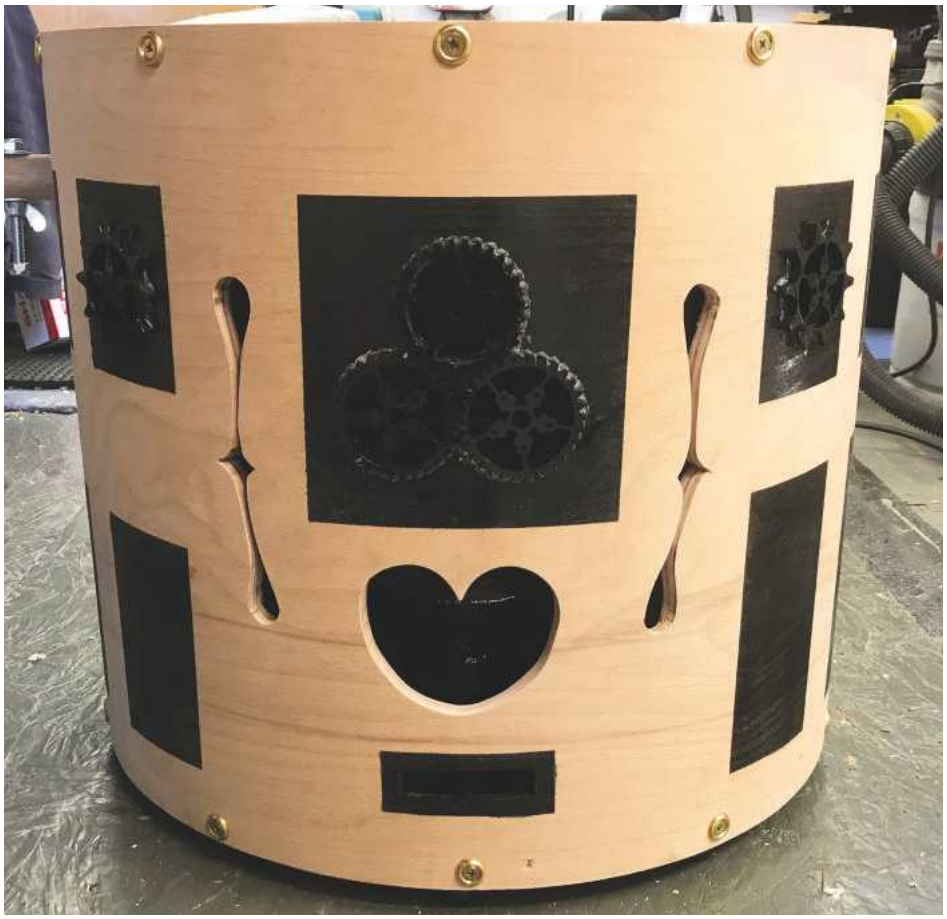
Rather than taking a design and modifying it, I basically made it up as I went along. I knew I wanted to include a snare; a piece of stretched chain link mesh, which could be controlled on/off with a lever; a slot to house my mobile phone, which has an app called Drum Beats; and a piezo pickup, which would allow it to be amplified using a bass guitar amp. I used around half a dozen birch ply semicircles, in various sizes, then began constructing my version of a cajón.

1 The starting point was a semicircle of birch ply measuring 600 × 600 × 300mm, with an 18mm thick radius

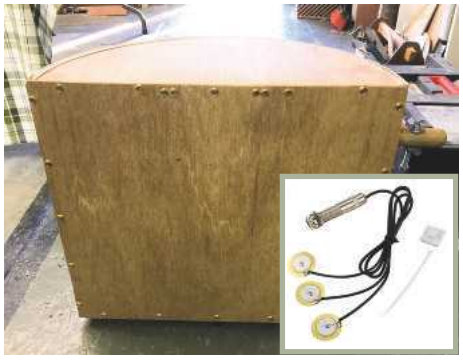
2 Next, I marked out two semicircles on a sheet of 18mm ply, for the top and bottom of the instrument

3 Using a jigsaw, I cut out these semicircles, then tried them for size

4 Using a pillar drill and 45mm bit, I drilled a series of holes to make patterns and acoustic holes. I decided to airbrush the finished piece and incorporate some decorative cogs, made for me by Paul Howard using his CNC machine. Note: I used a sacrificial semicircle of pine to prevent breakout on the inside of the cajón



5 I screwed the top and bottom to the semicircle using five 50mm screws and screw cups. I decided to mask off a few squares and, using my previously made wine box guitar template, cut out two clefs



6 Next, I screwed the back of the cajón to a frame using a piece of 3mm ply. The inset photo above shows the jack plug for a piezo pickup. I used a triple pickup – positioning one next to the snare; one next to the mobile phone slot; and one central to the back of the cajón. I used self-adhesive discs, but also secured these in place with clear silicone

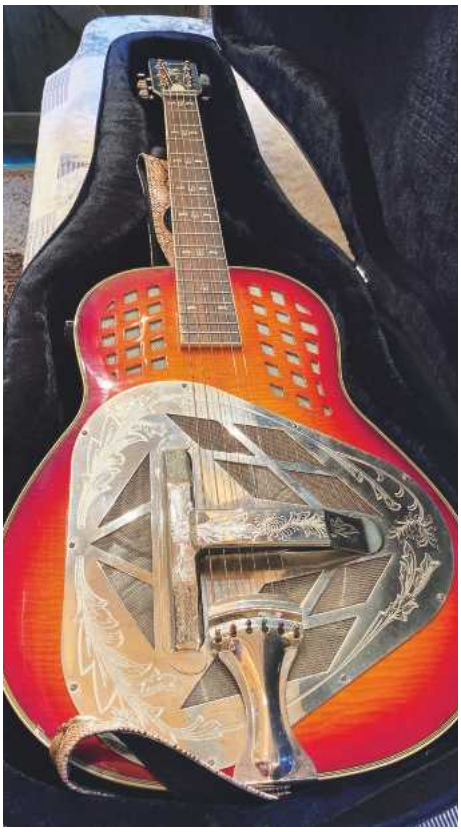
7 I positioned the snare – see inset – a third of the way up the back and made a lever using a broom shank and bolt, which would act as an on/off lever

8 Now the fun could begin! I started adding decoration using an airbrush, making it up as I went along. I used Paul's cogs as templates and the wine box clefs to create different images on the instrument. My airbrushes aren't expensive as I mainly use them for blending colour, etc. The stencils and templates are images drawn onto acetate. I have a lot of equipment left over from my teaching days, when I used an overhead projector, and during my airbrush course, I learnt how to make my own stencils, ensuring that each piece I make is unique. I fringed the outer area with black to frame everything, and used Chestnut spirit stains in various colours. In the photo above, you can see that on the underside, I added rubber door stoppers as feet; these elevate the cajón by 25mm and also create a void underneath, allowing for greater acoustics

9 I decorated the top and bottom using Paul's cogs, ensuring the workshop was well ventilated. During this stage, I also wore my Elipse respirator dust mask as well as safety glasses. After blending some rainbow colours, I positioned and taped the homemade stencils in place, blocking them out using black spirit stain

10 I added some airbrushed patterns in a random manner, including some single skull stencils. I used my Prima Stamp branding iron to brand the cajón in various places, again working to no set pattern

11 Once finished, I gave the cajón six light mist coats of Chestnut's melamine lacquer, cutting back between each using white Webrax. I also fixed eyes in place on the airbrushed skulls and owls



1 The Dobro guitar shown here inspired the making of my 'Bowlbro' version

'Bowlbro' guitar

The 'Bowlbro' is my take on a Dobro resonator, which is similar to a lap steel guitar. The Dopyera brothers originally founded the Dobro Manufacturing Company in 1928, and their guitar designs featured a single outward-facing resonator cone. The resonator model was made under the Dobro brand in Los Angeles, California, until 1935, when manufacture changed hands again.

Today, Mule and National make the Dobro, which can be played like a traditional guitar, whereas the original was designed to be played on the knee or horizontal, as with a lap steel model.

2 I started with two turned bowls in Northumberland ash, each 400mm diameter × 200mm deep, with a consistent 12.5mm wall thickness. These bowls were turned and sanded using the same method as for my blues bowl guitar. My idea was to join the two bowls together using the neck of the 'Bowlbro' as a means of attaching one to the other. Each bowl was sanded to 600 grit before applying two coats of sanding sealer, rubbing down between each with white Webrax

3 I then turned what were essentially two deep platters – 450 × 60mm diameter – for the tops. I held these in place with a 100mm faceplate and cut a 100mm diameter recess; this allowed me to reverse the material and turn it down to a consistent 6mm wall thickness. I concentrated on getting a nice ogee flow on the tops

4 Next, I cut each platter in half and removed sufficient material in order to house the 100 × 60mm neck onto the bowls and platters

5 Both the tops and bowls were given four coats of Chestnut's satin coat lacquer, then polished using the buffing mops loaded with carnauba wax. Next, I made a 'C' shaped section for the neck and using a pillar drill, made a series of holes for both decoration and acoustics. To construct, I screwed the top to the sides and capped with pink ivory buttons, which served as fret indicators, using thin brass wire for the fret lines

6 Since completing the 'Bowlbro', I've made another lap steel guitar, but this time with just one bowl, which is coloured using Chestnut's spirit stains. Both instruments are tuned to open chords G and D, so they lend well to Blues music. I've certainly had a lot of fun playing them, not to mention making them

FURTHER INFORMATION

You can watch a video of Andrew having fun playing the 'Bowlbro' and wine box guitar on his YouTube channel – **https://youtu.be/GlRs4ORQ5d4**

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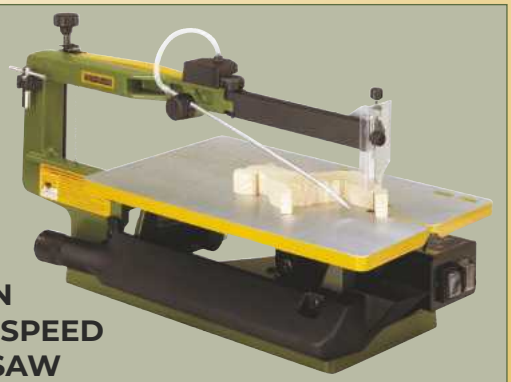

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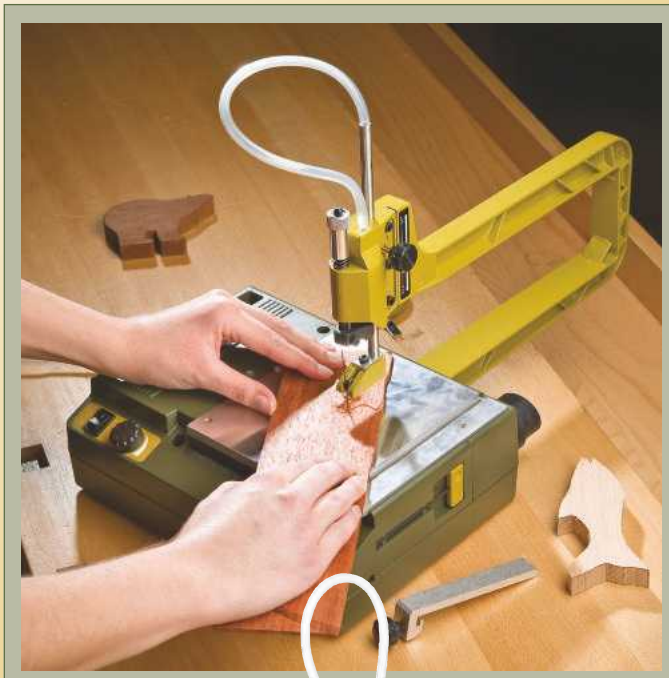

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GIFTS FROM OFFCUTS

Delving into the offcuts pile, **Robert Couldwell** makes use of scrap pieces to create a range of wonderful Christmas gifts, including a chopping board, trinket box and table lamp

Being half Scotsman and half Yorkshireman – i.e. canny – I've always kept and used timber offcuts. The pile in my workshop prompted the idea for this article – why not turn these into a selection of handmade Christmas gifts?

I've made lots of items for use around the home, many of which I've given away. All projects shown here can be made using very limited tools and machinery; the only additional purchase I had to make was a clock battery movement, but this cost less than £2.

WW PROJECT

Tealight holders

I can't claim originality for these tealight candle holders; I first saw them in a posh 'farm' shop with price tags from £45, and thought: "I could make those!" At the time, when we were regularly entertaining friends and family, making them seemed like a good idea.

The only tool you may have to buy is a 40mm Forstner bit, which costs around £6 on eBay. 50mm-thick oak worktop offcuts are ideal, but any wood more than around 25mm-thick will do. You can modify the design of this project to accommodate as many tealights as you wish.

1 A 50mm-thick oak worktop offcut is ideal, but any timber more than around 25mm-thick will do

2 Chamfer all edges, except the base, using a router or sander/abrasives

3 Mark out drilling positions for the tealight holes

4 Drill to the depth of tealight you're using

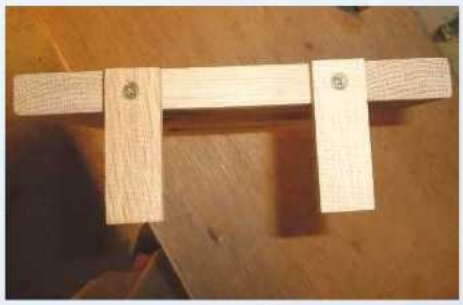
5 If using hardwood, apply a few coats of Danish oil plus a top coat of matt varnish. If softwood, apply primer and a matt colour top coat

Cookbook stand

The piece of oak I used for this project may have been slightly over-engineered, but the item could easily be made from thinner pieces of either hard- or softwood, depending on what's available. Some cookbook stand designs feature just a lower lip, but a fence is really essential for holding the book open.

1 Cut uprights, cross rails and the rear support to size. If you have some form of jointer, join uprights to the cross rails. If not, drill, screw and plug – possibly using contrasting plugs for visual effect

2 Assemble the frame with PVA glue and clamp overnight, ensuring the frame is square



3 Screw book supports to the bottom of the frame and use mitre glue to position the front fence. Use pre-drilled pilot holes for screwing to book supports

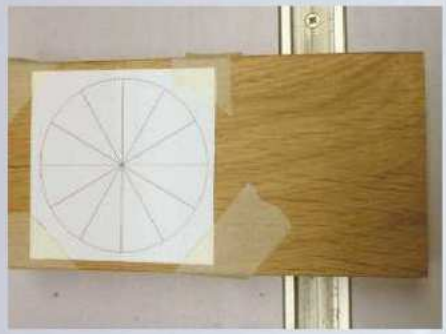
4 Add rear support with a hinge and stay on the side of the support. Finally, sand and finish with matt varnish

Clock

A clock is an excellent gift and can be so easy to make thanks to the availability of cheap battery movements. I found an oak offcut left over from our recently installed porch supports. It didn't look much and many would've discarded it, but I knew that with some sanding it'd come up a treat. The size of offcut determined the dimensions of my clock, but thanks to those movements, you can make yours as big or as small as you like.

1 Cut a blank for the main body of the clock followed by contrasting wood for the base and head

2 Chamfer the edges of your three clock components using a router or abrasives



3 Download a clock face template online and adjust the size to suit. Tape to face of clock body

4 Centre punch for the centre hole and hour points. Drill a centre hole right through and to 5mm for the hour spots

5 Turn over and insert movement shaft into the hole and mark around the movement

6 Use a Forstner bit to drill out a recess for the movement, then clean up using a chisel

7 Cut the brass rod into 6mm pieces

8 Insert brass rod pieces into the hour holes and gently hammer home. Carefully sand the face

9 Apply Danish oil and allow to dry overnight, then apply two coats of matt varnish the next day. Finally, insert movement, tighten nut on clock face, and fix hands in place

Trinket box

I've always liked antique boxes such as tea caddies, sewing boxes and writing slopes, so I thought I'd make my own trinket box from offcuts – in this case, pieces of wood left behind by previous owners, found in the rafters of our garage. The timber used is oak, probably around 70-years-old, and correctly seasoned. Obviously you can make a box from other types of hard- or softwoods, and the size can be adjusted to suit your preferences.

1 Decide on the length and width of your box. Set the mitre saw at 45° and cut the first mitre. Turn the wood over, place on mitre saw in the correct position, then clamp a square piece of wood to the saw so it's against the first mitre cut. Now cut the second mitre. With the wood clamped in place, set the saw to make the second box side so it's exactly the same length as the first; this is essential to ensure the box is square. Repeat for the box ends, resetting the clamped wood appropriately

2 I used 5mm plywood offcuts for the base. Rout the sides and ends of the box to accommodate the plywood. This can be done using a rebate plane

Chopping board

I first started making chopping boards once I'd bought a router table and after our kitchen had been refitted, as there was some 50mm-thick oak worktop left over. I'd bought my wife a chopping board from a local cabinetmaker's open day some years earlier, and used that as a template.

If you don't already have left over stock, pop along to your local kitchen fitters who can probably help. Also keep an eye on kitchen refits in your area as an old kitchen dumped in a skip outside can often bear fruit. I recently saw an old oak worktop, complete with cut-out for a sink, standing outside a house and asked the owner if I could have it. He was delighted to get rid of it, so I returned home and cut it into useful pieces, which when machined, sanded and oiled, looked like new.

You really don't need a lot of complicated machinery to make a chopping board – a hand saw and some abrasives will do the job – but using a chop saw and router will make this a lot quicker and easier. I've found these chopping boards make welcome gifts and I try to ensure each is different. The routed edges can be varied – the most traditional is Roman ogee against the simpler rounded over or chamfer, which I favour. For a bread board, extra channels can be routed for crumbs.

For a really premium feel, a belt-leather handle – available from eBay – can be fitted with stainless steel bolts screwed into threaded inserts. Alternatively, rope can also be used.

1 Create a blank to your preferred size

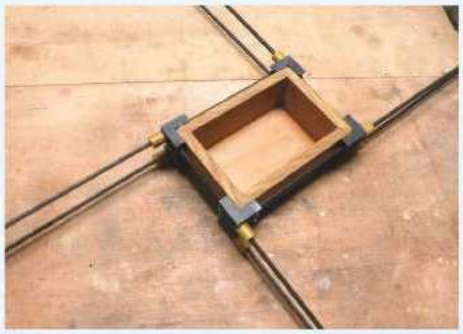
2 Rout or sand a chamfer on the top edge

3 If you have a router, rout hand-holds in the lower ends

4 Sand down to 400 grit using a random orbit sander

5 Finish with several coats of food-safe Danish oil using wire wool to apply

6 Belt-leather can be used for the handle, or rope if preferred



3 Clamp the box having smeared PVA glue onto every other mitre, then glue the base in position. Check to ensure the box is square

4 Carefully measure a piece of wood and cut to size for the top. As a rank amateur, I'm not up to precision fitting of hinges so plumped for a drop-in top. Measure the thickness of the sides and set a ¾in straight router cutter and rout all round. You can also use a rebate plane if you wish

5 I had some leather left over from another project, so cut an oblong to drop into the box. You could also line the sides or paint the box interior if desired

Table lamp

The body of this lamp is the third project I've made using a left over piece of oak, which originally formed part of a breakfast bar made by a local joiner. When no longer required, it was machined to become the legs of two bar chairs I made – see August 2019 issue – and there were a couple of spare 'legs' remaining. If you intend to give away or sell your lamps, you must have them PAT tested – your friendly local electrician will be able to do this for you quite cheaply.

1 Cut the lamp body to length and two base components to size. Drill a hole through the lamp body, which is sized to suit the cable you're using. If you have a pillar drill, then all well and good, but if not, clamp the lamp body horizontally and use a mains or battery drill to make the hole, checking to ensure the bit doesn't 'wander' off course

2 Drill holes through the base components so they're large enough to allow the cable to curve through to the horizontal hole drilled in the lower base

3 Drill four pilot holes to fix the base components together and countersink to ensure the heads aren't proud. Also drill and countersink pilot holes in the upper base to fix to the lamp body. Before screwing, use a little mitre glue to position a smaller piece to the body, then fix in place. Screw the lower base to the upper base

4 Fix a threaded brass mounting to the top of the lamp body and fix a switched bulb holder to the brass mounting, then wire up

5 As the lamp is likely to be handled, I used matt varnish instead of – or on top of – the oil. If using softwood, a matt water-based paint can be used effectively

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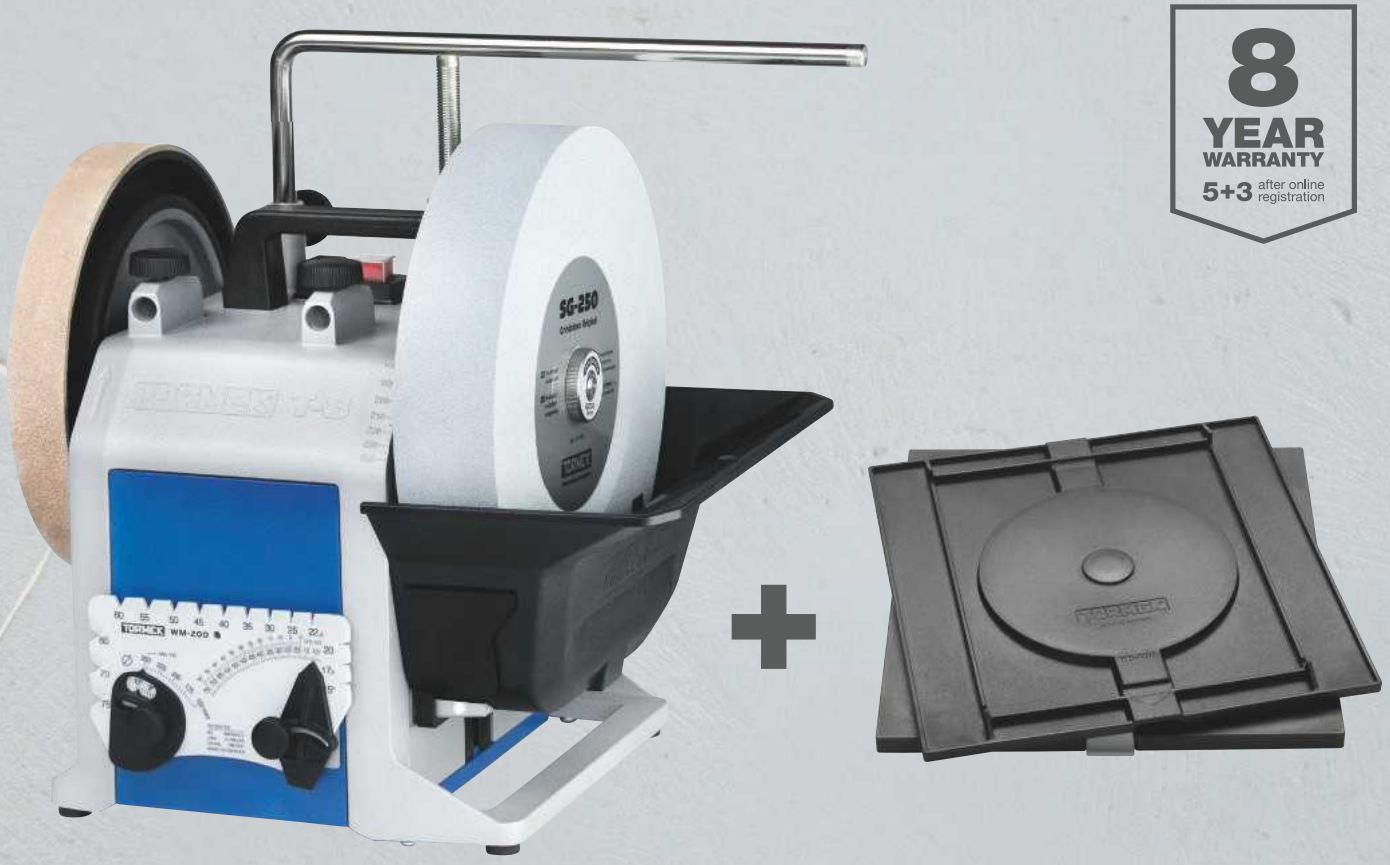

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WW PROFILE

When music meets wood

Combining his love of music and furniture making, **Norman Mackay** creates truly bespoke pieces that hit all the right notes

The headline above may leave some readers pondering the consequences of such, but the answer to this quandary lies with Scottish musician, composer and furniture maker, Norman Mackay.

Combining traditional and contemporary elements, Norman's work, in his own words, crosses between the Scottish and European influences of his compositions to his woodwork and furniture making. Aiming to best display and exploit wood's natural elements, he merges style with innovation.

Fusing a love of music with a penchant for woodworking may not seem like a new

Norman and his 'Accordion Coffee Table'

Photographs by **foto.scot**, unless otherwise stated

Elm wardrobe. The stripes at the top are made using various offcuts, which are glued together. "It's also a good way of using up bits of scrap wood," says Norman

Chest of drawers in Scottish elm

concept, and surely other designer-makers, past and present, have cited similar sources of inspiration, but Norman undoubtedly treads his own path – after all, it's not every day you see a coffee table that incorporates the workings of an accordian, and actually plays a tune!

As well as creating bespoke items of furniture, Norman is also a highly respected Scottish musician, successful composer and celebrated accordionist, and his expertise in all of these areas blend together perfectly to create a wonderful melting pot of creativity and inventiveness.

Norman has a definite skill when it comes to capturing a raw material's organic nature, and closer inspection of his work reveals further details and flourishes that really are ingenious. Each piece of furniture Norman makes is unique in its own right – these are heirloom works of art intended to be treasured and admired for generations to come. Looking at the 'Dunworth Dresser', for example, you can't help but smile, such is his ability to imbue a great deal of personality and character into each piece of furniture he creates.

The 'Dunworth Dresser'

Background

It wasn't surprising to discover that Norman's interest in wood and the process of furniture creation took hold from a young age. He explains that growing up on a farm near Cawdor, Nairnshire, he always dabbled with joinery but it was furniture making that really piqued his interest: "I used to occasionally meet furniture makers and think, 'I'd love to do that', and would go and search for furniture making courses online," he says. "One day, I happened to come across the Chippendale School of Furniture, in East Lothian. It looked perfect, and was only 20 miles from Edinburgh, which is where I was living at the time."

He arranged a meeting with founder Anselm Fraser, who was also School Principal at the time. Norman was impressed and excited by the School's bustling woodworking community, which continues to grow, and he consequently signed up to the Professional Long Course. "It was a very intensive nine months," he recalls. "We were in the workshop for 50 hours most weeks and I left weekends free for gigs with the band." Despite the fact the course was very full on, not to mention a very steep learning curve, completing it in this time frame worked perfectly for Norman.

An introduction to key woodworking techniques, learning and practising them, then choosing certain areas in which to specialise and develop, saw Norman's skillset grow and grow. When it came to graduation, he emerged as a fully fledged furniture maker, going on to set up his own furniture making business, 'Woodeye Furniture', in 2010, operating from workshop incubation space at the School.

The 'Woodeye Piano'

Describing his work as fusing "traditional cabinetmaking with modern technology and

Desk and chair in Scottish elm

TV cabinet in Scottish elm

innovative, contemporary design," I was heartened to learn that doing so was purely a random idea hatched in Norman's brain, albeit one that's undeniably brilliant. "I just wondered if I could incorporate an accordion into a piece of furniture" he says, "then I thought about the possibilities of attaching a drawer to each end of the bellows, and putting the whole mechanism into a coffee table. The internal workings are placed inside the table and when the drawers are opened or closed, the accordion plays the chords of *Amen*!" He also investigated possible ways of constructing the piece, and eventually found time to build it.

Since then, despite being faced with a healthily full commission order book and busily working on various musical compositions, Norman completed his 'Woodeye Piano' project in December 2019. Doing so involved stripping away the casework on an existing upright piano and redesigning and rebuilding it in Scottish elm echoing his signature 'chunky' style. As if this wasn't impressive enough, the piano was also used in one of Norman's recording projects – *The Inventor* – an album of compositional works written and composed by Norman himself, featuring Scottish pianist Phil Alexander playing the Woodeye Piano, which perfectly showcases this incredible woodworking project.

Norman's long-term aim is to create a musical furniture exhibition, which he'll work on piece by piece as and when time permits. We can't wait to see which instrument he chooses to reinvent next, the end result having received the 'Woodeye' treatment.

The Workshop of Tim Stead

A defining experience for Norman, and one which contributed to him discovering a unique furniture making style, was during a visit to The Workshop of Tim Stead, a furniture maker whose patrons included galleries, castles, cathedrals and the Pope. Working from the Scottish Borders, Tim's projects ranged from high art to public seating, and he was also known to combine the two. Largely unrecognised by the English art world, Tim's work nevertheless sits in thousands of homes throughout Europe.

Norman recalls being particularly impressed by the kitchen, which he describes as "amazing and completely mad, with every surface covered in beautiful wood." While a big fan of Tim's style of work, Norman finds himself inspired by the surroundings in which he's working, be it nature, trees, woodworkers, musicians or designers. He loves watching footage of masters at work, such as the great Sam Maloof, and finds their furniture making processes fascinating.

Of course, having sprawling and evocative Scottish countryside on the door step also positively informs Norman's work, and he confirms that living in rural East Lothian gives him the space he needs to get away from everything and just create furniture. "I always find that while working on a furniture commission, I end up being much more creative with my music, too. I rarely listen to music in the workshop; I usually take advantage of the quiet space to ponder new musical ideas." Norman paints a wonderful picture of writing manuscript on pieces of wood and "whistling ideas into his phone," getting the accordion out of its case as soon as he arrives home to ensure these great ideas are given the opportunity to be translated into future material.

Going back to his love of working with the natural elements of wood, Norman finds himself drawn towards species with burrs,

Norman with his incredible 'Woodeye Piano', in Scottish elm

The Woodeye Piano project involved stripping away the casework on an existing piano, redesigning and rebuilding it using Scottish elm, in Norman's signature style

such as oak and elm, using these natural characteristics to great effect, adding curves and patterns to his builds. From plank to finished piece, this process is very organic.

From inception to completion

As much as he enjoys working on each commission he receives, Norman can't help but admit that, where possible, he prefers working to his own design: "For me, that's the whole point of creating something," he says. When he is working to a brief, however, Norman must ensure he has a very clear idea as to how the piece will be executed from start to finish. This involves a personal touch in terms of discussing ideas with the client and having a shared vision, also visiting the space in which the piece is destined to go. Communication is key throughout to ensure the client's needs and wants are catered for and fully realised.

Once 3D drawings of the piece have been created, raw materials sourced and making begins, Norman likes to involve the client, sharing progress photos and giving them a better idea of the entire process. "I think this is important as a lot of people have difficulty understanding how it actually works; they're used to instant purchases and find it hard to comprehend why it takes so long." Once they realise that Norman is literally starting from just a stack of rough planks, they begin to understand just how much work is involved. Each piece Norman makes typically takes him around 80-100 hours to complete, but if there's a lot of curves, this can easily equate to an extra 40-50 hours on top of this.

Seeing every item he makes as a functional piece of art which the owner will have for life, Norman admits that when working on a new design, he finds it quite amazing to think that over 100 years from now, somebody, somewhere will have his work in their home, and still be opening and closing the drawers and doors.

Workshop safety

In terms of his favoured furniture making techniques and processes, Norman is keen to utilise whatever is available. He explains that being a musician, workshop safety is therefore paramount: "The most important thing is to ensure I don't accidentally put my fingers near any dangerous blades. I always consider my safety in the workshop," he says. When it comes to working with big machines, push sticks are always used, as well as necessary PPE – eye and ear defenders, gloves and dust mask – in fact, every safety prop Norman can possibly lay his hands on.

From a small business perspective, and given the fact furniture making is just one facet of his overall career, time allocation and management of this is therefore something Norman has to think about very carefully. And while he does enjoy using hand tools, machines are essential as they make all the necessary processes much faster: "If you're going to get anywhere with a woodworking business, you just can't keep up to speed using hand tools alone," he explains.

Looking at the future of the furniture making industry, Norman is supportive of the small business model, and as he rightly says: "You get a much better service and product from a small business run by someone who's actually interested in their job and customers," which is an ethos he very much subscribes to.

.

An 'evolutionary process'

Norman is very fortunate in that his chosen career allows him to fulfil two main passions – music and making wooden furniture – and he plans to continue developing both as much as possible. Having the ability and freedom to move between both is hugely important to Norman, and as demonstrated here, the two mediums complement each other perfectly.

While Norman's style of furniture making is very much unique to him, the end result is ultimately dictated, and strongly driven, by the raw material, and how he chooses to complement and incorporate character in the form of natural flaws and quirks. Norman describes this is an "evolutionary process," whereby the shapes and grain of the wood inform the making process, allowing him to use these to best advantage, and showcase his work around them.

There's an otherworldly charm to Norman's work that's difficult to describe – something approaching whimsical and magical. Combined with the addition of unique musical elements and his signature style, Norman's workshop sounds like an incredibly fun place to be.

Photograph by **Tony Marsh**

Bed in Scottish elm

Norman and his band playing at The Caves, in Edinburgh's Old Town

Norman Mackay – Scottish accordionist, composer and furniture maker

FURTHER INFORMATION

You can listen to *The Inventor* (solo piano) single – featuring Phil Alexander playing the Woodeye Piano – on Norman's website, or search for it on Spotify

For more information on Woodeye Furniture, see **www.woodeyefurniture.co.uk**

The Workshop of Tim Stead – **www.timsteadfurniture.co.uk**

Norman's amazing Edinburgh-based Ceilidh rock band – **www.ceilidhexperience.com**

LETTERS

★LETTER OF THE MONTH

NEWEL POST & HANDRAIL DILEMMA

Hi Tegan,
I wonder if any readers can help me find the answer to how a handrail in my house was made. The handrail itself is cut from a baulk about 2.15m (7ft) long × 70mm (2¾in) wide × 54mm (2⅛in) deep. The newel post turned from 90mm (3½in) square, both mahogany, presumably from Honduras or Cuba, with ebony insert in top.

Now, here's the problem: how was the joint between the rail and post marked out and cut? The rail line to my Suffolk town opened in 1847 and the house was built in around 1853, so, again presumably, the timber arrived in plank from London Docks. The rail ripped by hand along its length, bearing in mind the curve at each end, and the profile shaped with moulding planes. The post turned, no electricity then, but mahogany on a pole-lathe? A couple of water mills in the town, but...?

And that joint. A joiner friend of mine said the whole staircase would have been assembled first in a workshop rather than on site. Helpful, but not by much.

So, you're given the handrail and told to cut a hollow joint into the end-grain, concave both vertically and horizontally, which would exactly, and I do mean exactly, fit the knob.

From above – cap of newel post with ebony insert

From the side – note precise joint line

Overall view, giving some idea of the skill required

And what kind of interior attachment would there be? Do any readers have any idea as to how this joint would have been marked out and cut? Regards, **Peter Scaife**

Hi Peter, I'm sure our knowledgeable readers will be able to shed some light on this conundrum and offer some possible explanations. Who knows, we may even be able to solve the dilemma altogether! If anyone reading this has any information that may prove helpful to Peter, please email me using the usual address. Thanks! Best wishes, **Tegan**

★STAR LETTER ERRATUM

In the November 2021 issue, our star letter from Frank Wiggett, 'A life in woodworking' unfortunately referenced an incorrect date. The project he undertook with sixth formers was to recreate the X frame chairs for the Queen's *Coronation* in 1953, not the 1977 *Silver Jubilee*, as printed. Thank you to Catherine Wiggett for spotting this error and apologies again for the mix-up

Frank and colleagues working on X frame chairs for the Queen's 1953 Coronation

CUTTING & MARKING GAUGE MIX-UP

Dear Tegan,
May I first congratulate you and the team on continuing to produce an excellent magazine even through the past two difficult years. I was saddened, however, to see in John Bullar's article on choosing and using bench planes (November 2021 issue), on page 41, photo 15, the tool incorrectly identified as a marking gauge. It definitely isn't as labelled and is actually a cutting gauge due to the presence of a brass wedge holding the blade. The photo also shows incorrect use of the cutting gauge as the blade is designed to cut the fibres across the timber's grain, and in the example shown, has a tendency to follow the grain particularly when working along it.

As a retired teacher, having recommended the magazine to many former students, I feel that we must always try to identify correct, safe and good practice in the use of both hand and machine tools. Once again, thank you for such an excellent magazine. Regards, **Andrew Goode**

Hi Andrew, firstly, thank you for your kind comments regarding the magazine, and please accept my apologies for this error creeping in despite the article being checked. It's an unfortunate mix up and demonstrates the importance of cross-checking. Thank you for bringing this to our attention and for allowing us to clarify the different uses of both tools. We do take reader feedback very seriously and endeavour to deliver informative content to our readership. We very much agree that identifying correct, safe and good woodworking practice is of utmost importance. Best wishes, **Tegan**

Cutting gauges are similar to marking gauges but have a small blade that's held in place with a brass wedge, instead of a pin

THE RISE OF HAND TOOL WOODWORKING

Hi, Tegan,
Just a quick note to express my appreciation of this month's magazine (November 2021 issue). It was very good to receive it as, to be honest, I'd started to feel that the title's development over recent months had rather left me behind – some amazing work featured but much of it quite beyond my level, not to mention facilities. This month, however, there were a good range of features that would appeal to home woodworkers like me and could be made with relatively modest kit. Incidentally, I do believe that with a combination of rising energy prices and environmental concerns, pollution-free hand tool woodworking could be of increasing interest, but perhaps that's a separate topic!

It was good to see John Bullar's very informative article on hand planes – an aspect of woodworking I especially love. My only comment, relating to the part on bevel-up planes, is that a little more exploration of the advantages in terms of easily raising the effective pitch to tame wild grain would have been helpful. I have a Veritas bevel-up jack honed to an outrageously steep bevel, and I haven't yet found a timber it can't finish beautifully. Overall, though, I really enjoyed this edition. Thank you. Kindest regards, **Michael Forster**

Hi Michael, it's great to hear you enjoyed our November issue. I'm glad you found the majority of content approachable this time round and that much appealed to your level of experience. It's good to know this and while we do our best to cater for as wide a skill range as possible, unfortunately we don't always get it right. As we're now on the last issue of 2021, I feel this is a good time to take a step back and assess each issue in terms of content and ask ourselves whether we've managed to deliver a fair and even mix. I do hope you continue to enjoy the magazine in 2022. Best wishes, **Tegan**

SUM MISTAKE, SURELY?

Dear Tegan,
Peter Bishop appears to have got his sums back to front in part 32 of the 'woodworker's encyclopaedia' – November 2021 issue. He declares: "A small circular saw blade fitted to the same arbor as a larger one will have a faster peripheral speed." I'm afraid the reverse is true. A larger saw will always have a faster rim speed than a smaller. By way of example, consider the hour hand of a watch. It'll make two complete revolutions in 24 hours, so if the watch is large – say 2in across – the tip of the hand will travel, at most, a little over 1ft in that time – twice π x 2, or about 12in. But if the watch is the size of the Earth – some 8,000 miles across – the tip will cover around 48,000 miles in a day, which is 2,000mph, or almost three times the speed of sound.
Regards, **Tony 'Bodger' Scott**

Dear Tegan,
Reading this month's 'woodworker's encyclopaedia', I'm concerned by two confusing aspects of the explanation on circular saws. The specification is misleading, or at least, I may be missing something – should there not be a decimal point between the 4 and 0 and similarly the 1 and 5, as these refer to blade thickness/kerf width.

The second issue is the statement that "a small circular saw blade fitted to the same arbor as a larger one will have a faster peripheral speed." If the diameters are taken as per the two examples, by calculation, a point on the circumference of the 185mm diameter blade rotating at 1,000rpm will travel 581m per minute, while a point on the smaller blade, at 85mm diameter, will only travel 267m per minute. To increase the peripheral speed of the smaller blade, the arbor would have to be speeded up quite considerably. Breakfast time has proved quite interesting this month!
Regards, **Andrew Goode**

Hello to you both, and well spotted – I didn't! You eagle-eyed chaps are correct about the peripheral speed, although I'm unsure as to the specification of the two blades: 4mm is probably right for the first one, but 1.5mm is much too thin for the second, although this may refer to 20tpi. We'll have to double-check these in future. Regarding the rim speed, I agree, and have to put this oversight down to age! Kind regards, **Peter Bishop**

WRITE & WIN!

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

NEW FLEXIBLE CURVE ROUTING GUIDE TEMPLATE ACCESSORY

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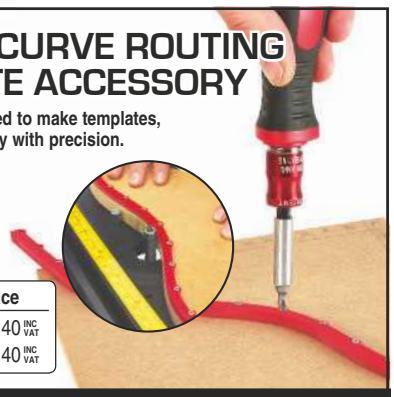

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READERS' HINTS & TIPS

AXMINSTER TOOLS
We share your passion

Due to major stock issues with the Veritas range, a decision has been made, in conjunction with Axminster Tools, to substitute the original prize for a similar one within Axminster's Rider range. Rider planes represent traditional, quality plane manufacture and feature a ductile iron alloy body, accurately ground sole and carbon steel blade. The new prize – the **Rider No.5½in Jack Plane** – is not only versatile, but also perfect for flattening, jointing and general preparation.

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

CLEAN WORKBENCH

Hi Tegan,
I thought I'd drop you a line or three about working in a confined space. Like many woodworkers, I only have a limited bench area so it's very important for me to keep the worktop clean. When I'm working on projects/tasks that create dirt and mess, I use a cheap lining paper, which I unroll onto the bench and weight down at the corners.

I recently inherited a Record No.5 plane and wanted to fettle it. I laid some paper onto the workbench top, so I'd have a clean surface for stripping down and cleaning off any old grease and dirt, while also protecting the surface of my work area. I can also carry out any work on the plane safe in the knowledge that any filings will also be caught on the paper. When finished, I can simply remove and dispose of it in the recycling bin, ensuring the worktop is always kept clean and clutter-free.

When starting work on a new project, I simply take another length of lining paper and place it on the worktop. Also, if you're dealing with a complicated strip down, you can sketch out components as they're dismantled, ensuring the order can then be reversed when it comes to reassembly. The paper also doubles up as a handy ideas scribble sheet.
Jamie 'Badger' Seaton

The loose assembled plane showing outlines of individual parts

Lining paper protects the bench during sharpening of the plane blade as well as when cleaning it up afterwards

The plane, once cleaned and reassembled


WW
TURNING

Festive LIGHT

Making use of scrap wood, pre-bought glass baubles and LED string lights, **Ken Moore** gets creative on the lathe and shares two design variations on a festive snowman decoration

1 The body, head, hat and base are all turned from one log

2 With bark removed, turn the log down to a cylinder, ready for marking up into three sections...

There are quite a few projects that make use of LED lights, but I thought I'd have a go at turning my own LED-lit snowman. The design can be modified to suit your tastes and the finished result can be used as a festive table decoration or similar.

Timber & materials

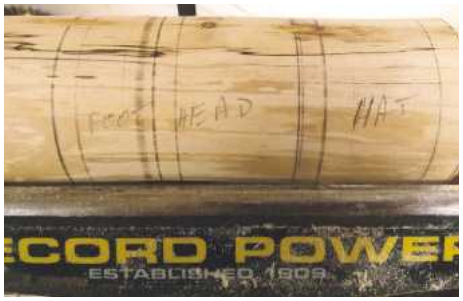
I collected the wood for this project during a camping holiday. The campsite had its own sustainable forest and the trees were cut for heating and power generation. I was invited to pick a log, which was then chopped into lengths.

For the body, head, hat and base, I used another log picked up at the same campsite a few years back; it was slightly spalted with wonderful patterning (**photo 1**). For parts such as the eyes, buttons, nose and berries, I used various pen blank scraps, which were ideal for these. In terms of the non-turned parts, I purchased the glass baubles on eBay as a set of six and the lights from Aliexpress UK.

Turning the log

Start by mounting the log between centres, with the lathe stationary. When removing bark, it's important to wear appropriate PPE, such as a full-face visor, which will protect you from any flying debris. I spotted some black mould under an area of bark on my timber, which I didn't want spraying into the atmosphere. When no further bark remains, switch the lathe on and using a skew chisel, turn down to a cylinder, ready for marking up into three sections (**photo 2**); these will become the snowman's hat, head and base (**photo. 3**). There's no set dimensions for these, but you need to ensure they're in proportion to the glass bauble body. Once I'd guesstimated the timber required, I added approximately 5mm to form a spigot on each section, which will be used for mounting on the lathe later on.

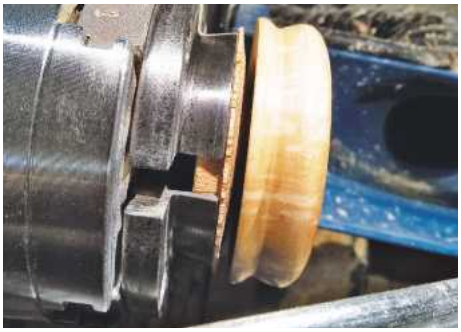
Next, using a pair of callipers set to the same diameter as your chuck, remove the wood at each of the spigots, adding a slight



3 ... which will become the snowman's hat, head and base

4 Using a bandsaw, cut the log according to the marks you made earlier

5 Remove material from the centre, occasionally stopping to test the fit of the bauble against the base



6 Turn a bead on the outer edge followed by another half bead for the foot

7 For sanding the base's underside, I use a sanding pad mounted in a chuck, which is attached to a No.1 Morse taper mandrel held in the headstock

8 Mount the head blank on the lathe using the tenon formed earlier. Turn until roughly head-shaped, then create another tenon on the end

9 Use a 1.5in Forstner bit to bore a hole in the head section, while mounted on the lathe

taper before using a parting tool to cut halfway through.

The base

Moving to the bandsaw, the next step is to separate the blanks (**photo 4**). The first section you'll turn and finish is the snowman's base, which is essentially a small bowl.

10 Measure the diameter of the box lip on the head and transfer this to what will become the underside of the hat

Working from the centre, remove material as you go, stopping every so often to test the fit of the bauble against the base (**photo 5**). It's important to ensure you don't go too deep as the bauble needs to be glued to the wood later on, and you also run the risk of creating a hole in the bottom, which you don't want. Carry on removing small amounts, testing the fit of the glass bauble until you achieve a good fit and the bauble reaches the edge of the wood. You can then turn a bead on the outer edge followed by another half bead, which will later become the foot (**photo 6**).

The next step is to sand the base down to 400 grit using a beeswax and oil paste mix; this minimises dust, fills any small voids in the wood, produces a really smooth finish, and is also good for your skin. Once finished, part the piece off and sand the underside of the base. To do this, I used a sanding pad mounted in the chuck attached to a No.1 Morse taper mandrel, which is held in the headstock.

Abranet is the abrasive I use most; I find it attaches particularly well to the sanding pad's Velcro hooks.

The head

Moving on to the head, this is basically a box with a hole in the bottom. Start by mounting the head blank on the lathe using the tenon formed earlier. Turn down until roughly head-shaped – i.e. not quite round – then create another tenon on the end; this forms the inside edge of the box where the hat will attach (**photo 8**). Next, bore a hole using a 1.5in Forstner bit (**photo 9**). The hole doesn't need to be very deep; it only has to take the battery pack for the lights and any excess wire not required can be stored inside the glass body. To achieve the required depth, place the battery pack inside every so often, checking the fit as you go. You'll also drill another hole in the hat later on, which will ensure there's plenty of space. With the battery compartment completed, drill another hole – which the wire will be threaded through – to approximately 4mm. Once the inside has been sanded and finished with sanding sealer, complete shaping the outside of the head, finally finishing with a combination of Yorkshire Grit abrasive paste and friction polish.

The hat

The process for making the hat is basically the same as before. This time, however, you need to measure the diameter of the box lip on the head and transfer this to what will later become the underside of the hat (**photo 10**). Use the same Forstner bit as before to drill a hole in the hat, about two-thirds the depth

11 As the hat blank has a firm fit, use this as a friction chuck to hold the head; doing so will allow you to shape the underside

12 Remove the tenon, then use a small Forstner bit to drill a suitably sized hole to accept the neck of the bauble

13 Use a spindle gouge to shape the timber, stopping the lathe so you can hold the glass bauble against it

14 Sand and finish the head section with Yorkshire Grit, or a similar abrasive paste

15 The top hat is my preferred design

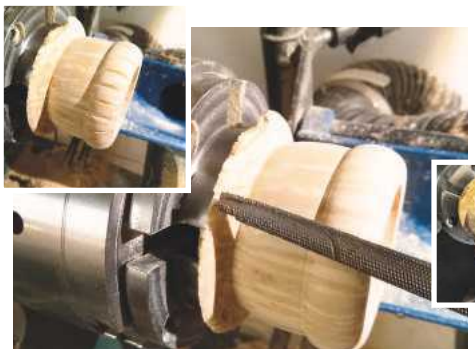
16 Once happy with the shape, sand and polish as before, using Yorkshire Grit, then attach the head so you can check the look and fit

of the blank. Using a Bedan tool, carefully remove material up to the diameter mark for the box lip, repeatedly checking against the head to ensure you don't remove too much. You're looking for a firm, but not overly tight fit here.

As the hat blank will be a firm fit, you can use this as a friction chuck to hold the head; this will allow you to shape the underside (**photo 11**). Remove the tenon, then use a small Forstner bit to drill a suitably sized hole to accept the neck of the bauble (**photo 12**). To work out the size required, I held a variety of bits against the neck until I found one that would create a slightly oversized hole. This side will attach to the bauble and must also be concave. Use a spindle gouge to shape the wood, stopping the lathe regularly so you can hold the bauble against it (**photo 13**), checking that the neck of the glass doesn't impede the body of the bauble and make contact with the wood. This is important to ensure you achieve a good gluing surface. During this step, you can also see the surface through the glass. A good connection means no air pockets are created, which could potentially spoil the appearance. I later repeated all steps so far to make a second snowman, but this time with a different hat.

Two hat designs

I wanted to create two styles of hat – a top hat and a beanie-type – so my wife and children could then choose the one they liked best. I made the top hat first as this was my preferred design (**photo 15**). To create your own version, start by turning the brim. Using a Bedan tool, remove material down to the desired width, then with



17 Use a rat tail file to make notches around the bottom of the beanie-style hat, adding detail to the brim

18 While mounted on the lathe, spray each hat with black lacquer, blocking up the hole with tissue paper

a spindle gouge, create a slight curve from the top down to the brim. Once you're happy with the shape, sand and polish as before, using Yorkshire Grit, then attach the head of the snowman, which will allow you to check the look and fit (**photo 16**).

For the beanie-type hat, you need to follow the same steps except that the brim here is just a simple bead with a rounded over top. To add detail to the brim, use a rat tail file to create notches around the base of the hat; these will give a more realistic appearance (**photo 17**).

Painting the hats

While each of the hats are still mounted on the lathe, spray both with black lacquer, ensuring to block up the hole inside the hat with tissue paper (**photo 18**). Once dry, turn the hats over, so they're attached to the chuck in expansion mode, remove the tenons, then finish and lacquer each one (**photo 19**). To protect the lathe during spraying, I cut a piece of cardboard and placed this over the headstock. Despite taking these preventative steps, however, some paint still found its way onto the chuck, although this isn't too much of an issue as it can easily be removed with wire wool.

Apply the paint with the lathe set on a slow speed. If your lathe doesn't go below 400rpm, I suggest removing the tenons and finish shaping the hats first.

19 Once dry, turn each hat over, attached to the chuck in expansion mode, then remove the tenon before adding finish and lacquer

20 Paint the beanie-style hat using the same method as used for the top hat

21 I used Jo Sonja metallic paints in the following colours: Pearl White, Silver, Rich Gold, Rose Gold and Burnished Copper

22 Using a short-bristled brush, dab patches of paint all over the hat's surface, making the pattern as random as possible

23 To blend the colours, wrap each hat in cling film, then, using your finger, move the paint around under the film

24 Before the paint dries, wipe off the excess from the areas you want to remain black – just the brims in this case

25 The two painted hat designs, with black rims...

... are each sprayed with clear lacquer

26 Using a pencil, start by drawing on the eyes, nose and mouth

Doing so means you can paint them off the lathe and avoid leaving a streaky finish.

To make the hats jazzier in appearance, I used Jo Sonja metallic paints. You can choose your own colour combinations, but I settled on Pearl White, Silver, Rich Gold, Rose Gold and Burnished Copper (**photo 21**). Use a short-bristled brush to dab patches of paint all over the surface of the hats, making the pattern as random as possible (**photo 22**). This tends to look a bit messy to begin with and some of the spots may stand out more than others, especially if you've overloaded the brush. To blend the colours in, wrap the hats in cling film, then, using your finger, move paint around under the film (**photo 23**). Ensure to remove the film slowly and carefully as you don't want to disturb the patterns you've worked so hard to create. Before the paint dries, wipe off any excess from areas you want to remain black – in my case, this was just the brims (**photo 24**). The hats can then be put to one side and left to dry. Next, apply three coats of clear lacquer; this helps to protect the paint while also creating a nice surface shine.

Facial features

It's often the small details that end up taking the most time, and this was certainly the case with this project. The snowman needs a face, so, using a pencil, start by drawing on some eyes, followed by a nose and mouth (**photo 26**). Use a Dremel multi-tool or similar to drill two holes for the eyes, plus one for the nose (**photo 27**). You also need to drill a hole at one side of the mouth, so it's slightly angled, which will accept the pipe – after all, every snowman needs one. I found the mouth a little tricky to achieve, so experimented with a few designs. I eventually settled on a single line, which finishes in a curve across the end. Once everything's put together, it'll appear as if the snowman really is holding a pipe.

To finish the mouth, add a little pyrography detail and burn lines in for the mouth (**photo 28**). After a light sand and buff up on the lathe, the head is then ready to accept the eyes and nose.

Eyes, buttons & pipe

As all of the features are so small, they're very easy to lose. I found this out the hard way and had to make a few of the parts again after they'd pinged off across the workshop, never to be seen again. It's a good idea to store these inside the bauble as you finish each one (**photo 29**).

The eyes and buttons are all turned from a buffalo horn pen blank. This material is very easy to work, but smells like burnt fingernails during turning (**photo 30**). Hold the pen blank in the chuck and turn down to approximately 5mm diameter. Round it over and put a tenon onto the back side, the same size as the holes drilled for the eyes. The buttons don't require a tenon as they'll be glued directly onto the glass bauble. Once polished, the horn looks really effective. Next, clean up the button backs using a Dremel or similar, which will allow them to sit flat on the glass. This is where I lost a number of small pieces, and even though they're quite difficult to hold and sand at the same time, this method is easiest on your fingers.

For the pipe, use another pen blank offcut

27 Use a Dremel or similar tool to drill holes for the eyes and nose

28 Add a little pyrography detail and burn in lines for the mouth

29 Small parts can be stored inside the bauble as each is finished

30 The eyes and buttons are all turned from a buffalo horn pen blank

31 For the pipe, drill another hole in the side and mid-point to accept the stem

32 Once smoothed and polished, glue the two pipe components together

33 Turn the timber for the berries down to around 8mm diameter, dividing into sections using a parting tool, and mark out each of the barriers

34 Turn a series of spheres, finish each of the berries and remove before starting the next

and turn this in two parts – pipe and stem. Make the pipe around 10mm long, or just over, turn down to around 5mm diameter and drill a hole down the centre – almost to the bottom. Then drill another hole in the side and mid-point to accept the pipe's stem (**photo 31**). Use the same timber for this and turn down to approximately 2mm – the same size as the hole in the pipe's centre. Once smoothed and polished, the two pipe components can then be glued together (**photo 32**).

Berries & leaves

For the berries and leaves, I used timber left over from a child's cot, which has been employed in the making of a few other projects, including last year's Christmas carousel. Start by mounting the piece on the lathe, turn it down to around 8mm diameter, and, using a parting tool, divide into sections, effectively marking out each of the barriers (**photo 33**). Next, turn a series of spheres and finish each of the berries, removing one before starting on the next (**photo 34**). Use a red Sharpie pen to colour the berries and once assembled as a group of three, apply a protective coat of lacquer.

The leaves start off as discs, turned on the lathe; these are coloured using a green Sharpie pen (**photo 35**), before being parted off ready for final shaping. To do this, take a Dremel or similar, mounted with a sanding bit. The same tool can be used to thin down the edges of the leaves before reapplying the green colour.

These parts are also very fiddly, so when it comes to glue-up, I advise positioning the leaves on a piece of Blu Tac, using epoxy resin to secure the berries in place. This allows you to play around a little until they're correctly positioned. Use epoxy again to fix the eyes, nose and pipe onto the snowman's head (**photo 37**).

35 The leaves start off as discs, turned on the lathe; these are then coloured using a green Sharpie pen

Final assembly

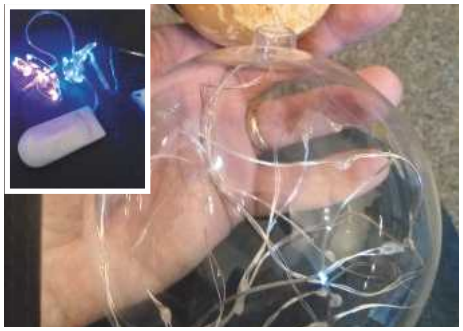
Now for the fun part – putting all the individual showman components together. Before feeding the string of lights through the hole in the top of the bauble, it's important to ensure they're are working. Also check the string of lights for knots, then pass through the hole in the head before threading into the bauble (**photo 38**). Keep pushing until you reach the bottom of the bauble and once inside, you'll find the lights will arrange themselves into a fairly random pattern.

To achieve a nice, clear, flexible joint, use Evo-Stik Serious Glue to attach the head and base (**photo 39**). You don't want to use epoxy for this part as if the timber moves, you risk damaging the glass bauble. Apply glue to the neck of the bauble, also spreading some on the underside of the head, then place the head onto the bauble and give it a twist while pushing down. If you do this correctly, you shouldn't see any visible air bubbles. Some excess does tend to squeeze out, but don't be tempted to wipe it off. Rather, leave to set then remove using a Stanley knife or similar. Any residue on the outside of the glass can be cleaned off with a wet wipe.

The completed snowman lights look great, especially once lit up (**photo 40**). To date, I've made quite a few although I'm now running out of spalted wood! I hope you enjoy this project and do have a go at making your own versions.

36 The completed holly leaves and berries, once glued up

37 Use epoxy to fix the eyes, nose and pipe onto the snowman's head



38 Check your string of lights for knots, then pass through the hole in the head and into the bauble

39 To achieve a nice, clear flexible joint, use Evo-Stik Serious Glue to attach head and base

40 The completed LED-lit snowmen should look something like these

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WOODEN TOYS THROUGH THE AGES

The earliest toys discovered by archaeologists were all made of wood, and this material continued to be used for thousands of years, as **Paul Greer** discovers

1 19th century Australian Aboriginal bullroarer – 380mm long

2 Bullroarer – Papuan Gulf, Papua New Guinea – 370mm long

Despite the highly sophisticated toys that electronics and materials such as plastic have long made possible, ones made of wood, and often much simpler in design, still afford great delight.

In all cultures, many toys intended to be fun are also meant to be instructive and educational. Often, this is by imitating adult uses, and throughout history, has been particularly evident with 'male' toys, where boys playing with sticks or bows and arrows have then graduated to weapons. In strongly gender-segregated societies, this may be reinforced by their being denied traditional girls' toys, such as dolls, for example.

Centuries-old designs

Outside of western societies, some toys have remained unchanged for centuries. Usually, this is because they're uncomplicated, and easily made from readily-available natural materials. Children of the Huli tribe in Papua New Guinea take a flat piece of wood, make a hole in one end, to which they tie a length of grass, or string. This results in a toy which, when whirled, produces a humming sound. Similar devices elsewhere are known as 'bullroarers' (**photos 1**, **2** & **3**).

Spinning tops

The first spinning tops may have been inspired by two natural forms – the acorn and turban seashell. In primitive cultures, the practice of rotating a pointed object to produce fire could have led to 'hitting on' the top (**photos 4** & **5**). A wooden one, dating from c.1300BCE, was found in the tomb of the Egyptian pharaoh, Tutankhamun, unearthed in 1922 by the British archaeologist Howard Carter (**photo 8**).

Small tops with four flat faces were used for gambling in ancient Rome, and one can be spotted in the foreground of Pieter Bruegel the Elder's famous 1560 painting, *Children's Games*.

During the 16th and 17th centuries, what were called 'parish tops' were found in town squares, and intended for play or exercise. Most were quite large, some approaching 1ft long, and weighing 2lb or more. Shakespeare mentions one in Act 1 of his play *Twelfth Night*.

Spinning tops were hugely popular in 1950s America, giving rise to contests with prizes of up to several thousand dollars. Today, many beautifully-decorated wooden

3 Traditional Australian bullroarer featuring unique First Nations art

4 Ancient wooden spinning tops

tops are still made, a good proportion being hand-turned on a lathe.

Toy hoop

Ancient Greek and Roman representations show the toy hoop to be very old. Historically, hoops had only been wooden, but during the 19th century, some were reinforced around the rim with a metal tyre. Hoops back then were typically propelled using a wooden stick, which was called a skimmer (**photo 9**).

In the late 1950s, the Hawaiian-inspired hula hoop enjoyed a spectacular heyday, not least because of the – then new – colourful plastics from which they were made, although their popularity was brief. Contrastingly, wooden hoops have held their own, and today constitute an element of numerous exercise classes.

Yo-yo

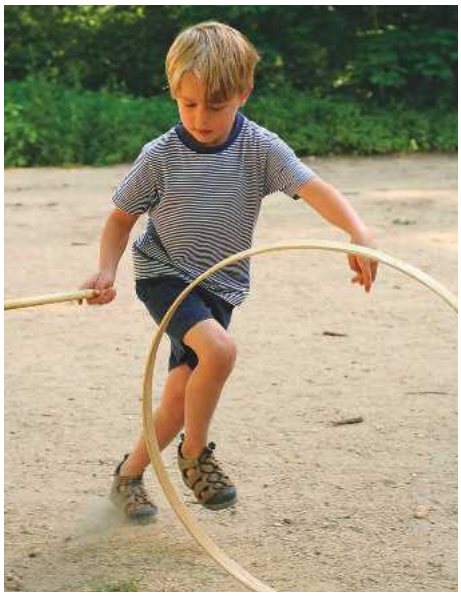
Three countries are connected with the origins of the yo-yo. Ivory ones date from 1000BCE in China, with wooden varieties going back as far as 500BCE in Greece (**photo 10**) and the Philippines, in whose language 'yo-yo' means 'come back'. In the 1920s, a Filipino businessman, Pedro Flores, began the large-scale production of yo-yos in the USA, which soon became a craze there.

5 Antique wooden spinning top pair

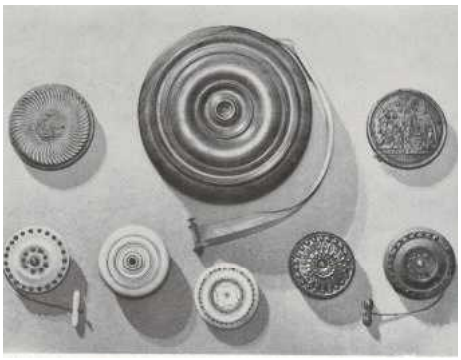
6 A late Victorian apple wood spinning top and launcher featuring lovely patination

7 Antique Victorian carved and turned whipping top in walnut – circa 1890s

8 One of the fine examples of children's spinning top found in the tomb of Tutankhamun



9 Wooden hoop rolling



10 A selection of French yo-yos from the 1790s in wood and ivory

11 Ancient Greek yo-yo

12 Late 19th century carved and painted hobby horse with wood and iron wheels

Hobby & rocking horses

The hobby horse – consisting of a simple horse's head on a stick – was popular in the medieval era (**photo 12**), and in time developed into the 'barrel horse' – a log on four wheels, and a horse's head in front.

Wooden rocking horses first appeared in Europe in the 17th century. Few from then survive, but one, ridden by King Charles I when he was a boy, is held at the Victoria and Albert Museum of Childhood, London (**photo 13**). Handcrafted rocking horses were an 18th century phenomenon, the English dapple grey, like 'Caroline', a family heirloom given a new lease of life by Shaun Newman in his article on page 34, being perhaps the best-loved.

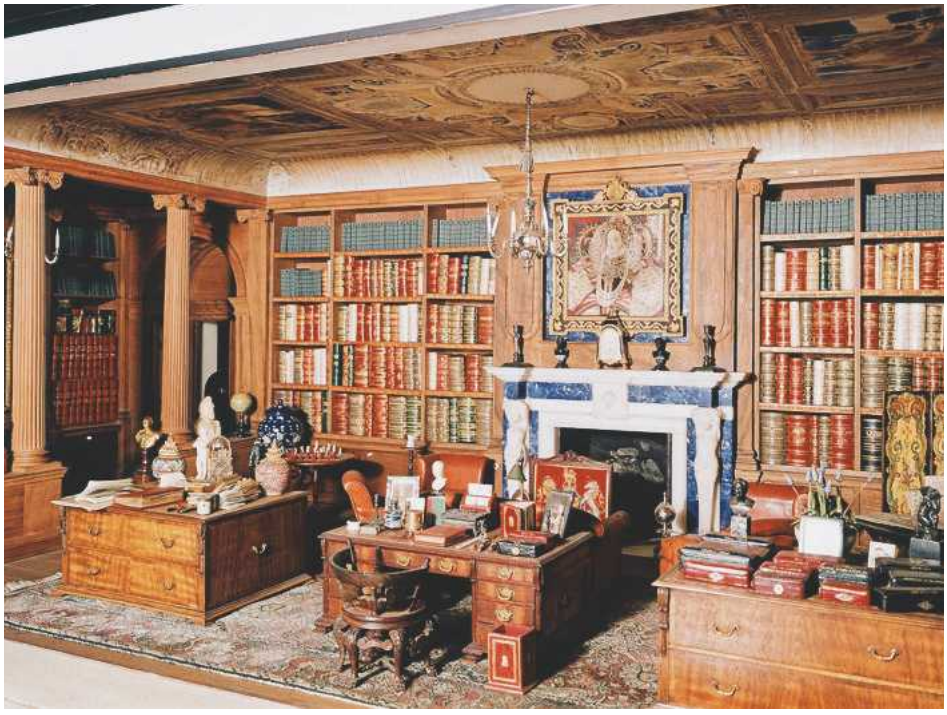
Throughout the Victorian and Edwardian eras, sales of the bow-rocker variety grew, since, being hard to overturn, it was much safer. Shortage of both necessary materials and skilled craftsmen after World War I saw a decline in rocking horse production, which was never fully reversed. However, the past three decades have seen a renewed interest in them, giving rise to some specialist manufacturers, and elevating antique horses to collectors' items.

Dolls & dolls' houses

Besides being play objects, dolls in ancient Egypt may have had a religious or spiritual role. Greek dolls with articulated limbs dating from 200BCE, and fashionably dressed ones discovered in graves of Roman children, however, suggest they had an exclusively play function elsewhere (**photo 15**).

By contrast, dolls' houses, which date from the 16th century – when they were also known as 'baby houses' – were replicas of wealthy family homes, and a record of status and of the times. Holland and Germany were among the countries where these most closely reflected real-life decor and fashion.

Only in the late 19th century did dolls' houses become intended for play. In 1924, Sir Edward Lutyens, a famous architect, was commissioned to make a very fine one for the young Queen Mary (**photo 16**). Constructed to 1:12 scale – 1in to 1ft – it was intended to show how a monarch lived in the 20th century. The skills of over 1,000 leading craftsmen were called upon, and the tiny contents included a wardrobe veneered in Amboyna wood. Today, the house is on



17 Queen Mary's Dolls' House library, panelled in walnut. Created by Princess Marie Louise and author EV Lucas, who brought it to life by asking authors, illustrators, composers and artists to contribute to it

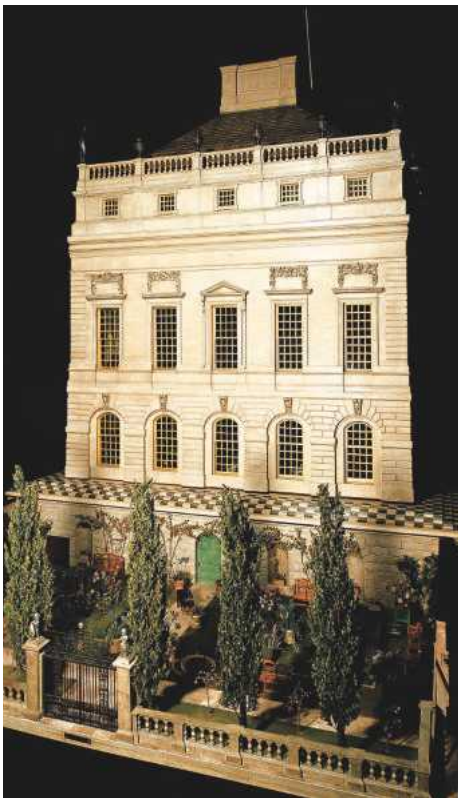
18 1940s quacking duck and circa late-1930s orange duck

19 Victorian Noah's ark toy

13 17th century rocking horse traditionally associated with the childhood of Charles I

14 Antique Victorian dapple grey rocking horse, of German origin

15 Ancient Roman articulated doll found in the Sarcophagus of an eight-year-old girl



16 Queen Mary's Dolls' House – designed by architect Sir Edwin Lutyens and completed in 1924

display at Windsor Castle where it draws the awed admiration of visitors (**photo 17**).

Kites

It's not certain whether kites were invented in China, but they appear to have first been made popular there. Much of this was down to local materials being ideal for their construction – light but resilient bamboo for frames, and silk for both the sails and flying line. From their inception nearly 3,000 years ago, they were decorated with legendary or mythical figures; some being fitted with whistles and strings to create musical sounds when the wind passed through them.

Toys from wood

In the early 1700s, German toymakers were first to craft toys intended not just for the rich. Bearing samples, their representatives toured Europe, taking orders for both these and bespoke items. Wooden dolls and animals were their staples, but over the next hundred years, toy soldiers, trains, miniature theatres, and a jack-in-the-box were produced, nearly all painted in bright colours. Noah's ark was popular, too, and in some households, the only toy a child was permitted to play with on Sundays (**photo 19**).

A modern toymaker is Gabriel Pfeiffer, who in 1984, in Amsterdam, began to make toys out of wood he extracted from a skip. In 2000, he moved to the UK and established 'Woodend Toy Makers'. Producing pieces mainly from reclaimed or recycled wood, the organisation turns out items not only attractive in themselves, but which also appeal to buyers increasingly conscious of the environmental hazards of plastic alternatives.

Enduring popularity

Many centuries ago, China and Russia were among the first countries to employ the abacus, probably the oldest mechanism for counting and calculating (**photo 20**). Even today, a wooden abacus frame with brightly-coloured beads offers a lively way for children as young as three to acquire basic skills such as addition, subtraction, multiplication, and division. It's also – almost incidentally – good for hand-eye co-ordination, and especially learning to use two hands at once. Numerous educational sites advise parents on how best to approach using an abacus with their son or daughter.

Another device long considered good for concentration and co-ordination is the cup-and-ball game. This is traditionally a children's toy consisting of a wooden handle with a fairly shallow cup at the end, to which a ball roughly the size of the cup is attached by a string. The objective is to flick the ball into the cup, the degree of difficulty varying with the size of cup(s), and/or ball(s), length of string, and the player's dexterity – and patience! Originating in 16th century France, where it was known as 'bilbocquet', it became a craze in Elizabethan England, even the queen and her courtiers being enthusiasts (**photo 21**).

Perhaps the reason wooden toys have remained popular is due to their customary simplicity. This has encouraged the children who play with them to use their imagination, often resulting in a wooden toy that remains a favourite, long after more complex or superficially attractive ones have been abandoned.

20 A selection of antique abacuses

21 Early French bilboquet – English cup & ball

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MAN vs BOWL

Doing battle with a brown oak burr, despite facing a few challenges along the way, **Les Thorne** manages to create a striking bowl with ebonised and lime-waxed exterior

I won't need to tell most of you that sometimes wood can be a bit of a pain. It will often frustrate you with its splitting and warping, often ruining a beautiful project. I have a large selection of what can be described as 'character wood', although I'm more inclined to call it 'problem timber'.

If you're a relative beginner and have pieces like these, put them to the back of the workshop and practise on an easier project before returning to something like this when you're more experienced.

I've had this particular piece of brown oak burr for a while and it came off our local golf course. I did make a project from the same tree a couple of years ago, when it was easier to turn and still had some moisture in it, but now the oak is much harder and will take some turning. I thought this piece would be ideal for trying out some new generation turning tools, many of which have been introduced to the market over the past few years. While the majority are made from M2 high speed steel, the gouges I'm using here, from Crown Hand Tools, are M42 HSS and cryogenically hardened, which means they should be perfectly suited to working this hard, abrasive, curly-grained timber.

1 I'd normally mount a blank like this on the lathe and make natural- or live-edge bowls from it. The burr shown here, however, doesn't lend itself to that type of bowl, so I started by creating a flat on top using a chainsaw

2 You can see the problem – it's hollow. The centre is full of all sorts of potential problems with bark inclusions and knots, so compressed air is used to get rid of anything loose

3 Fitting the faceplate may prove a challenge as there's limited potential timber to screw into. I just about managed to get enough purchase from the fixing, but still had to keep an eye on it during turning

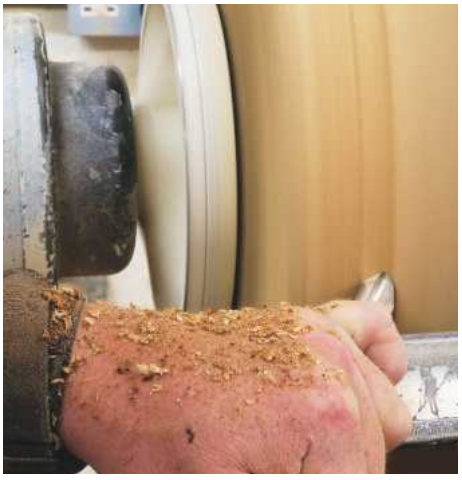
4 I could see the timber was going to be severely out-of-balance, so changed the lathe belt to a lower ratio. Even though I have variable-speed, this setting provides greater torque

5 Here's the new gouge – I've changed the factory grind to my own preferred one, which tends to have a more acute 45° angle as opposed to the 50° one supplied

6 Due to the faceplate's dodgy fixing, it's a good idea to keep tailstock support in place for as long as possible. When working on pieces like this, before switching on the lathe, always check to make sure the timber doesn't foul the toolrest

7 There's going to be a lot of fresh air between the tool striking the wood, so it's important to brace the tool against your body. When using a pull cut, ensure to keep the tool handle down, as shown, which will avoid too much scraping

8 Here you can see the amount of wood being cut with each revolution. If the bark becomes loose, it's better to remove it with the lathe stationary rather than risk it flying across the workshop



9 Using a push cut allows me to find the maximum diameter of the piece. A benefit here is that you're standing to the left of the spinning wood rather than in the firing line

10 When you get an odd piece like this, it's far better to keep things simple. A fussy shape would probably be lost due to the voids and fissures that will end up in the finished piece

11 Using a pair of dividers, mark up the diameter of the chucking spigot. Here I'm using my largest gripper-style jaws for the Axminster Evolution Chuck

12 Should an area like this be regarded as a fault or a feature? From a commercial point of view, it would be far better not to have a hole in the side, but it's natural and when cleaned up later, should create an area of interest

13 Here I'm using the 13mm signature gouge to create an accurately cut spigot. It needs to be cut square so the jaws grip at their maximum efficiency. If you prefer to use a parting tool, however, it'll do the same job

14 The Ashley Iles' beading tool will cut very accurate and quick beads all the way up the outside of the bowl. The tool is used flute down on the toolrest and presented into the cut with a slight up and down waggling motion

15 To create the desired textured effect, there's nothing better than a blow torch. Not only will it clean up any rough bits left after using the beading tool, but also create an interesting effect on the surface

16 A good quality brass liming brush held against the revolving wood will get rid of all the loose carbon on the surface. You could use a steel wire brush but it's likely to create scratches on the bowl's surface

17 The surface now has the appearance of old leather. The blow torch speeds up the ageing process by removing the softer growth first. I like to think it looks like an old oak fence post

18 Now to ebonise the outside. I could use stain but would then run the risk of it penetrating the inside of the bowl, so instead chose black lacquer, which will hopefully stay on the outside and not soak through

19 I really enjoy using coloured waxes to pick out the grain detail. Rather than using verdigris, gold or silver, I decided to use liming wax, which although white, gives off a pleasant bluey grey finish

20 Once you've wiped off the excess wax, the bowl can be remounted in the chuck jaws. To provide additional strength and accuracy, the top of the jaws must locate onto a flat area on the bowl's underside

21 Now for the difficult part. The inside of the bowl proved to be a challenge. I put the toolrest across the front of the bowl and worked as close to the centre of the rest as possible, which allowed me to achieve maximum support

22 As I turned away the inside, bits of timber kept breaking off. I then discovered a void inside the blank, which wasn't visible from the outside. Luckily it was shallow enough and could easily be turned away

23 The rim is turned using a push cut, taking it down to the top of one of the beads. I like to put a curve onto the rim – either convex or concave – depending on the effect I'm trying to achieve

24 Take the inside down in stages. You can swap to a larger bowl gouge as the cuts get further away from the toolrest. You can clearly see the hole spinning round, but at this speed the gouge won't fall through

25 Here's one of my favourite tools. It's quite normal to pick up a scraper at this point, but I think the 60° gouge does a much better job of cleaning up the surface in the bottom of the bowl

26 The short bevel on this gouge means it's very easy to rub and achieve a good quality cut. The flute of the tool is almost upright as you approach the bowl's centre

27 The hole in the bowl's wall looked a bit messy, so I decided to carve away the edges to better define the void. A carbide burr in a drill does the job quickly, but you could use some small files if you prefer

28 I still didn't like the hole, so chose to emphasise it by ebonising the inside surface. I didn't have any paint available, so used black spirit stain, which is far more difficult to control

29 When it comes to sanding, it's imperative to present the power sanding pad to the work so there's a small gap at the top; this will stop the defects and holes 'grabbing' the pad

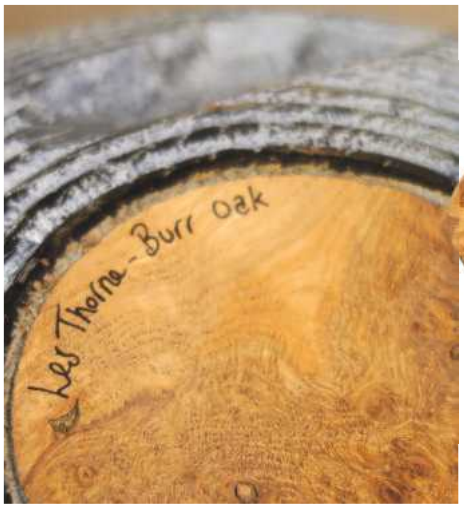
30 When sanding the inside, tuck the drill into your body and ensure the pad runs through the centre of the bowl. With coarse abrasives, such as 60 and 80 grit, bad sanding can easily ruin an interior shape

31 One of my favourite things in turning is applying the first coat of oil. You never know how pretty the grain is until you apply that first coat. I'm using lemon oil here as I like the matt finish it imparts

32 I couldn't use a vacuum chuck due to the holes in the piece, so opted for a friction drive instead. The drum is protected using some thin packaging, so I didn't have to worry about marking the bowl's interior

33 The tailstock is brought up, which means you can remove the majority of the spigot by taking small cuts with a spindle gouge. Remember not to take too much away otherwise the bowl will fall off

34 When finishing the last part, start with a chisel, then use a 50mm sanding pad to smooth over the surface. Removing the spigot finishes off the bowl perfectly



35 The final step is to sign the piece. You could use a pyrography machine to burn in your signature, but I like to use a good quality permanent pen. Adding the species is a nice touch, but I rarely add the date

36 The completed burn oak bowl looks very striking and is a great exercise in turning 'problem' pieces of timber

WW TECHNIQUE

THIN EDGE OF THE WEDGE

The twin wedged mortise & tenon is generally used when the joint will be cut into the face rather than edge of the mortise member. It's a very secure version of an old favourite, as **Andy Standing** shows here

This example could be used on a narrow shelving unit, where the joint's strength and decorative qualities can be emphasised by inserting diagonal wedges made from a contrasting timber in the ends of the tenons. For a wider joint, you can simply use multiple tenons across the width of the joint. You'll need the following tools to create this joint: a try square, short steel rule, chisels, mallet, tenon and coping saws, hammer, and lastly, a plane.

1 Start by marking the shoulder line around the tenon member. Leave a little extra length so the ends can be planed flush after assembly

2 Mark out positions of the tenons. First draw a line about 6mm in from each edge, then divide the space between these two lines into three equal sections. Ensure the tenons and spaces between them are all of an equal width

3 Mark the waste areas clearly. It's all too easy to cut out the wrong piece by mistake, especially on a complex joint such as this

4 Transfer the marks from the tenon member onto both sides of the mortise member

5 Remove waste from the mortises using a chisel and mallet. You'll need to work from both sides. Take shallow cuts and be careful not to damage the edges

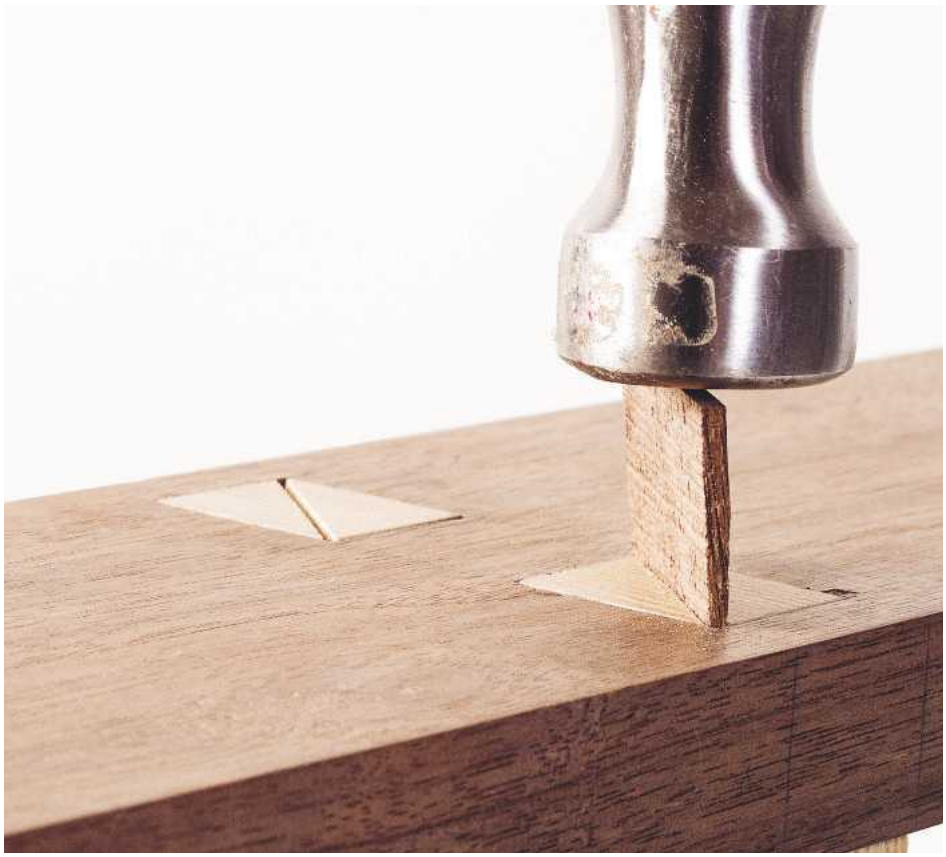
6 Saw out the tenon waste using a tenon saw. Make the vertical cuts first, ensuring to keep on the waste side of the marked lines

7 Next, carefully saw along the shoulder line at each side of the workpiece

8 Use a coping saw to remove the section between the tenons. Keep on the waste side of the line, then trim down to it with a chisel

9 Cut slots for the wedges in the ends of the tenons. If preferred, these can be at 90° to the tenon face rather than 45°

10 Cut a thin sliver of contrasting timber to make the wedges. Taper the end with a chisel, then cut the wedge to size



11 Assemble the joint and tap the wedges into place with a hammer. Once they're tight, trim off the tops and plane the ends of the tenons so they're flush with the surface

NEXT MONTH

Coming up in the next issue...

The Woodworker & Good Woodworking January issue – on sale 17 December

A MOMENT IN TIME

Les Thorne's stunning skeleton clock with finials incorporates various techniques such as offset turning as well as colouring using gilt cream and ebonising lacquer

CHOICE SOUNDS, SOUND CHOICES
Tony 'Bodger' Scott fits music into toys for children

BEGINNERS' GUIDE TO FURNITURE MAKING – HAND SAWS
John Bullar looks at how hand saws are chosen and used by furniture makers to complete their every day work

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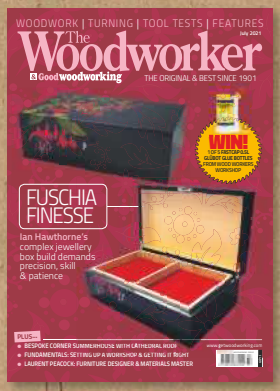

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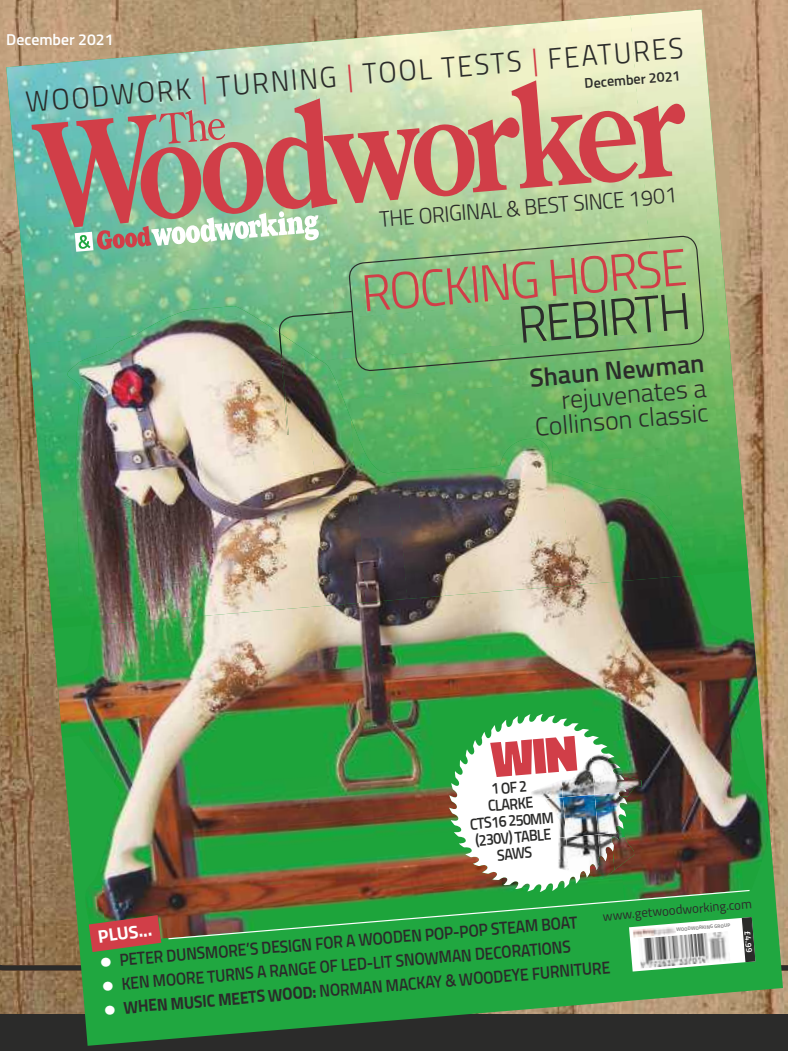

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