

Furniture & cabinetmaking

DESIGN • INSPIRATION • PROJECTS • TECHNIQUES • TESTS • NEWS • EXCELLENCE

Wooden screw vice

For the ultimate
handmade bench

Wedged tenons
Chris Schwarz
argues the case

Millers Falls drill
Extreme makeover

Marquetry donkey
A thoroughbred
among horses

Tormek T4
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with heavyweight
aspirations

Make your
own Krenov-style
wooden hand plane



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A man in a green sweater is working at a large industrial machine in a workshop. The machine has a large circular blade and a dust extraction system. The background shows various workshop equipment and materials.

MARK KILROY

” "Doing it well is really important and this machine has enabled me to push myself to become better at what I do"

A wooden desk with a curved front and a small drawer. The desk is made of solid wood and has a smooth finish.

FINE FURNITURE WITH THE C3 31

MARK KILROY USES ONLY THE BEST TO ACHIEVE PERFECTION

Mark Kilroy is a manufacturer of fine furniture. After training with David Savage, a fine furniture maker located in Devon, he subsequently completed a course with Dennis Sutton, further refining his skills. Having worked professionally for a number of years, Mark now makes furniture as a hobby, with all of his creations made in solid wood. He has made numerous components for his own kitchen and has made a stunning desk for his wife. A chest of draws with handmade veneers is one of his recent projects.

There are certain things that stand out with this machine and they are absolutely essential for a machine of this calibre. It is a decent and reliable saw and the planer and spindle are amazing. "Doing it well is really important and this machine has enabled me to push myself to become better at what I do".

When Mark was looking for a machine to purchase, he explained his meticulous research process and found that compared to others; the Hammer C3 31 was better made and better engineered. He stated that it is "significantly at the higher end of hobby machines". Passionate about producing quality,

Mark says his C3 31 is the absolute centre of his workshop and it does everything he wants it to do. "I can run it for hours at a time, not to mention the spindle which has a lot of power and is just amazing for curved work."

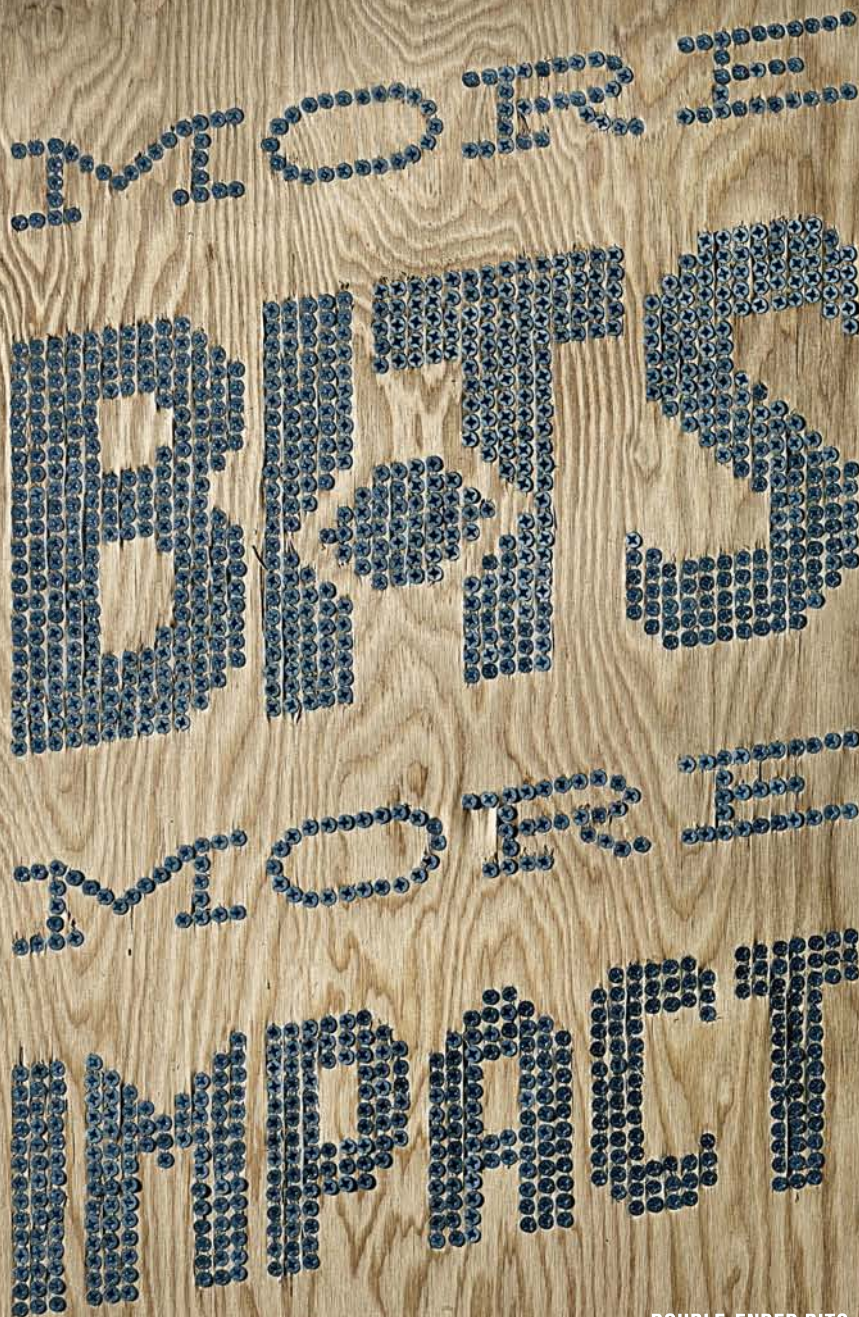
"The C3 31 is a brilliant machine which is simply super. I enjoy using it and I like to be around it. With most machines there is always something that lets it down, but this one has no vices and is easy to operate."



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The machines are occasionally pictured with optional equipment.
Please consult the price list for the various machine options.

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Full of the joys of spring



PHOTOGRAPH BY GMC/DEREK JONES

The country rustic vernacular Hungarian bench the Editor spotted on his travels

Of the 13 issues we produce each year, the ones that come out over the summer months are probably my favourite to put together. There's nothing wildly different about the content, it's just that our little team are generally firing on more than all their four cylinders when the walk or ride into the office is done under a clear blue sky. I blame the spring in my step on the discovery of what will now go on the 'projects to cover before I get old' list. I don't think I can remember a time when there were so many things on it. Now, it could either mean that time is running out or are my eyes just too plain big for my belly? Whichever it is, it calls for a major relisting and perhaps even a ranking system.

Quirky finds

The project in question caught me by surprise but after reading and thoroughly

enjoying *Chairmaker's Notebook* by Peter Galbert last month, I should have seen it coming. Tucked away in the back of a quirky and therefore fiendishly expensive antique shop sat a cunningly simple example of country rustic vernacular furniture, reputedly from Hungary. I did warn you, 'quirky', 'fiendishly expensive' – the clues were all there. The piece was a four or five seat bench with sticks for legs and smaller sticks for a back rail decorated with painted floral motifs beneath a dark varnish. Picture the sort of finish on a canal boat from the Black Country and you get the gist. A more genteel version and the closest design to it would be the Windsor-esque Shaker prayer bench. Despite the obvious hard life and humble origins of this example, there wasn't a loose joint on it and, more to the point, no signs of repair. I'm planning a re-visit for a closer look and to get some measurements next week. If I'm still bowled over, you can

expect to see one appear on these pages in the near future or at least before I get old.

Great projects

We've got a few things that might cause you to reorganise your list this month as well and inspire a little out of character workshop activity. From the College of the Redwoods we have a Krenov-inspired wooden plane project; an unbelievable egg beater drill restoration and a close look at the Tormek T4. We're also finishing off the screw vice on David Barron's Roubo style easy workbench. What can I say? We're having a blast.

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Furniture & cabinetmaking

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**Woodworking is an inherently dangerous
pursuit. Readers should not attempt the
procedures described herein without
seeking training and information on the
safe use of tools and machines, and all readers should
observe current safety legislation.**

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Front cover image by GMC/Derek Jones

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Woodworkers Institute
www.woodworkersinstitute.com*



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how do you go about cutting a 2ppi thread?

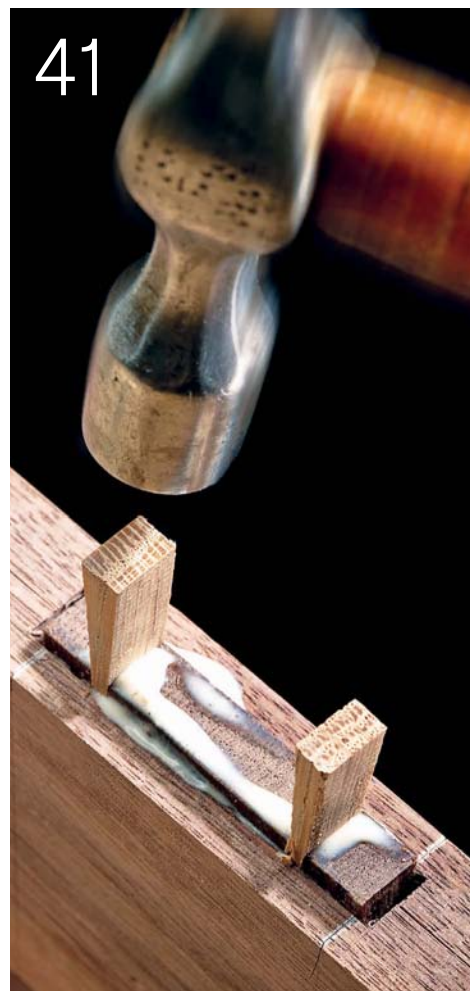
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Contribute to these pages by telling us about matters of interest to furniture makers. Call Tegan Foley on 01273 402 839 or email teganf@thegmcgroup.com. Please accompany information with relevant, hi-res images wherever it is possible

News & Events

CELEBRATION OF CRAFTSMANSHIP & DESIGN



PHOTOGRAPH COURTESY OF IAN SMITH

'Ribbon Table' in maple, by Ian Smith, from the 2012 event



PHOTOGRAPH BY YOUNG & NORGATE

The 'Animate' desk by Young & Norgate won the 2014 Best Use of British Timber Award

Celebration of Craftsmanship & Design (CCD) is the UK's largest selling exhibition of high-quality bespoke furniture, and it is back again this month. Established in 1994 by Betty Norbury, the show has evolved and grown significantly and now displays the work of around 70 designer-makers. The emphasis

is on furniture, but each year this is complemented by work from several other disciplines such as jewellery, art and glass.

There are several competitions held at CCD, including The Alan Peters Award for Excellence for emerging young talent in bespoke furniture, the Woodland Heritage Award, the

Best Use of British Timber, The Worshipful Company of Furniture Makers Design Prize and The Chair Competition.

The event takes place from 22–31 August, 2015 at the Thirlestaine Long Gallery, Cheltenham. For more information, see www.celebrationofcraftsmanship.com.



Fundraising for rebuilding homes in Nepal

Bobby Singh, a proprietor of a DIY business in south London and a father of two, has no links to Nepal, but he was so touched by the media stories of people killed, families destroyed and made homeless by the recent earthquake that he decided he wanted to help.

Bobby tried to join charities going to Nepal but he was hindered with red tape for vetting. This did not stop him, however, and he went to Nepal alone. He decided to help people in the villages in remote areas who have not had any aid or relief from other charities. Bobby and a team of four helpers, plus others, travelled miles through dangerous areas and mountains to hand deliver tarpaulins, rice, blankets and flooring mats to those who had nothing and were living under trees.

Bobby wishes to provide 500 semi-permanent living structures made from brick and corrugated sheeting for the roof, which cost about £100 each to erect. These structures provide a half-way home to the country being rebuilt and provide the people of Nepal with some normality again.

Bobby Singh has set up a Go Fund Me page to raise at least £50,000. If you would like to find out more and donate, visit www.weareonenepal.org.



PHOTOGRAPH COURTESY OF BOBBY SINGH

Bobby Singh wishes to build 500 semi-permanent living structures for those whose homes were devastated by the recent Nepalese earthquake

National Forest Wood Fair



PHOTOGRAPH COURTESY OF THE NATIONAL FOREST WOOD FAIR

Tree climbing is just one of the many events for you to enjoy at the National Forest Wood Fair

Calling all bodgers, woodturners, woodcarvers and axemen! Make your way to the National Forest Wood Fair and enjoy a great day out for everyone who loves trees, timber and making beautiful things from wood.

Held on Monday 31 August in the Beacon Hill Country Park, Leicestershire, this event regularly attracts over 100 exhibitors and demonstrators, plus crowds of over 5,000 from all over the country.

Buy planks and blocks of timber, browse second-hand tool stalls and see expert demonstrations by woodturners and craftspeople. Top Windsor chair-maker Peter Wood will be on hand to talk about his work and demonstrate his world

championship pole-lathe turning skills, and master craftsman Mike Painter will present a woodcarving masterclass.

Anyone aged 8-80 can try tree climbing and shimmy up into the canopy of an ancient oak tree using ropes and a harness.

The Forest Food Festival is packed with delicious locally-sourced food and drink, and once replenished, make sure you find the time to browse the tempting array of beautiful things made out of wood – perfect for gifts or treats for home and garden.

To find out more about the event and to purchase tickets, see www.nationalforestwoodfair.co.uk.

TIMBER TRADE NEWS Lightning damage to trees



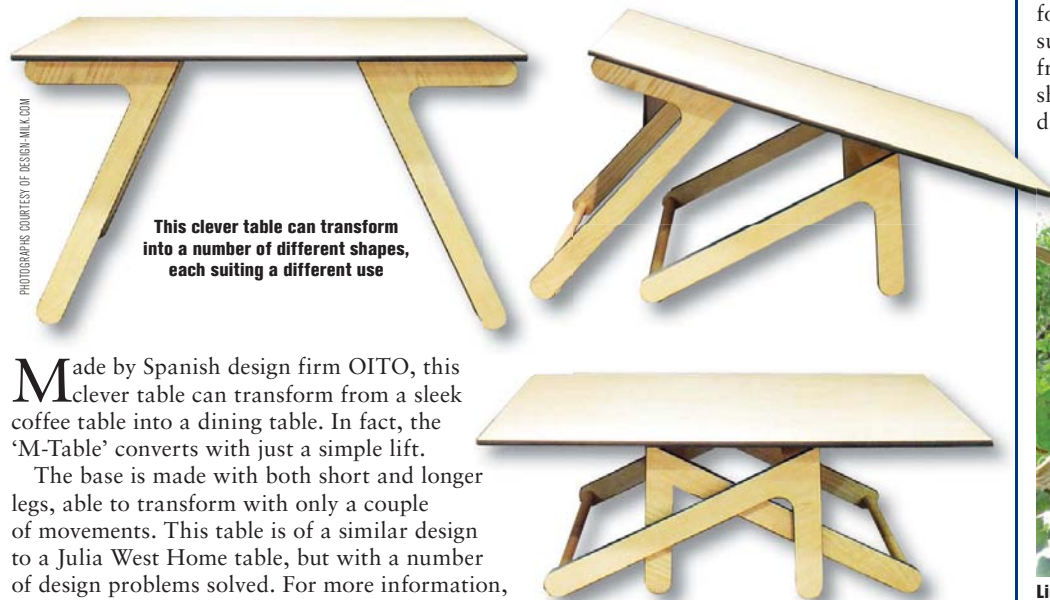
PHOTOGRAPH COURTESY OF WINIFRED COMMONS

A tree trunk that exploded after being hit by lightning

Thunderclouds moving in turbulent air accumulate enormous charges of static electricity, which are insulated from the ground by the atmosphere. When the charge becomes sufficiently large, the insulating effect is overcome and a 'streamer' discharges to the ground. This opens a return route back to the cloud, which allows the main discharge of energy upwards: this is the most energetic and visible part of the lightning. Tall trees are particularly prone to strike, since they are nearer to the cloud than surrounding features. The main upward discharge, passing through a tree, contains enough energy to instantly turn the water in the wood into steam. This will usually kill the tree and cause structural damage to the wood. Less severe strikes will blast a narrow channel of damage up one side of the trunk. Apart from the physical damage, symptoms include brown, dead patches of leaves, particularly on conifer (*Pinophyta*) hedges. Trees can be protected by lightning conductors, though this is seldom economic. I have found no discussion of the implications for woodworkers, but if there is any suspicion that timber may have come from a tree struck by lightning, it should be examined carefully for damaged and weakened areas of wood.

Chris Prior

Transformer table



PHOTOGRAPHS COURTESY OF DESIGN-MILK.COM

This clever table can transform into a number of different shapes, each suiting a different use

Made by Spanish design firm OITO, this clever table can transform from a sleek coffee table into a dining table. In fact, the 'M-Table' converts with just a simple lift.

The base is made with both short and longer legs, able to transform with only a couple of movements. This table is of a similar design to a Julia West Home table, but with a number of design problems solved. For more information, see www.oitointeriores.com.



Lightning damage to tree in Makeevka, Ukraine, 2008

Homefit Charity Golf Day rallies support from the furnishing industry's most prestigious suppliers

Corporate Liveryman Billy Quinn recently offered to organise a Homefit Charity Golf Event to raise funds for The Furniture Makers' Company. The Company were thrilled to discover that on the day a staggering £33,000 was raised for their charity, which breaks the record for a sum raised during a fundraising single event.

The day was held at the John O'Gaunt Golf Club in Sandy, Bedfordshire and 20 teams of three were each joined by

a member of Homefit for a full day's play. Many Homefit contractors and suppliers were involved in the day as well as a wide range of event sponsors.

Billy Quinn said: "It is a great privilege to be able to raise funds for our industry charity, which does wonderful work to support the furnishing industry and the people who are a part of it."

In addition to rallying support from the furnishing industry's most prestigious suppliers, B&Q Homefit also leads by



Billy Quinn – centre with Jon Coulson, Simon Robinson, Brett Stevens and Dan Truscott of the Blue Crush team

example as founding sponsor of The Furniture Makers' Company national School Design Prize programme. Their support has enabled the Company to establish their national School Design

Prize programme, which now rewards hard work and excellence by giving prizes to over 900 school children across the UK each year. For more information, see www.furnituremakers.org.uk.

Forgemasters' record 607 tonne casting pour

Sheffield Forgemasters International Ltd (SFIL) has completed its biggest ever pour with a staggering 607 tonnes of continuous molten steel transferred into a vast subterranean mould.

The record breaking feat in the company's foundry beats the biggest ever previous pour by seven tonnes and will create an ultra-large casting component, which will weigh around 320 tonnes once finished, taking six weeks to cool sufficiently to be excavated.

The pouring is the fifth in a series of 11 castings destined to become some of the largest cast components ever made by the South Yorkshire manufacturing

giant for a landmark £19m USD contract for established customer German company, SMS Meer.

Pouring 607 tonnes of liquid steel required five ladles to be poured simultaneously, with a sixth ladle used as a top-up. The steel is poured at more than 1,500°C and the casting will take six weeks to cool to about 1,000°C, when it will have solidified far enough to be dug from the sand mould.

SFIL will deliver six more similar castings over the next 18 months as part of the contract, which will see more than 6,000 tonnes of molten steel produced in total. Each casting requires multiple ladles of steel to be



The 607 tonne casting pour, which recently took place at Sheffield Forgemasters International Ltd

poured continuously. With the largest foundry facilities in Europe, SFIL is one of the only companies in the world able to manufacture ultra-large castings of more than

150 tonnes in weight. It has a long history of breaking world records for the largest castings ever manufactured. To find out more, see www.sheffieldforgemasters.com.

Carbon fibre and composites course with Kris Lamba

This two-day course takes place from 19–20 September, 2015 and offers an in-depth introduction to the world of carbon fibre and other composite materials. The course is aimed at those with little to no experience working with composites, but will also strongly benefit anyone who has any practical skill or knowledge of traditional 'wet lay-up' techniques. By the end of the

course, all delegates should be able to produce their own high-quality parts using the infusion technique. The tutor for this course is Kris Lamba, an ex-student of 'Robinson House Studio' who has experimented and developed a proficiency using these modern and exciting materials and techniques. The cost of the course is £400 including all materials. See www.marcfish.co.uk.



'Suspension Table' by Kris Lamba

Events



Edinburgh Art Festival

Edinburgh Art Festival

Edinburgh is famous for its many festivals. However, only the Edinburgh Art Festival is dedicated entirely to art. This year, the Festival will take place between 30 July and 30 August, with another varied programme of exhibitions, commissions and events. EAF attracts more than 250,000 visitors to Edinburgh each year and brings together the capital's leading galleries, museums and artist-run spaces. Most of the events during Edinburgh Art Festival are free, which means that you can enjoy exhibitions, performances, artist talks and tours without impacting on your budget. More than 45 exhibitions took place as part of the Festival in 2014, so we highly recommend that you keep an eye out for all the events, which will be announced as part of the Festival's programme for 2015.

When: 30 July–30 August, 2015

Where: Edinburgh Art Festival, City Art Centre, 2 Market Street, Edinburgh EH1 1DE

Web: www.edinburghartfestival.com



Turned bowls by Head&Haft design

Cornwall Design Fair 2015

The Cornwall Design Fair is one of The Duchy's largest design fairs, attracting designers, exhibitors and artists from all over Cornwall. This year, the event will be held in the beautiful formal gardens of the early 18th-century Trereife House, which will be transformed into a design paradise, with specialist food stalls, local musicians and huge marquees housing the best young and established designer-makers and their wares. Visitors are also offered a fascinating glimpse of the interior of the historic house, where they will find the 'curated design'

section of the fair – in which selected designer-makers have been tasked with creating a harmonious mix of contemporary design and the classic historic setting.

When: 14–16 August, 2015

Where: Trereife House, Newlyn, Penzance, Cornwall TR20 8TJ

Web: www.cornwalldesignfair.co.uk



Visitors to last year's Charnwood event

Charnwood Woodworking Open Day

This annual event is back this year featuring guest demonstrators from Coombe Abbey Woodturning Club, Trent Valley Woodturning club, Robert Sorby woodturning tools and Chestnut finishing products. Expect to see great offers across the full range of machinery and accessories, plus a free barbecue!

When: 15 August, 2015

Where: Charnwood, Cedar Court, Walker Road, Hilltop Industrial Estate Bardon Hill, Leicestershire LE67 1TU

Web: www.charnwood.net



Adams Axemen will be performing at the Stock Gaylard Oak Fair

Stock Gaylard Oak Fair

A country fair for those interested in timber, woodcraft, the countryside and conservation, the Stock Gaylard Oak Fair is a great day out for the whole family. Held on the Stock Gaylard Estate, a traditional country estate in Dorset, the fair will include demonstrations by Adams Axemen, Heavy Horse Loggers, Mere Down Falconry and The Great Big Tree Climbing Co.

When: 29–30 August, 2015

Where: Stock Gaylard, Sturminster Newton, Dorset DT10 2BG

Web: www.stockgaylard.com



See woodcarvers in action at Treefest

Treefest

Treefest, Westonbirt Arboretum's signature event, celebrates nature, trees and woodcraft with fun family activities, exhibitors and live music. Visitors will have the chance to meet skilled craftspeople and woodland workers, watch expert carvers in action and take part in a range of hands-on activities and crafts. There will also be displays of falconry and axe racing.

When: 29–31 August, 2015

Where: Westonbirt Arboretum, Tetbury, Gloucestershire GL8 8QS

Web: www.forestry.gov.uk/westonbirt

Record Power summer & autumn shows

During the next few months, Record Power will be appearing at various dealers' premises across the UK and Ireland to answer your questions and demonstrate products from their extensive range. At many of the events, exclusive show deals will also be available on the day.

When: 4–5 September, 2015

Where: Yandles Autumn Woodworking Show, Yandle & Sons, Hurst Works, Martock, Somerset TA12 6JU

Web: www.yandles.co.uk

When: 25 September, 2015

Where: John Davis Woodturning, The Old Stables, Chilbolton Down Farm, Stockbridge, Hampshire SO20 6BU

Web: www.johndaviswoodturning.com

Wychwood Forest Fair

The Wychwood Forest Fair has become a popular annual event celebrating the diversity and richness of both the natural world and the working and leisure activities of local people living within the bounds of the old Royal Hunting Forest of Wychwood. The Forest Fair is a major fundraising event to support the local wildlife and landscape conservation work of the Wychwood Project. This year, the event is being held at Lodge Farm on the Ditchley Estate, two miles east of Charlbury. Ticket price is £7 and under 12s go free.

When: 6 September, 2015

Where: Lodge Farm, Ditchley Estate, Chipping Norton OX7 4EU

Web: www.wychwoodproject.org

Chippendale school honours graduates

Two young Canadian and two UK woodworking students at the Chippendale International School of Furniture have won this year's top honours, with two of the students' pieces being exhibited at the Scottish parliament.

Student of the Year was Andrew Brassington from Ontario, whose course work included a monumental door made from locally-sourced Scottish timber, inspired by a silver birch (*Betula pendula*) sapling that he saw growing through the ruins of a collapsing barn in southern Ontario.

Design Student of the Year was Ria Da Costa, originally from Trinidad and Tobago, now also living in Ontario, who created her intricate 'Lennox' desk, named after her grandfather, with no less than 2,167 pieces of veneer on its surface.

Best Portfolio was awarded to Fiona Thorburn-Steel, who lives near Edinburgh, whose portfolio included a stunning cabinet in solid olive ash (*Fraxinus excelsior*) with a wenge (*Millettia laurentii*) veneer and ebony (*Diospyros spp.*) handles. Functional but elegant, the cabinet has flowing lines that complement the geometry of the piece and also make it a work of art.

The fourth top prize, Students' Choice of the Year, went to Rob Sykes from London. His 'Ruby-Rose' desk, named after his god-daughter and made from wych elm (*Ulmus glabra*), is based around the three Rs – with drawers whose interiors focus on aspects of writing, reading and arithmetic, complete with an abacus. There is a shelf for a Kindle or iPad, USB ports, and the cable is hidden within one of the desk's legs.

This year, for the first time, a number of pieces were exhibited at the Scottish parliament, including Ria Da Costa's and Rob Sykes' desks. The pieces were all chosen by Professor Demarco who said he was "overwhelmed by the quality of work that the students had completed."

To find out about courses and for further information, see www.chippendaleschool.com.



Andrew Brassington's door



Ria Da Costa with her 'Lennox' desk



Fiona Thorburn-Steel's cabinet



Rob Sykes' 'Ruby-Rose' desk

■ BUCKS NEW UNIVERSITY

Makita UK presents awards for excellence of design to Bucks New University students

Power tool manufacturer Makita UK has helped to mark the celebrations at the annual Art and Design Show at Bucks New University by presenting awards to students. The company presented the Makita Award for Excellence of Design combined with Excellence of Craft 2015 to a winner and two runners-up from the School of Design, Craft & Visual Arts at the University.

The award criteria included intelligent application of creative thinking; appropriate use of materials and processes and skills in the execution and manufacture of the product.

Award-winning pieces

Judged by Ray Wilby, Makita's senior trainer, awards were made to several talented Furniture students: Jacob Underwood took first place for his final three pieces, which were all live briefs set by the companies Argos, John Lewis and Ercol. Jacob's 'Bike away' is an ash (*Fraxinus excelsior*) and bent steel multi-functional communal bike storage unit; 'Lapso' is a portable office system for small living areas that features a bent steel frame with a sliding walnut (*Juglans*

spp.) surface, which reveals a removable leather satchel and, for a design brief and competition set by Ercol, Jacob designed a modern-day stackable dining chair suitable for production in the Ercol factory in Princes Risborough, Buckinghamshire.

Jacob won the competition and Ercol made his design into three prototypes. He was presented with a gift voucher for £600 worth of Makita power tools.

Runners-up

A runner-up prize was presented to Furniture student Wesley Cripps for a steam-bent chair from English ash and elm (*Ulmus procera*); a modern reincarnation of an altar table, with a steel underframe and a dovetailed draw and a home office portable storage/work unit made from veneered CNC-cut ply and perforated steel. Wesley received gift vouchers for £300 worth of Makita tools.

Juwon Seo, studying Furniture, was highly commended for her nest of tables to present the context of current domestic life; a new type of wall storage, which can have everyday objects stored on it using elastic cord and plywood and a desk



From left to right: award-winners Jacob Underwood, Wesley Cripps and Juwon Seo with Ray Wilby, senior trainer at Makita UK

known as 'Work Nest', which has a house-shaped wooden frame and soft furnishing accessories.

Sponsorship

Makita's sponsorship package at Bucks New University has included equipping workshops with Makita power tools, which are available to all degree course students. The students exhibited alongside courses, including Advertising Creative, Engineering Management, Fashion Design, Fine Art, Foundation Studies: Art, Design and Media, Furniture Conservation and Restoration, Graphic Arts, Interior and Spatial Design, Mechanical Engineering Design, Product Design, Textiles and Surface Design and MA Art and Design Practice. For more information, see www.bucks.ac.uk

■ NOTTINGHAM TRENT UNIVERSITY

Submerged 100-year-old lock gate turned into coffee table

23-year-old Furniture and Product Design Nottingham Trent University student, Katryn Furmston, recently designed a bespoke coffee table from a reclaimed lock gate, which had been submerged in water for more than 100 years.

Katryn, from Billingshurst, West Sussex, made the table for her major project as part of her degree and her work was on public display last month, alongside a host of other student works, for the 2015 NTU Degree Show.

Katryn says that she's a passionate designer with a flair for the unexplored: "I see upcycling not as just another green fad, but as a way of exploring my own creativity. After all, it's easier to make something new out of nothing than to make it out of something you already have."

With the idea of upcycling and reuse in

mind, she was set a brief to design a small piece of furniture from reclaimed timber, and after exploring a local salvage yard, she discovered what she believed to be an amazing find. The dark blue-black colour on the legs is where the iron bolts that held the lock together have reacted with the oak and the silt from the canal. With the timber having such a fascinating history, she felt this needed to shine through in the table's design. The outside of the timber has been left natural to show this history and all of the saw marks created in the manufacture of the table have been left, as this marks a new stage in the timber's life. The idea of having different levels came from the fact that lock gates are designed to help boats transition changes in

water levels. Named after James Brindley, the engineer who built some of the first canals in the UK, this project explores the concept of showing a product's history through its design. For more information, see www.ntu.ac.uk.



Katryn Furmston's coffee table, made from a 100-year-old lock gate

If you're a member of a collective and would like to raise your profile then submit a story to teganf@thegmcgroup.com

Editor's round-up...

Having trouble sourcing the right tool for the job? Derek Jones sets about identifying the essential tools and equipment on offer this month

All sterling prices include VAT, correct at time of going to press



PHOTOGRAPH BY GUY/CREEK JONES

We all have tools in our collection that we handle with kid gloves. You know the one I'm talking about: the tool that would have you diving like Alan Knott to save if it ever dropped towards the floor. Even though they're often built to withstand a lifetime of hard use, because that's why we value them, they live a charmed life. If you're one of those woodworkers who gets as much pleasure from handling their tools as they do working with them, then I think we've got the tool to end all tools. Ladies and gentlemen, let me introduce you to the Nut Saver. It's a simple idea that will have you kicking yourself when you see it in action. Designed with the Veritas range of speciality planes in mind, the Nut Saver means you will never have to feel guilty about cranking up the locking nuts on your plough plane with a pair of pliers again, ever. The crisp knurling will remain intact just as it was the day you brought it home and, what's more, your fence will be set rock solid.

The man behind this device is Bernard Billsberry, a highly skilled craftsman with an eye for precision and quality. The tools are hand made in small batches in his workshop in Wales from a range of hardwoods and stamped with a very classy traditional maker's mark. They are available in the UK directly from the maker – bernardbillsberry@hotmail.com – and in North America from Sterling Toolworks – www.sterlingtoolworks.com – priced \$37 and £24 respectively.

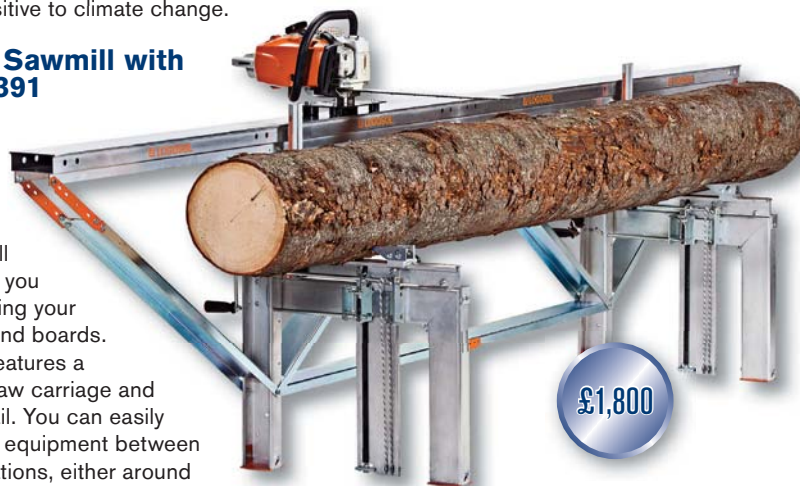
Lee Valley, if you're listening, be prepared for a run on your nuts.

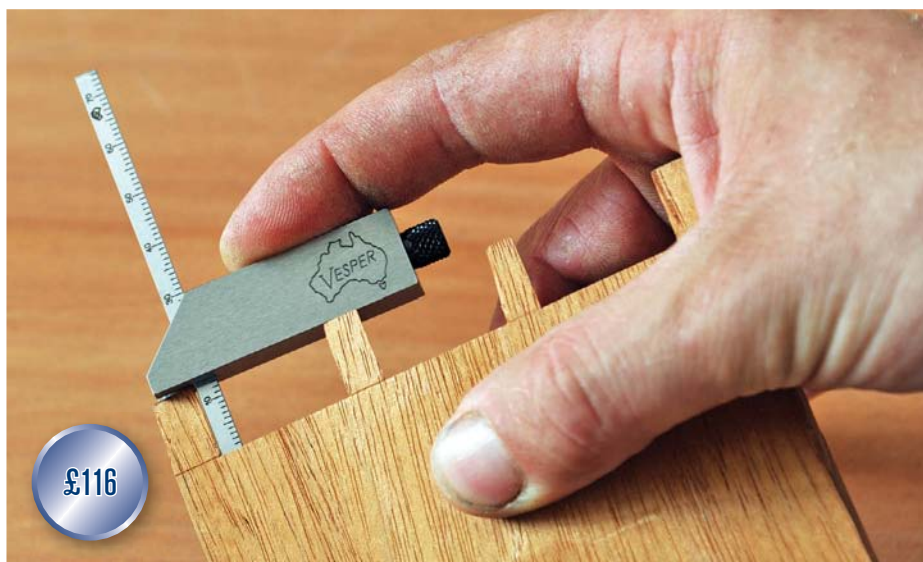
The other thing that caught my attention this month was a water-based grain filler by Aqua Coat. When we first started talking to Tonetech Luthier Supplies, the UK distributors for Aqua Coat, it was at the beginning of the year and their stock was being held up because of severe weather conditions in North America. Apparently, water-based finishes and extreme low temperatures don't mix. That's all behind us now so you can look forward to hearing how we got on with it in a few months' time. For now though, here's some kit that's not quite so sensitive to climate change.

Farmer's Sawmill with Stihl MS391

The Farmer's Sawmill from LOGOSOL has a sturdy design and all the functions you need for cutting your own planks and boards. The design features a lightweight saw carriage and a 4m guiderail. You can easily transport the equipment between different locations, either around

the yard or out in the forest. It only takes a couple of minutes to set up or dismantle for transporting or storing. On its own the Stihl MS391 chainsaw is well suited for forestry work and cutting firewood. The more powerful Stihl MS661 will get the job done a little quicker. All in all a perfect portable sawmill to convert logs into planks for drying or small building projects.

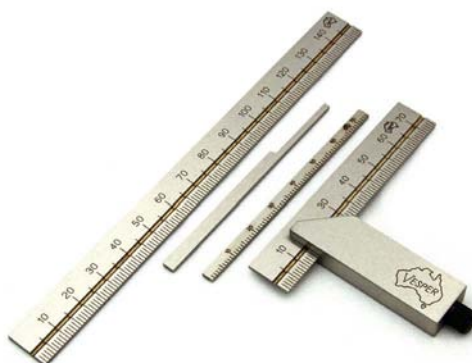
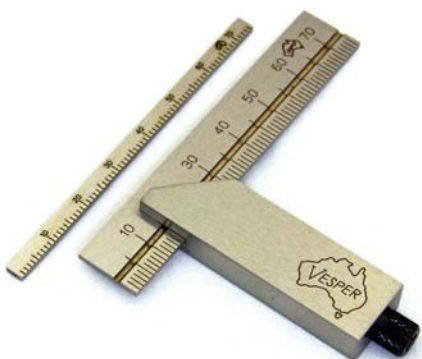




Vesper Tools' Precision Double Square

There aren't that many tool brands that are held in such high regard that we are unanimously in agreement over their form, function and quality. Vesper Tools have become the benchmark for accurate layout tools across the world and even after 10 years of producing the Double Square it's still a firm favourite with new and existing customers. Try one and you'll wonder how you ever got by without it. With so many possible uses for hand and machine tool woodworkers, it will soon be an essential item in your workshop. Designed to access the smallest and often most important details of cabinet work it will sit conveniently in your apron pocket.

These diemaker's squares were originally brought into the world of woodworking for checking inside dovetails, but their uses extend to a depth gauge that can be used for square as well as inside a mortise of nearly any size. They are also useful for machinery setups. Available in metric or imperial, the kits start with two basic blades. The full set has four, including a notched mini blade and/or the 150mm long blade. They have a spring-loaded body with a new mechanism to prevent the centre pin rotating when a blade is removed. Made in Australia from quality hardened tool and stainless steel with laser marked blades.



Veritas custom bench range

Axminster Tools & Machinery has just introduced a new and innovative range of Veritas bevel down bench planes. The range, which is made in Canada but put together to make complete planes in the UK, is exclusive to Axminster and allows the craftsperson to select from a number of different components and build their own unique plane.

Briefly, there are two blade options – O1 and PM-V11 – six variations on a rear tote, three for the front knob and three for the frog. Number crunching the figures reveals that there are 108 different options that could be applied to just one plane. Multiply that by the five planes in the range – No.4, 4½, 5, 5½ and 7 – and it becomes clear that there are 540 different permutations.

Parts for the planes can be purchased online at www.axminster.co.uk or from one of the company's seven stores. Once potential users have selected the components – body size, blade, frog, front knob and rear tote – trained staff will assemble the customised plane. It can then be taken away from a store or will be despatched in the normal way.



Custom built by Axminster

MASCOT LIGHT range

MASCOT LIGHT is the name of the new light workwear range from MASCOT. The range has been specially designed for work in Europe's large industrial companies. It contains nine new two-tone products, including work trousers, work jackets and a softshell jacket in two different colour combinations: royal blue/navy or dark anthracite/black. The range is offered in a broad

range of sizes, including trousers with three different leg lengths as standard.

MASCOT LIGHT offers quality for professionals and all products in the new range are made from hard-wearing twill material. The products offer extra reinforcement around the pockets and in other exposed places, so they can withstand daily wear and tear.



► Makita celebrate 100 years with anniversary products

Makita celebrate 100 years in worldwide business in 2015 and to mark the occasion in the UK has launched a series of additional power tools finished in a distinctive bright metallic blue colour. These products are limited-edition anniversary versions of tools in the current range and new, multi-product sets.

The new anniversary version of the Makita DHP481 18v LXT Combi drill features the brushless motor for extra power and run time that generates a best in class 115Nm of torque that will drill 16mm in masonry. This useful two-speed Combi drill will deliver up to 31,500 impacts per minute and has 21 torque settings. It is supplied with a single 5.0Ah Lithium-Ion battery and fast charger packed in a neat, stylish and protective black Macpac connector case.

The celebration model of the Makita DHP456 LXT Combi drill will punch a 13mm hole in masonry and can generate 50Nm of torque with 16 selectable torque settings. Weighing just 1.6kg the anniversary model is supplied with a 4.0Ah battery and fast charger in a robust Macpac connector case.

The anniversary DLX2040 twin-pack features the DHP481 combi drill plus the DTD129 LXT impact driver with brushless motor. This compact and lightweight impact driver benefits from the extended run time of the brushless motor and generates 160Nm of fastening torque and

up to 3,200 impacts per minute. This twin-tool pack is delivered with two 5.0Ah batteries and the new twin-port battery charger, which charges two 18V batteries at the same time. This combination kit is also packed in a Macpac case.

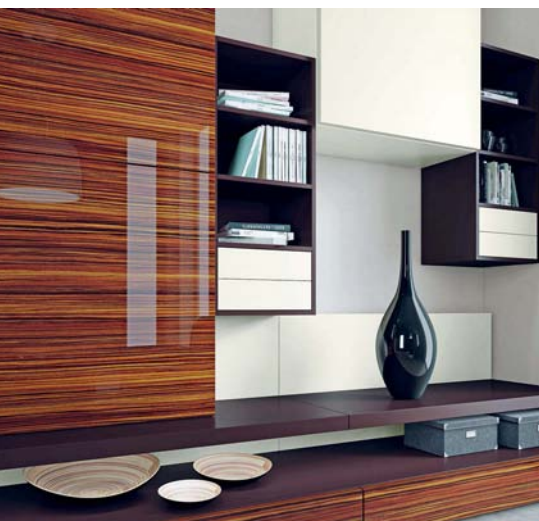
Designed as a complete installation service pack the Makita HP330DX100 is a useful power tool and the integral accessory set packed in one convenient

carry case. The HP330 10.8V combi drill has a 10mm chuck and can drill 8mm in masonry with up to 19,500 impacts per minute. This small but powerful drill generates 30Nm of torque. In this anniversary kit it is supplied with a 74-piece accessory set including drill bits, screwdriver bits and sockets. The kit includes two 1.3Ah batteries, charger and drill holster.



PerfectSense gloss & matt boards

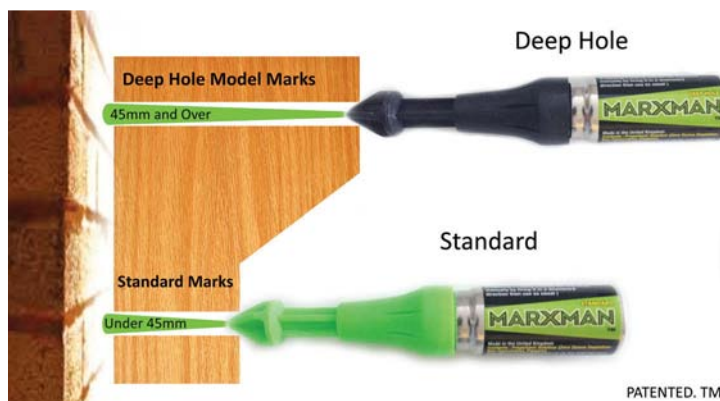
Designed for the furniture manufacturing industry, these two new products are made thanks to a revolutionary UV coating process, which help to provide a particularly hard-wearing surface with an up-market look and feel. Available in either gloss or matt finish, they are produced on a brand-new line in Germany and have a core of super-smooth MDF. The gloss boards offer a combination of a real mirror finish with a tough, smooth and flawless surface. The matt version is resistant to fingerprints and the gloss version is particularly scratch-resistant and robust. Matching edging is also available and each board measures 2,800 x 2,070mm with a thickness of 18mm. Available from September 2015, with prices TBC.



MINI TEST: MarxMan marking device

Having spent years using a chalk line for marking, this seems such a simple idea that it is difficult to understand why it hasn't been thought of before. The MarxMan 'pen' is a simple way to mark through a hole in something you want to fix onto almost any surface for subsequent drilling for the fixings. It does this by firing a small shot of bright green chalk, which clearly marks the centre of the hole onto the surface you are fixing to. I tried the MarxMan using timber 15mm and 45mm thick, both drilled with 5mm and 10mm holes and marking through onto a number of surfaces, such as rough treated timber, concrete, rough textured brick and render.

In every case, the position was clearly visible and I would estimate the hole centre could be determined within about 1mm or less – good enough for fixings into these materials. The MarxMan can also be used to simply mark directly onto a surface by positioning and pressing it in the desired location when it leaves a small bright green cross. For timber 45mm and over, a different MarxMan is available and both versions cost £9.95 plus postage and contain 200 marking doses. It is a patented, multi-award winning tool that you may not be able to do without once you have tried it and I will be putting one of each size into my travelling toolkit.



Centipede Sawhorse K100

The K100 is an expandable lattice framework that functions as the support structure for a steady work table. The lightweight lattice framework instantly expands and contracts much like collapsible camping chairs, with the legs converging to the centre in the collapsed position for easy storage and portability. Once the Centipede Sawhorse K100 is expanded, simply lay a piece of plywood or other material across the top to create an instant work surface. The ease of portability and setup make the Centipede Sawhorse K100 ideal for workstations that need to be set up and torn down daily or moved frequently from place to place. Beyond its utility as a work table, users can also employ the K100 to hold displays or for recreational functions such as picnics, garage sales and craft tables.

The K100 is sturdy and stable enough to support up to 1,500lbs and features six support points which are evenly spaced apart in its expanded position. It is sold in a kit, which also includes two Quick Clamps, four X-Cups and a tote bag.

£58



From
£6.35 per
sq.ft.

Engineered Italian ebony veneer

This new engineered Italian macassar ebony (*Diospyros celebica*) – see left of photo – available from Oakwood Veneer, has virtually the same colour tone, grain lines and overall visual appearance as the real macassar ebony sheet – see right of photo. Oakwood expects that its appearance will please even high-end interior designers who have a keen eye for subtleties.

While there are still reasons to purchase the real macassar ebony species – such as greater grain variations – engineered veneer is a good choice for large jobs, which require several to dozens of sheets and these can be easily matched across as many sheets as necessary. Another reason is that it is often difficult to find sheets of real ebony that meet design requirements, such as no knots, straighter grain and richer tone. The engineered Italian sheets have these qualities built in. Also, the engineered veneers can come at a much lower price, meaning a high-end ebony appearance can now be achieved on a much smaller budget.

STANLEY Tools' new 18V cordless power tool platform

This innovative new system will allow one interchangeable battery to be used across all FatMax tools in the 18V range. The versatile platform includes eight cordless power tools, ranging from an impact driver to an oscillating tool and flashlight. All products can be used with the same rechargeable battery providing the ultimate convenience as well as exceptional value for money. There are two STANLEY FatMax 18V batteries to choose from: a 2.0 Ah, ideal for light cutting, drilling and driving, while the 4.0Ah has a longer run time and provides the required power for heavy-duty cutting and grinding. Offering super-fast charge times of one or two hours respectively, you'll never be waiting long between tasks.

The platform can be used by existing STANLEY FatMax users, who can take advantage of the 'bare units', and those looking to create their toolkit from scratch can take advantage of the brand new Starter Kit, which includes an 18V hammer drill, an 18V impact driver, two 18V 2.0Ah Li-Ion batteries, as well as a charger, encased within a handy storage bag. *F&C*

£224.99



Contacts

Centipede Sawhorse K100

Contact: Rockler Woodworking and Hardware
Tel: (001) 800 279 4441
Web: www.rockler.com

Engineered Italian ebony veneer

Contact: Oakwood Veneer
Tel: (001) 800 426 6018
Web: www.oakwoodveneer.com

Farmer's Sawmill with Stihl MS391

Contact: LOGOSOL
Tel: 01361 840 389
Web: www.logosol.co.uk

Makita celebrate 100 years with anniversary products

Contact: Makita
Tel: 01908 211 678
Web: www.makita.co.uk

MarxMan marking device

Contact: MarxMan
Tel: 07815 831 811
Web: www.marxmanpen.co.uk

MASCOT LIGHT range

Contact: MASCOT
Tel: +45 8724 4820
Web: www.mascot.dk/en

PerfectSense gloss & matt boards

Contact: EGGER (UK) Ltd
Tel: 08456 068 888
Web: www.egger.co.uk

Nut Saver

Contacts: Bernard Billsberry; Sterling Toolworks
Email: bernardbillsberry@hotmail.com; chris@sterlingtoolworks.com
Web: www.sterlingtoolworks.com

STANLEY Tools' new 18V cordless power tool platform

Contact: STANLEY Tools
Tel: 01753 511 234
Web: www.stanleytools.co.uk

Vesper Tools' Precision Double Square

Contact: Vesper Tools
Tel: + 61 (0)3 5977 8901
Web: www.vespertools.com.au

Veritas custom bench range

Contact: Axminster Tools & Machinery
Tel: 03332 406 406
Web: www.axminster.co.uk



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PHOTOGRAPHS COURTESY OF YANNICK CHASTANG, UNLESS OTHERWISE STATED

The marquetry donkey



Yannick Chastang discovers what makes the marquetry donkey a thoroughbred among horses



The marquetry donkey has sustained its popularity and usefulness in serious European marquetry workshops for over 400 years. Many specialist schools, in France and abroad, still train their students using the traditional marquetry donkey. Additionally, some private workshops will use the marquetry donkey on a daily basis. Is this pure traditionalism or does the marquetry donkey still have a real place in the modern workshop? I was trained in the early 1990s using a marquetry donkey at the École Boulle in Paris and I built my first donkey at the same time. Since then, I have explored other avenues, such as the electric jigsaw and laser cut marquetry, but the marquetry donkey is still my preferred tool. For me, it is available to use at all times; it combines precision, ease of use, speed and cost effectiveness. Beyond all else, however, it is very enjoyable to use.

While the marquetry donkey today is gaining popularity in America and beginning to increase in use in France and Germany, it seems to have lost its place in the English workshop. The demise of the marquetry donkey in the UK has primarily resulted from changes in fashion and materials and today, few English makers realise its potential. In this article, I hope to persuade you to make some room for one in your workshop.

What is a marquetry donkey?

The French terms for the marquetry donkey are 'chevalet de marqueterie' or 'ane'. Essentially, the marquetry donkey is a foot-activated vice. Originally, the donkey was simply a vice fitted with a foot-activated quick-release mechanism. Over the years, it has been improved with the addition of a mechanically guided piercing saw. A marquetry maker, often called a 'marqueteur', with skilled hands

and good eyes, can cut up to 12 marquetry designs at the same time and at a level of precision close to $\frac{1}{100}$ th of a millimetre. The donkey's usefulness is not limited to marquetry; it is a practical piercing saw, ideal for cutting any thin woods and veneers.

A history of the donkey

The history of the marquetry donkey is closely linked to the development of the piercing saw, the invention of which has long been credited to silversmiths from the region of Augsburg. During the 16th century, Augsburg was a leading centre in the manufacture of luxury goods, including silver 'objets de vertues' and fine marquetry cabinets. The piercing saw enabled the cutting and shaping of extremely small pieces of wood veneers. More importantly, for the first time since the development of inlaid decoration, metal and hard materials such as mother of pearl, ivory, horn and bone could easily be cut and integrated into marquetry designs. Even nowadays, the piercing saw remains the best way to cut these hard materials. The earliest known representation of a piercing saw is, itself, in a piece of marquetry, which has been used to decorate the end of a goldsmith's bench. This bench, on exhibition at the museum in Ecouen, north of Paris, is dated 1565 and was made by Leonhard Danner for Augustus I of Saxony. It is decorated with a series of marquetry panels, including one representing a marquetry workshop, supposedly the marquetry maker's own workshop. Hanging on the wall are a large traditional carpenter's saw and a very small piercing saw. A traditional inlay knife is proudly



Marquetry panel from the Augsburg Art cabinet made for King Gustavus Adolphus of Sweden

displayed on the marqueteur's bench and from this we can deduce that both the knife and the saw were in use concurrently. The earliest representation of a marquetry donkey is again on a marquetry panel, this time inside an extravagant cabinet known as 'the Augsburg Art cabinet', now at the Gustavianum museum in Uppsala, Sweden. Made by Philipp Hainhofer in 1632 for King Gustavus Adolphus of Sweden, the cabinet contains a marquetry panel



Chevalet de marqueterie

portraying Hainhofer in his workshop. A marqueteur sitting at the donkey cutting marquetry can be seen in the background. Over the next four centuries, shifts in fortunes and fashions, and the migration of craftsmen from one country to another, resulted in the dissemination of techniques across Europe. Historical evidence of the marquetry donkey can be found in Germany, France and England. Numerous publications, mainly in German and French, illustrate the marquetry donkey. *The André Jacob Roubo 1772 Encyclopaedia* offers the fullest description of a working donkey, including a detailed plan.

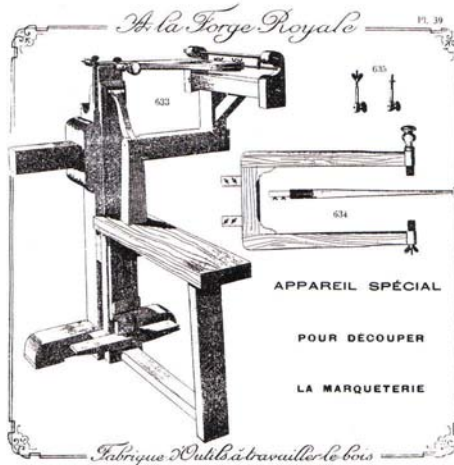
Unchanged design

The marquetry donkey appears to have remained unchanged in design and concept well into the 20th century when it can be seen illustrated in the c.1930 edition of the *Roret 'Marqueterie' encyclopaedia*. The first documentary evidence of the marquetry donkey being used in England dates from the second half of the 18th century but it is logical to assume that marquetry donkeys were introduced to Britain sometime in



Martin Ellias, c.1770. English marquetry cabinetmaking workshop. The Swedish National Art Museum, Stockholm

the 17th century, if not before. English marquetry benefited greatly from the immigration of Huguenot craftsmen at the end of the 17th century, taking a great leap forward with talented craftsmen like Gerrit Jensen and Cornelius Gole. By the 18th century, marquetry techniques and tools had become standardised all over Europe. England was no exception and this is illustrated by Elias Martin's painting of a cabinetmaker's workshop, c.1770-80. This



A plate from the 1930 edition of Roret 'Marqueterie' encyclopaedia

painting, now in the museum of Stockholm, shows a marquetry workshop, believed to be that of Chippendale, to whom Martin may have had access thanks to his family relationship with Georges Haupt, a Swedish cabinetmaker working in England. Martin's depiction of a marqueteur's workshop is rich in detail, his keen understanding of technical workshops no doubt due to his being the son of a carpenter. It clearly shows a marqueteur cutting small pieces of veneer on the marquetry donkey while one of his colleagues inlays them into a circular tabletop. It is worth taking note of the bright green veneer offcuts at the feet of the marqueteur. This same bright colour would have graced the original marquetry, which have now turned brown and colourless. Marquetry techniques at the time, in Chippendale's workshop and in those of most of his European counterparts, were a mixture of piercing saw work and inlay.

In its early versions, the donkey was little more than an upright vice. The piercing saw still had to be entirely manipulated by hand and this limited the size of the piercing saw itself and the size of the resulting marquetry. It was also impossible with a freely held piercing saw to cut with any degree of precision. These two significant

disadvantages were addressed with the addition of a horizontal attachment that enabled the piercing saw to be guided mechanically, greatly improving the saw's precision and ease of use. It is currently believed that these improvements were developed in Paris at the end of the 19th century, with the earliest representation of the improved donkey appearing in French tool catalogues at the beginning of the 20th century. The improved donkey became a standard tool in Parisian workshops during the 20th century and all marquetry students at the École Boulle in Paris have been trained on these donkeys since the opening of the school in 1886.

The advantages of the marquetry donkey over other marquetry techniques

Scalpel, knife marquetry, also called 'window marquetry' and described at great length in William Alexander Lincoln's book *The Art and Practice of Marquetry*, 1974, has become the most widely used technique in the UK. While great marquetry works have been produced by modern marqueteurs, in my opinion, this technique is extremely restricted in scope. Only thin and relatively soft veneers can be used, limiting the marqueteur's choice of materials. The colour palette of softwoods is constrained and, in order to extend the range of colours available, these softwoods are often artificially dyed. The piercing saw enables the marqueteur to cut hard and exotic woods, as well as materials such as metals, mother-of-pearl, horn, bone, ivory – now regulated – shagreen and even, more recently, CDs recycled and used as veneer. Additionally, scalpel marquetry can

lack precision as the knife blade inevitably has a bevel edge, forcing the marqueteur to tilt it slightly to create a perpendicular cut, which requires great expertise to avoid leaving unsightly gaps between elements. The piercing saw produces a straight cut, which enables each marquetry element to seamlessly abut its neighbour.

Laser marquetry has gained popularity within the furniture industry since its invention at the end of the last century. One of the main advantages of laser marquetry is the almost unlimited size of the marquetry produced, thanks to ever newer and bigger laser cutting machines. But, as the size of the machine increases, its cost inevitably follows. The initial investment in a laser marquetry setup is very high and, as a result, marquetry produced by laser remains expensive. Additionally, CAD design is time consuming and requires specialist knowledge and therefore added expense. Laser cut marquetry is not yet financially available or viable for the amateur or for the small maker of bespoke pieces. The only way to reduce the cost of laser marquetry is to increase the number produced but, for me, the artistic nature of marquetry does not fit the ethos of mass-produced works. At its best, marquetry is an art form that pays tribute to the beauty and intrinsic complexities of wood and variations from piece to piece are symptomatic of the medium. Another major disadvantage of laser marquetry is the slight burning of the edges of the veneer. It is particularly noticeable on light coloured veneers: if two pieces of light coloured veneer are placed next to each other, the burnt edges will make a rather unsightly darker line. Laser

marquetry certainly has its place in the future with increasingly cheaper equipment and ease of using CAD, but the question remains as to whether the essence of marquetry making, the hands-on choice of woods and effects, is not lost through using a computer?

The best contender to replace the marquetry donkey has been the electric piercing saw. This still permits the marqueteur a high level of hands-on control but mechanises the labour increasing efficiency and output. Many exist on the market but only a few combine quality of cutting with minimal vibration. The most reputable machines are those made by the Italian firm, Colombo Filippetti. These are the Rolls Royce of electric piercing saws, being strongly built, with an alternator to control the speed of cutting and use normal size blades. I have been using Colombo Filippetti for the past 15 years, in parallel with the marquetry donkey. There is one major disadvantage of the electric piercing saw, however: the cutting is almost continuous and slowing down the machine takes time, as opposed to the marquetry donkey that is fully hand-operated. As a result, cutting of marquetry by the electric piercing saw is not as sharp and precise as that from the donkey. I often have interns or new employees who have been trained on Colombo Filippetti machines and who confidently think they can produce the standard of work we do in my workshop using the electric piercing saw. Very quickly, they realise that while electric piercing saws have their place in the modern workshop, the resulting quality is no match to that it is possible to obtain on the marquetry donkey.



Draw-bored tenons hold the main frame to the feet



Main section and feet paired and awaiting assembly



The finished marquetry donkey

The future of the donkey

Virtually every time I teach marquetry, a new convert to the donkey is born and colleagues teaching marquetry around the world say the same. In the past, marquetry donkeys were widely available in tool shops but the drop in demand during World War II has resulted in very few sellers offering newly made donkeys. Making your own donkey is possible but can be a time consuming and difficult challenge – between 3-8 weeks of work depending on ability – also requiring the help of a metal engineer for mechanical parts, and of course requiring a good workshop setup. Buying your own donkey is possible from specialist suppliers, including myself, and at a much lower price than a laser marquetry cutter or a Colombo Filippetti.

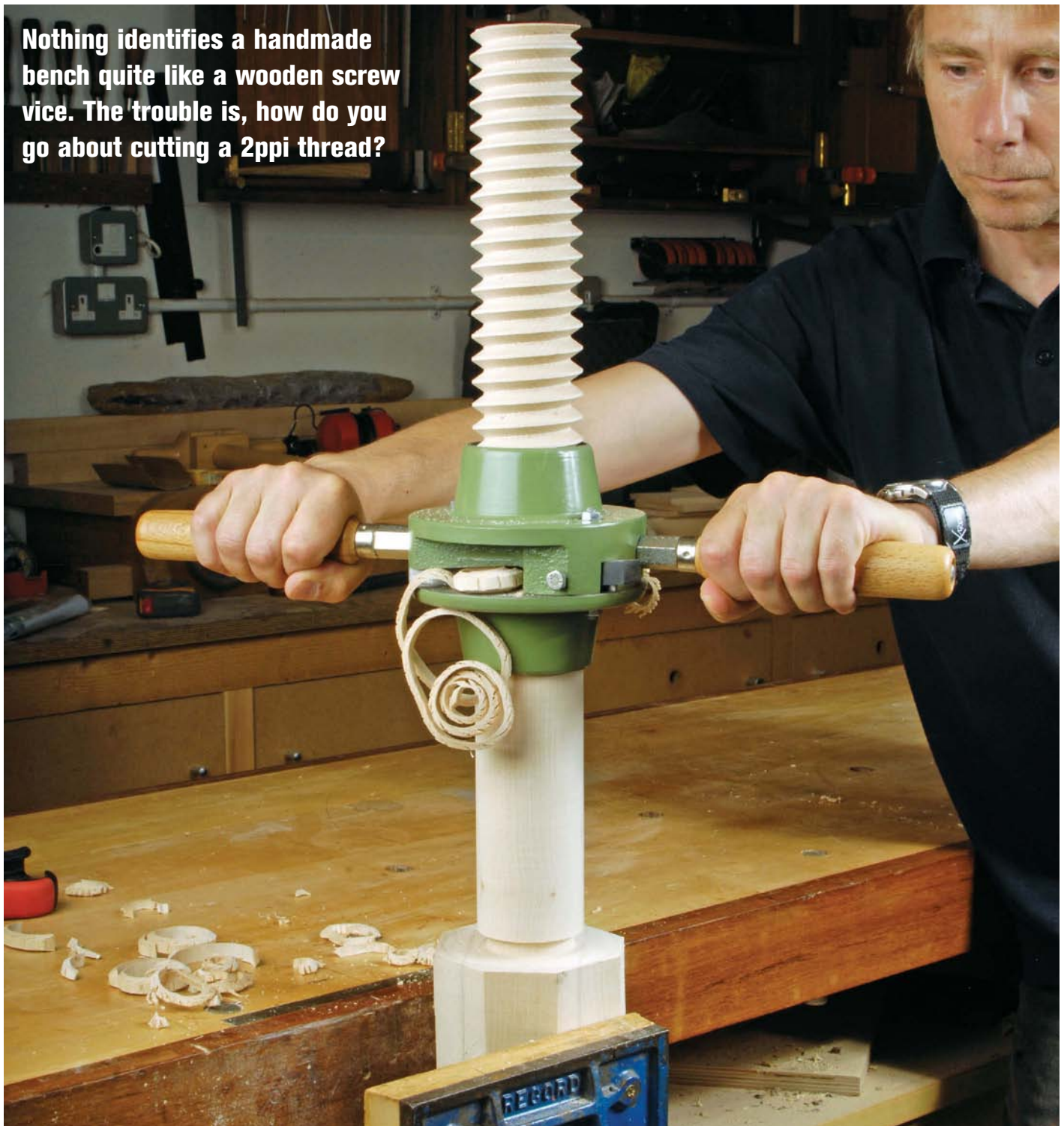
In this age of computer and computer-aided technology, it is comforting to find that there is room for a simple tool that keeps the values of handwork alive. The donkey is more than a piece of nostalgia: it has a very real place in my workshop, conveniently producing marquetry of the highest quality, both conveniently and enjoyably. As a regular user now for the past 25 years, I say, 'long live the marquetry donkey!'

Yannick's marquetry course

If this article has failed to convert you or you would like to experience the marquetry donkey for yourself, you can see one in action at the European Woodworking Show at Cressing Temple on 12 September. If you would like to investigate this remarkable device further, then why not consider attending Yannick's five-day course from 26–30 September, 2015. The cost of the course is £500 plus materials. You will be able to explore a range of different techniques and will produce several small panels over the five days. Each student will be assigned a brand new donkey. This donkey will be available for sale at the end of the course at a reduced rate equal to the fees for the course. For further information, see www.newenglishworkshop.co.uk F&C

Wooden screw vice

Nothing identifies a handmade bench quite like a wooden screw vice. The trouble is, how do you go about cutting a 2ppi thread?



PHOTOGRAPHS BY GARY/DEREK JONES

For some of us, building a bench from scratch to our own specification is an essential rite of passage; the holy grail of 'shop built equipment. Whether that turns out to be just a couple of trestles or a full blown Shaker with sliding deadman, it will be an adventure that will last a lifetime or longer if you've got it right. We traced David Barron's steps last month as he built

his version of the classic Roubo bench. This month, we're going to look at a feature that we all have opinions on – the bench vice.

With so many variations, it's impossible to identify a single style of vice that will do everything you want it to with the same level of finesse. Rather than make this article about the choice of vice, I'm going to focus on a style that has fascinated me for years

– the wooden screw vice as it appears on a typical post vice. First of all, I'm not expecting you to rush out and buy the necessary equipment to copy this project as it will set you back around £1,000. By comparison, a shop-bought wooden screw vice can be found for under £200 and given the amount of work involved, I'd say that was a fair price.

Tooling and timber



The 62mm diameter tapping tool from Dieter Schmid does not come with a wrench



The thread cutter is a beast



Find the flattest, clearest board of straight-grained maple you can

The tools used in this project were loaned to us by David Barron, following his Roubo bench article in last month's *F&C*. The hardware is a heavy-duty spec and intended for professional use. It was bought from Dieter Schmid Fine Tools in Germany where presumably there's a healthy market for wooden screw vices! The box cutter – or die – has two gouge-like cutters that can be removed for sharpening and we were on strict instructions not to remove them, as they are fiddly to reset. The cutters are not identical and complete the thread profile in two cuts: the first removes about half the waste and the second the remaining material to leave behind a perfect thread.

The other part of the thread is cut with an equally robust tap with three separate cutting edges increasing in size drilled and ground into the metal thread. The scale of these tools is immense compared to the largest wooden thread cutting sets available, typically 38mm (1½in). The effort required to use them is commensurate with their size and gives the upper body a good workout.

A 2ppi thread equates to around a 62mm diameter section and I started with a 70mm-thick board of maple (*Acer campestre*). It's essential to select a board with the straightest grain you can. Knots and other defects should be avoided.

Bulking up

The thick end of the screw, where the tommy bar handle is passed through, determines the overall width of the stock. I set this at around 95mm and planed all four faces of the board. Realising that timber from the same end of the board would be more stable, I decided to cut them over length by enough material to build up the thicker end. Before cutting these extra bits off, however, I took the opportunity of removing all the machining marks on both

sides where the glue lines would be. After splitting the offcuts with the aid of a rip saw, they were glued to the central column. The square section required to take the thread was then marked out and the waste removed on the bandsaw before handing over to our in-house woodturner. The columns were turned to match closely to the internal diameter of the thread cutter – around 62mm – leaving the handle end with flat sides to secure in a vice.

Irwin Marples saw blade



The Irwin Marples 48-tooth General Purpose blade will tackle 70mm maple with no problems

We've been running an IRWIN Marples General Purpose saw blade in our Record TS250-RS tablesaw for almost a year now and I half expected the combination to let me down when it came to ripping up the material for this project. Bearing in mind I was right on the limit of the blade's capacity, it chuntered through without a problem. This blade has had everything thrown at it over the last few months but shows no sign of giving up. They are quiet, i.e. no whistling or ringing, and leave behind a very good edge. IRWIN has put a lot of effort into designing these blades and it's paid off. For an excellent all-rounder, you need look no further



Prepare the stock on all four faces



Mark out sufficient material to build up the thick end of the column



Remove any machine marks while the board is still in one piece



Split the offcut in two



Mark the extent of the thread along the length of the column...



... and remove the waste to the shoulder



Take the corners off the large square end

Final checks



Position the column vertically in a vice



Use a level to help you get a clean start

It's quite a tense moment preparing to start the thread cutter with the amount of material and labour already invested, but in hindsight, I'd say there was less to worry about than using a smaller box cutter and here's why: the first part of the thread cutter is without teeth, therefore resembling a tube. As long as the column is a snug but free running fit inside this tube, the likelihood of skewing off track is limited. That said, it's wise to position the column vertically in a vice and check that the tool is horizontal when you make the first rotation. Once started, there's no need to back off to encourage the release of waste from the tool – it coils out of its own accord. The only alarming thing is the slightly unnerving sound it makes.



Use the flats to secure the column in your vice



Probably the biggest shavings you will ever produce in a single pass

Adjustable boring bit



Wealden's D100 adjustable boring tool



Take the time to run a few test holes

This adjustable boring bit from Wealden Tool Company – D100 £56.90 inc VAT – is a fantastic tool for drilling odd sized holes. It comes with two cutters and has a range from 24-50mm. Replacement parts can be bought when they need replacing. It's not the easiest thing to set up for an accurate cut first time, but I usually get it by the third attempt

Nut threading



Set the nuts in your vice with a level

The nut for this thread was made from maple from the same board as the screw thread but, in some cases, you might consider cutting this part of the mechanism directly into the leg of your bench, as David has done in the past. Sizing for the hole to make the nuts was taken off the tapping tool. As with the thread cutter, there is plenty of lead on the tool to help with registration but like before, there's no harm in setting up with a level to ensure a perpendicular hole. There's no getting away from the fact that for about 60° of the arc the cutting tips will be hacking straight into end grain. It's not pleasant and it does split. I've heard it said that soaking the nuts for a week or so in linseed oil after the through hole has been bored helps to reduce it. We asked David about this and he's not convinced there's much benefit considering the effort and mess. We found that there was a lot of breakout at the start and end of the cut but you could remove this by running the nuts through the thicknesser.



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Drilling for the tommy bar

When the thread has been cut on the column, you can drill the through hole to take the tommy bar handle. Clamp a couple of pieces of scrap either side of the column square to the bench and parallel to one another. Calculate the middle of the column and project a line that corresponds to the centre left behind from turning the stock. Drill through the widest part of the column and not the lippings as the constant stress from the bar handle could cause them to fracture. All that remains now to complete the screw thread is to make the tommy bar handle with a detachable knob at one or both ends and return the thread section to the lathe to round off the thick end of the screw.

Attaching the screw thread to the jaw of your vice is done with a two-piece washer or garter, as it's usually referred to. This fits into a channel at the base of the shoulder and must exceed the diameter of the thick end of the column to allow for fixings. The garter is effectively a bearing and would benefit from being made from an oily wood, such as lignum (*Guaiaacum officinale*).



Clamp two pieces of flat timber to the column



Extend the line to the centre point on the end to locate the hole for the handle



Drill through the widest part of the column



A two-piece garter is used to fix the screw thread to the vice jaw



Make the bar handle with one or two loose knobs for the ends

Conclusion

As you can see, there's a lot of work involved to make a single screw thread like this and that will make it all the more pleasing to use. I'm looking forward to installing it on the #lowfatroubo – see David Barron's article in *F&C* 234 – and seeing if I can break the habit of a lifetime and leave my quick-release vice behind me. I'm expecting to apply a coat of wax every so often to the moving parts until they work up a polished surface of their own. I'm also grateful for a damp-free workshop 12 months of the year. *F&C*

Resources

David Barron Furniture

Web: www.davidbarronfurniture.co.uk

Dieter Schmid Fine Tools

Web: www.fine-tools.com

IRWIN Marples

Web: www.irwin.co.uk

Wealden Tool Company

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A typical example of a good drill for restoring. The body is worn, the gears are stiff, but everything is there waiting for a little TLC. And below, restored to its former glory

Return to glory

Aaron Moore shares his techniques for a complete overhaul of a classic eggbeater drill



A basic hand drill, such as an 'eggbeater' drill, is one of the most useful and inexpensive tools to have in your workshop. Few are manufactured new today and those that are don't come close to the quality of the vintage models. The only exception to that was the CT-6 drill made by Bridge City Tool Works, but it is sadly no longer in production. As a result, the CT-6 can easily fetch over £400 these days, so unless you have that kind of coin lying around, let's get back to the abundantly

available vintage models. I use two Millers Falls drills all the time – a No.2 and a No.5A – but other quality drills were also made by Stanley and Goodell-Pratt. All three of these brands, as well as several others, are commonly available today.

I can't say enough good things about these tools, but you may be thinking: "I've used these drills before and they're garbage," to which I would reply: "You have never used a nice one." A properly tuned drill spins effortlessly and with a little practice,

provides the user with incredible control. One downside to these drills, however, is they weren't designed to be taken apart for repair. The handles are pinned and peened in place so restoring an old drill presents a few challenges, which can be overcome. What follows in this article is my basic approach to hand drill restoration, which requires no elaborate tools or procedures, just a drill press. I suppose there's some irony in needing a drill press to restore a hand drill, but I digress...

Acquiring the drill

The first thing you need to do is go out and purchase a drill from one of the usual sources – try looking on eBay, at flea markets, tool shows, or if all else fails, steal one from a fellow woodworker! You need to look hard for three things: solid handles without cracks or a loose fit, gears with no chipped or missing teeth and a complete chuck, including all three jaws and the associated springs. Obviously, major flaws, such as missing parts, cracked or welded bodies, or completely rusted out drills are no good, but those are often thrown out and never make it online or to the flea markets. Most drills I've seen for sale are in at least satisfactory condition and can be had for £7-20, although drills in really good condition will often run to somewhere between £45-80.



Using properly sized screwdrivers, disassemble the drill as shown

Disassembly/chuck tune-up

With the drill in hand, the restoration process can begin. Start by taking everything apart as shown. Be sure to use properly sized screwdrivers, preferably with a hollow-ground tip, so the screw heads don't get chewed up. The chuck can be disassembled for a really thorough cleaning, but if everything is working, I just soak the chuck overnight in WD-40. Taking the entire chuck apart can be tricky, especially when putting it back together, so don't go down that road unless you really need to. To get the chuck apart, there are usually two holes or slots on the top of the chuck that allow a tool to unscrew the top portion from the main body. The split-line between the top and main body of the chuck is often hard to see and begins right where the knurling pattern starts.



Leave the chuck assembled unless it absolutely requires a full cleaning. You can see the slots on the top of the chuck where a tool can unscrew the top from the body. The top portion of the chuck stops right where the knurling pattern begins



Drop the chuck in some penetrating oil, like WD-40, and let it soak for several hours to loosen up jaws and springs

Screw cleanup

The few loose screws that were removed can be cleaned up on the drill press in seconds. Place the screw in the chuck with gentle hand pressure so the threads aren't damaged – do not use the chuck key. Then, use a smooth mill file to remove the major dirt, corrosion and dents. After a few seconds of filing, check your work and switch to 220 grit abrasive. Go up to 300-400 grit to achieve a nice polish, then repeat this process for all the screws you removed from the drill.



Gently chuck the screws into the drill press and file the tops clean of dents, scratches and corrosion



After filing, polish up the heads with some abrasive



After a few minutes, the screws will be as good as new

The side knob

Turning to the handles – that's a lathe joke – there are typically three to deal with. The easiest is the side knob, which should simply unscrew from the body. Chuck it into the drill press just like the screws and start sanding.



Chuck the side knob into the drill press and start sanding

The main handle

The main handle can't be separated from the body, which makes sanding it a little frustrating. What I find works well is to wrap the small gear with tape – avoid tapes with a lot of stubborn adhesive like duct tape – and then carry that tape around the body, the screw post for the chuck and back down again. This locks the free-spinning screw post to the body, which means that the screw post can be chucked into the drill press just like the screws and knob. Because of the weight and length of the body, run the drill press at a low speed – something around 400rpm – and sand the handle with even pressure from both sides at once. Pressing the handle between two pieces of abrasive keeps everything balanced. When the handle is sanded to satisfaction, again, apply any stain and finish you like and set it aside to dry.



Cleaning up the handle and knobs can be a challenge, but there's a simple solution for each

Both the wooden knob and the metal ferrule can be sanded/polished at this point. Apply your preferred stain, finish and set it aside to dry. The other two handles are a little more difficult in their setup.



By wrapping tape around the chuck gear and carrying it around the body, the chuck post becomes locked to the body. Mount it in the drill press and run it at a low rpm. Sanding the main handle is now straightforward



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The crank knob



Clamp a post in the drill press and run a belt from the post to the ferrule on the crank knob. With a little tension, the knob should spin quite easily for sanding and finishing

The last wooden piece to address is the crank knob. Again, this can't be removed from the crank arm as they are typically riveted/peened in place. To get around this, install a large diameter post into the drill press – I use a 12mm centre punch and track down a timing belt. These are found in a lot of mechanical devices or can be purchased online fairly cheaply. Wrap the belt around the centre punch and the ferrule on the knob, take out the slack with gentle pressure and clamp the crank arm down as shown. You may want to spin the drill press by hand at first to make sure there aren't any wild belt tracking issues that could damage the knob when the press is fired up, but you should find the knob is spun by the timing belt quite easily. Sand and finish the small knob as before. The knob may slip a little when sanding, especially if you're using really aggressive abrasive or pressing too hard. Fortunately, it's small so there isn't a lot of sanding to do. Just take your time and keep your fingers clear of the belt to avoid a pinch. When the knob is done, you can also scrub the crank arm with a steel brush and/or steel wool.

The chuck

With the wooden parts out of the way, we can now turn our attention to the metal. The chuck should already be cleaned and working smoothly, but it may have some rust or staining that you'll want to address, or ignore depending on the severity. For getting rid of rust, I like to use Evapo-Rust. The chuck can be scrubbed with a steel brush, especially to clean out the knurled portion, but there isn't too much you can do here. You can install a matching piece of threaded rod to the chuck so the whole thing can be thrown in the drill press for polishing, but obviously any sanding or polishing you do will start to remove or minimise the knurling pattern. Do the best you can and move on.

The crank gear

For the crank and body of the drill, I like to use enamel paint. I'm sure there are several brands out there, but I use Testors brand and have no complaints. I would recommend going with the gloss version instead of the flat finish, typically red on the crank and black on the body. I've tried the flat and it just looks wrong on the metal even though I typically prefer a matt finish on my wood projects. I like to brush the paint on so I can ensure it doesn't get into the gears and oil holes and it flows very nicely, so I've never had an issue with brush marks. Starting with the crank, clean off any obvious grease, rust, or dirt and scrub the teeth clean with a steel brush, then the paint can be applied. Two coats will usually be plenty, but make sure it has fully dried between coats and before you start putting the drill to use. Depending on the

temperature and humidity, this paint can take anywhere from 2-10 days to completely dry. Basically, if it has any tackiness to it, wait longer. I like to over-paint the gear's edges a little bit to make sure I get full coverage, but do your best to keep the paint out of the gear teeth. The excess paint is removed in the next step.

When the paint has dried, slide a bolt through the centre of the gear that matches the diameter as snugly as possible. Clamp it down with a nut and then chuck the entire assembly in the drill press. Wrap some 220 grit abrasive around a hard surface like a small block of wood, then grind the top and side edges to remove any dents, dirt, or excess paint. Move to a 300-400 grit abrasive for final sanding and add a little oil or wax to help protect the exposed metal from rust.



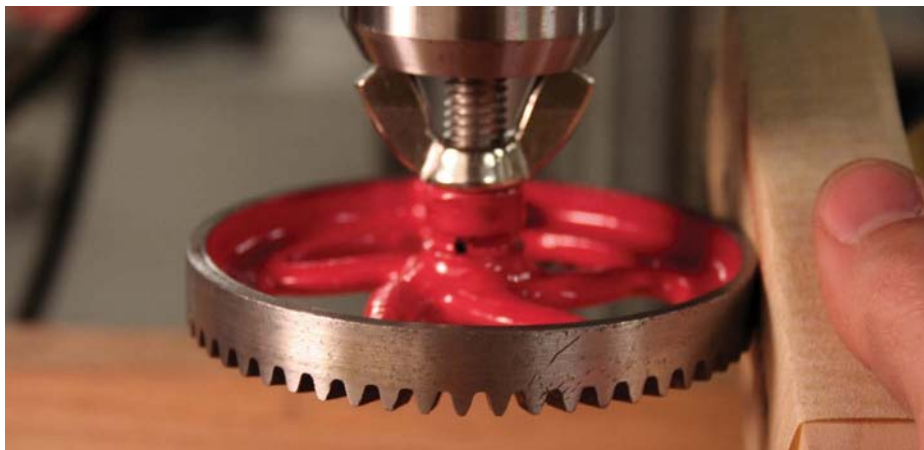
Painting the main gear is simple, just try to avoid getting paint between the gear teeth



It's easiest to paint right over the top edge; this will get sanded clean later on



Place a snug-fitting bolt through the gear, lock it down with a nut, then chuck the entire assembly into the drill press



Wrap some abrasive around a block of wood and polish the side and top edges. Make sure the paint is completely dry before doing this or the metal dust will get embedded in the paint

The body

The body is handled in a similar way to the crank. Again, clean the body as needed to remove any dirt, etc. and you may want to wrap the newly restored handle in some cloth or cling film to avoid accidentally getting paint on it. Using black gloss paint, coat the entire drill being very careful to avoid getting any paint on the gears or plugging up the oil holes. The best way to do this is to use a relatively small brush – about 6mm wide is ideal – and work at a steady pace. If you miss a spot, you may find it's better to let the paint dry, then go back and get the missed area on the second or even third coat. Trying to go back after a few minutes to touch up your work may cause the paint you've already laid down to pull, which can create drag or brush marks. It may also be tempting to simply touch up a few chipped areas with the paint and walk away, but the colour and shine of the old paint compared to the new will never be a perfect match and after going to all the effort of restoring the tool, I think it's worth painting the entire body no matter what. After a couple of coats of paint the drill should be ready for re-assembly and fine-tuning.



Wrap the handle in a cloth or cling film to keep it clean then start painting the body. Take your time and keep the paint clear of the gears and oil holes. I like to clamp the chuck post in a rubber-jawed vice so I can rotate the drill as I work and then walk away to let it dry

Re-assembly

When the paint has fully dried, put the drill back together again using properly sized screwdrivers. Make sure the oil holes are free of any dirt or paint you may have accidentally brushed into the holes. If necessary, clean them out with a nail. Now put a few drops of lightweight machine oil, such as 3-in-One in the chuck and the oil holes. The drill should spin freely and with very little slop between main gears. Too much clearance allows the gear to

slide back and forth on its post, which makes drilling harder to control. You can add a shim to the gear to reduce the play, but you will probably need to make your own from plastic shim stock in order to find something with just the right thickness. To be clear, this shouldn't be necessary on most drills, but if you're noticing a lot of gear movement when drilling and it's throwing you off your game, adding a shim can definitely help you out.



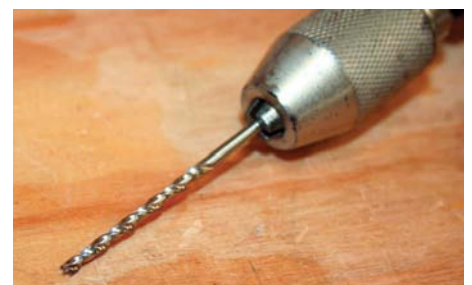
When everything is ready, re-assemble the drill and it's nearly ready to go to work



There are typically two or more oil holes as shown here. Clean the holes out with a nail if need be, then add some lightweight machine oil and work it into the gears



If the drill has a handle that unscrews for bit storage, add some wax to the threads to help preserve them



Unless you're a collector, you shouldn't feel compelled to track down the original straight-fluted bits – modern bradpoint bits work better and are readily available

Conclusion

One last note about these drills: many come fitted with a hollow handle that has a cap which unscrews for storage of the original straight-fluted bits. You should wax the wooden threads so the cap will unscrew with ease, but don't worry about using these bits specifically. Hand drills are typically intended for drilling holes up to 6mm diameter – larger than that and you should switch to a hand brace with auger bits. Most drills won't come with the original bits today and they can cost a fair amount to replace. The truth is that modern bradpoint bits work better and are readily available, so unless you're a collector, you shouldn't feel compelled to track down the old bits. Now, regardless of what bit you're using, chuck it in and get to work. Your drill is now ready for another few lifetimes of service. *F&C*

Supplier details

Bridge City Tool Works
Web: www.bridgecitytools.com

Evapo-Rust
Web: www.evapo-rust.com

Millers Falls Co; Goodell-Pratt
Web: www.oldtoolheaven.com

Testors enamel paint
Web: www.testors.com

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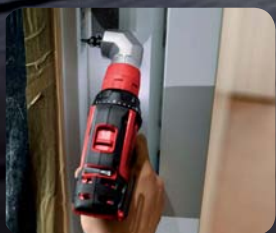
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PHOTOGRAPHS BY THEO COOK

Krenov-style wooden hand plane

Theo Cook shares his insight from studying at the Krenov School and shows us how to make this wooden hand plane, inspired by the great man himself

My first encounter with making wooden planes was at the James Krenov School of Furniture in 2002. At first I didn't see the appeal of making a wooden plane when I'd been happily using my Stanley 5½ for the last three years.

I was traditionally trained at the Edward Barnsley Workshop, Hampshire and was three years into my five-year apprenticeship when I was offered the chance to do a year at the Krenov School at the College of the Redwoods in California. I jumped at the opportunity of a year in the United States, especially at such a prestigious workshop.

After a few months of joint making and planing the perfect board, we were tasked with making three separate planes: a smoothing plane, a shooting plane and a curved bottom plane.

At first, we were given all the materials to build them plus the blades. I'd never seen blades like these before – they were so much thicker than those I was used to, and far better quality. I found the experience of making the planes deeply satisfying; you could really make them your own.

When using the planes I had made, I was surprised that there was no need to wax

the soles: they glided across the wood with ease and were a very different experience compared to the metal planes I'd been used to. Naturally, the soles would suffer from wear a lot sooner than a metal plane but when needed, it was easy to flatten them by putting a strip of abrasive on a reliably flat surface such as a machine bed and sand them flat. In fact it's a good habit to get into to ensure your wooden planes remain flat throughout the year.

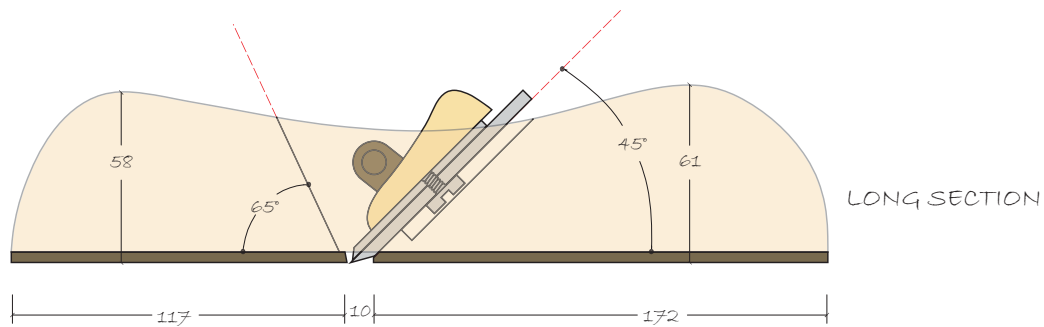
It takes a little while to get the hang of using and adjusting a wooden plane. They are a very sensitive tool capable of producing the finest shavings you can imagine. Setting them up to work accurately requires a delicate touch, usually with a small hammer. With practice you can make micro adjustments to the blade projection and setting without having to worry about a sloppy mechanism or backlash. Taps to the side or top of the blade are all that's required here.

I have probably made in excess of 20 planes over the years since I completed my year at the Krenov School, many for friends and colleagues who have helped me along the way. I have six that are a permanent fixture

in my toolchest and a few special ones at home. I wouldn't say they are in constant use but then neither are all my metal planes. If I need a plane for a particular task I generally consider if I can make it out of wood first. My scraper plane is a good example and extremely good on tricky grain or delicate veneers. I am now working on a skewed low-angle shooting plane for my collection – it's proving to be the hardest one to make so far.

I can truly say that my wooden planes have been an essential part of my tool collection throughout my career and a joy to use. I know there is a metal plane for almost every process in cabinetmaking and some are very expensive, but in my opinion, you can't beat making furniture with the planes you have made for yourself.

Here, I'm going to share my method of making a basic smoothing plane with a bed angle of 45°. The technique can be adjusted to produce planes of various types and once you get the hang of it, you can easily produce them in small batches. Before you start making your plane, copy the drawing at 1:1 scale including the blade and chipbreaker. You'll refer back to it frequently. ➤



Timber & blade

If this is your first plane, then I would use sycamore (*Acer pseudoplatanus*), as this is an easy timber to work and a relatively low-cost. If this isn't available a comparative hardwood will suffice. The straighter the grain the better and obviously avoid anything with knots or wild grain. A good way to buy timber for plane making is in the form of a turning blank. You don't want to buy a whole plank of wood for just one or two planes. Be wary of some species though as they are valued for their characterful grain. Plain and simple is best. The perfect size for this

project would be around 350 × 80 × 80mm – this will be large enough for cutting the body and sides out of one piece.

I would also avoid any exotic woods for your first plane. Get a few planes under your belt before moving on to hardwoods, such as Macassar ebony (*Diospyros celebica*) or rosewood (*Dalbergia retusa*) or anything hard to work. Select the most stable piece of wood you can. Typically this will be quarter sawn with a gentle curved grain pattern, evenly spaced on the ends. You will also need a different wood for the sole – lignum

vitae (*Guaiaecum officinale*) is best, as it's oily and very hardwearing. I use Timberline in Tonbridge, Kent as a source for these specialised woods, as they sell them in small quantities.

Before you start making your plane you need a blade. I recommend a Hock blade from Classic Hand Tools. I find the 45mm blade to be the best size overall. Once you have your blade, this will tell you what size to make the body. You want to have a bit of room for the blade to move from side to side but not too much – 2-3mm should be OK.

Cutting & planing to size

After you have selected your wood, the first step is to cut and plane the block square on all four sides. The main body of the plane will come from the middle of the block and the two sides will come from the edges. This is best done using a bandsaw as the amount of material lost in the sawing will be far less than on a tablesaw. Whichever method you use, be sure to allow for it in your stock preparation.

You can then begin to mark the three components so they are orientated the same way as they were before re-sawing. Then, plane all the faces flat again so that when placed together, there is a seamless join. If you have kept your planing to a minimum, the join may almost be invisible when it's glued.

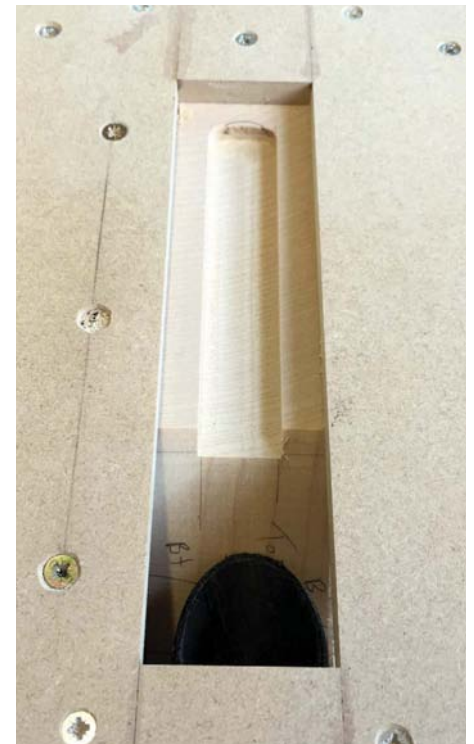
The central part is the main body, which needs to be cut into two bits: the rear part with an angle of 45° for the blade and the front part with an angle of 65° to create the escapement. Before gluing up the sides of the plane to the body, you need to cut a slot in the 45° angle piece, which will accommodate the screw on the back of the blade and chipbreaker. You will see this when you get your blade.



The body and the sides planed to size



The body with the two angles needed



One way to cut the slot for the screw is with a jig and a router using a guidebush

Glue up

Using what will become waste material, you can locate dowels or screws to help glue the components together. While you are waiting for the glue to dry, you can make the wedge out of the waste wood from the middle of the main body. After the plane has dried, you can work out and drill a 8mm hole so you can fit the pin and bar. The pin and bar hold the wedge in and hold the blade in place. If you choose, you could make the pin and bar out of a different timber, which will help to enhance the final appearance of your plane. The next step is to glue up your body and

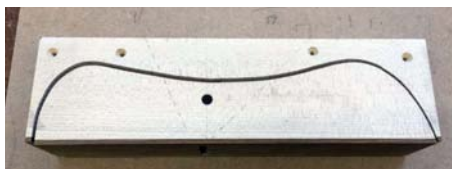
sides, then drill a 8mm hole so you can fit the pin and bar ready for the wedge. I would make the pin and bar out of two separate pieces of wood: the pin can be made out of 8mm dowel stock, or you could make your own by using a dowel plate or a small turning lathe. The bar should be just shorter than the width of the body, so about 46.8mm long and about 15mm × 15mm. You can then drill an 8mm hole all the way through the bar so you can fit the pin and bar with the plane glued up. It can be adjusted if you need to. You could also make the pin and bar out of different timbers.

The sole

Now you can plane up the wood for your sole, which should end up about 4mm-thick, and once this is ready, glue it to the body of the plane. After it has dried, you need to work out where you need to drill holes and file the mouth for your blade to fit through. Refer to your drawing often here and take special care during this process, as you want the mouth to be as close to the blade as possible. The key consideration to producing the best plane you can is to undercut and not overcut at this stage.

Shaping

Next is the shaping of the plane. I would draw a design on the side of the plane, then bandsaw your shape out. Once done, it's time to get the spokeshave out and plane away until you get the shape and curves you're after. I find that this is the best part of the process, as the plane really comes alive. After it's shaped, you could sand it and put a finish on it, but that's optional. Krenov used to just shape his planes on the bandsaw, do a bit of spokeshave work and leave it at that. It works just the same.



The plane shape cut out, ready for shaping



The shaping of the plane with a spokeshave

Flattening the sole

Once you've shaped your plane, it's then time to flatten the sole. This can be done by sticking abrasive to a machine bed or a flat granite block and sanding it. I would always do this with the blade in and wedged in place, but make sure the blade is backed up a bit, as you don't want to sand your blade by mistake.

Adjustment

When using your new wooden plane, you will need a small pin hammer to adjust the blade from side to side and to set the blade depth. You can also hit the back of the plane to back the blade up a bit. The setting of a wooden plane takes a few tries to get the hang of, but after a while it's easy. Once it's set, it's good to go until the blade needs sharpening.

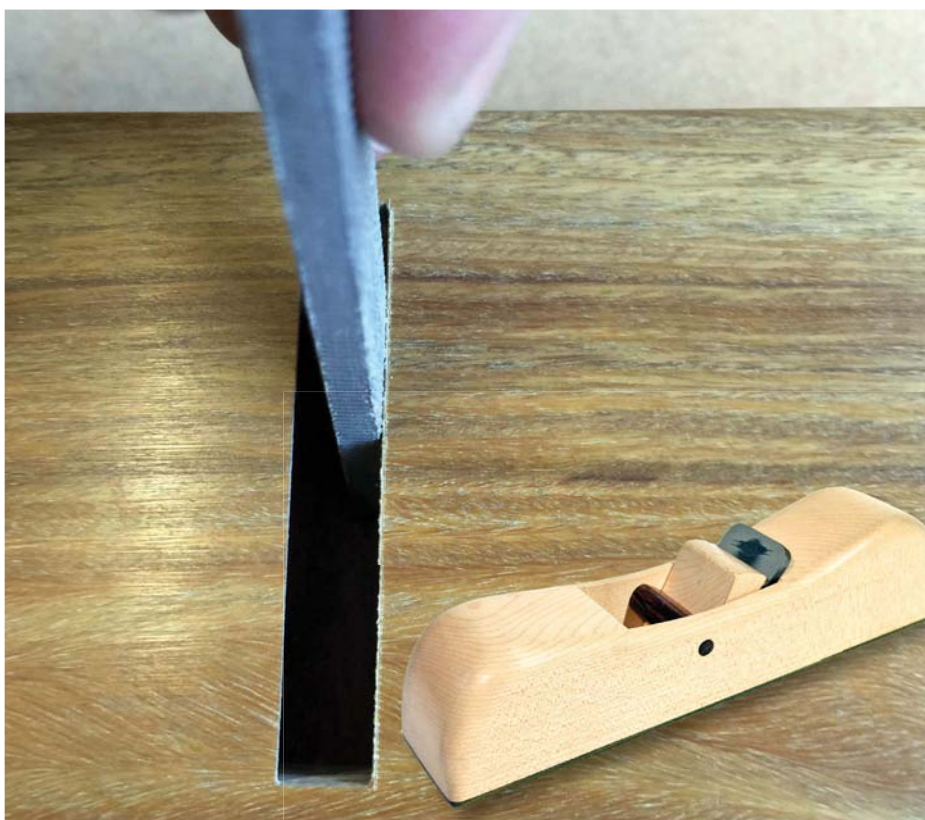
Conclusion

I hope these steps help you in building your own wooden planes. My tool collection definitely wouldn't be the same without them. I will leave you with a quote I love from the late James Krenov: "Of course, the really good plane becomes an instrument; it becomes something that you want to make music with."

I am now teaching part-time at Marc Fish's 'Robinson House Studio' and we will be running a weekend course if you fancy getting some expert help in making wooden hand planes. The date of the course is 29–30 August, 2015. For more details, see www.marcfish.co.uk F&C



Using a shooting board and plane to work on the wedge



Filing of the mouth for the fitting of the blade

The completed hand plane

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Why wedge tenons?

Early craftsmen often drove wedges into their tenons to make the joint stouter. Should you? And if so, how? Chris Schwarz tells us all here

The venerable mortise and tenon joint allowed the first woodworkers to build furniture that was both lightweight and strong. But it was the simple wedge that ensured the work would last hundreds – even thousands – of years.

A wedge is one of the six ‘simple machines’ of physics and is the reason an axe can split wood and a nail can hold it together.

When a wedge is driven into the end of a tenon, it expands the tenon and forces the end of the tenon to become wider than the joint is near the shoulder. When this technique is used in a mortise with trumpet-shaped walls, the wedge transforms the tenon into what resembles a dovetail. The result is an astonishingly strong joint.

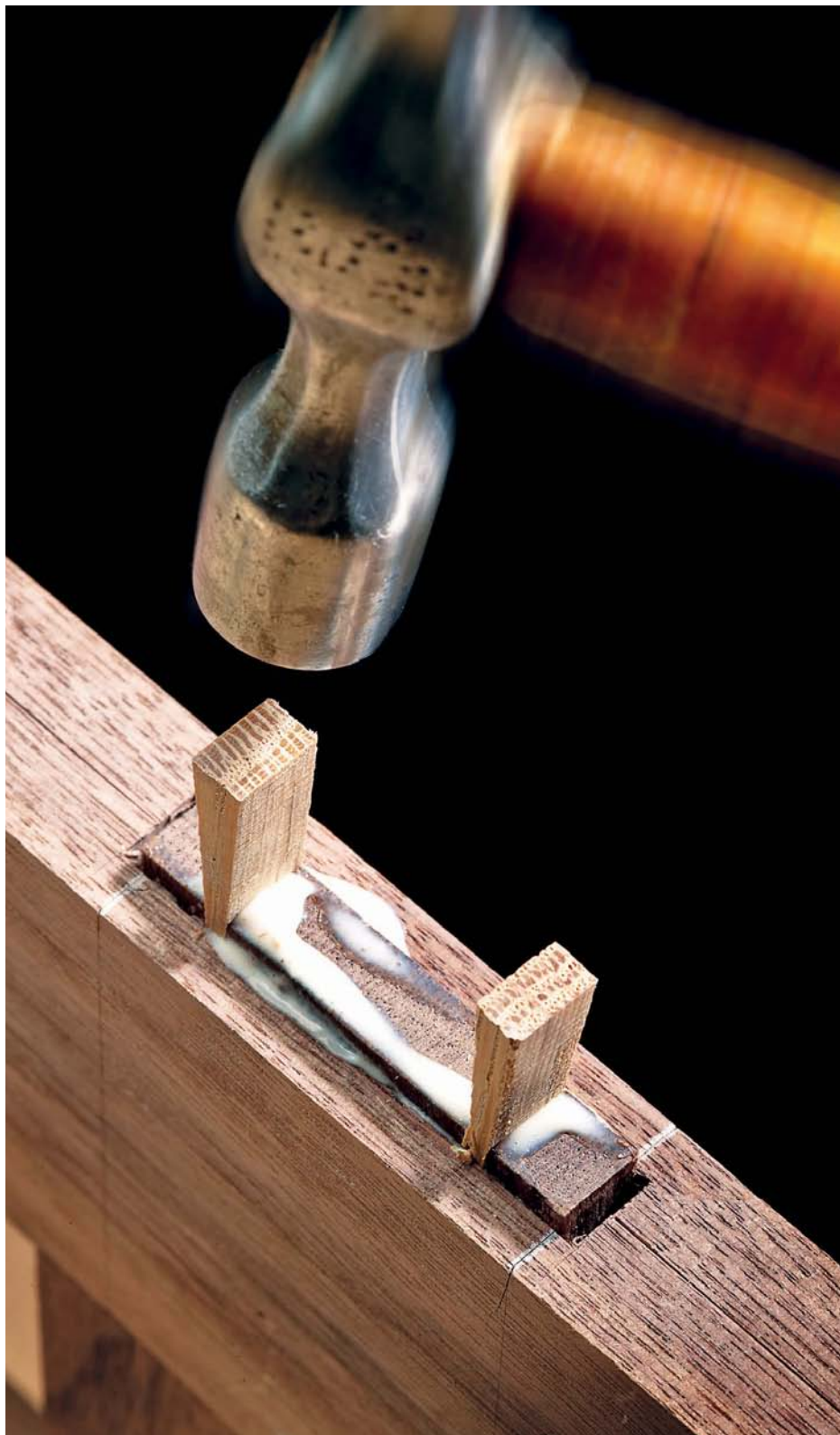
The wedged joint shows up frequently in the historical record in Egyptian furniture, large doors for houses and cabinets and in chairs. But as glues became stronger, this joint fell into decline. Today the wedged tenon shows up mostly as a decorative motif on high-end furniture or in Windsor and ladderback chairs.

Good-quality chairs probably will always use this joint, no matter how strong adhesives become. In the ongoing battle of child vs. chair, the chair will always need all the help it can get.

And there's little need for this joint in the realm of the commercial cabinetmaker. Kitchens aren't designed to last a lifetime, so there's no need to waste precious time and material on a door or cabinet that's going to end up in the dump before the glue ever gives up its grip.

But for the home woodworker, this joint should definitely be in your arsenal. Make a sample joint one afternoon in the workshop and you are sure to be intrigued by its pure cunning. When executed properly, a wedged tenon locks the components together like no other frame joint. And because of this immediate lock, you can reduce your reliance on piles and piles of expensive clamps. Once the joint is wedged, you can take the clamps off and manipulate the assembly.

Wedging a tenon is, in theory, stronger than draw-boring a mortise and tenon joint. And while wedging is a bit more work to execute than draw-boring, it has some other advantages. Wedging is remarkably forgiving – your first joint will be stout – if not showy. When done with traditional methods, it is actually a reversible joint. And the result definitely appeals to the modern woodworking eye, which appreciates visible joinery.



Wedging a through-tenon adds strength, but also complexity. We investigated the various ways to make this joint to find the simplest and most reliable method

PHOTOGRAPHS BY AL PARSONS

Theory vs. practice

There are a few rules for wedging a tenon, and they all seem to contradict one another; it depends on which book you read or school you attend. And though I have personally wedged hundreds of joints – mostly in chairs and in Arts & Crafts furniture – I've also been flummoxed by the lore that shrouds this joint.

So I made a bunch of these joints in walnut (*Juglans spp.*) and maple (*Acer spp.*) using a variety of common techniques. All the techniques resulted in a stout joint that looked good. Then I sawed them all apart to see what actually happened inside the joint when the wedge entered the picture.

When it comes to the shape of the mortise, there is little disagreement among the pundits. The area where the tenon enters

the work should be narrower than where the tenon exits on the far side. In essence, the mortise should have a bit of a trumpet shape. The taper on the mortise walls should start somewhere in the middle of the mortise – you don't have to taper the entire wall of the joint. As you'll see shortly, this trumpet shape is easy to make with a chisel.

When it comes to the tenon, that's where the disagreements begin. One school of thought is that you should do nothing to the tenon before assembly and merely wedge the gaps at the ends of the mortise only. While this works, I found that you don't get as much good wedge-to-tenon-to-mortise contact as with the other methods that I investigated.



Because this tenon has a loose fit – about 3mm on either side – I used a backsaw to make the kerfs in the tenon. Note that the kerfs don't extend all the way down to the tenon's shoulder. There's no need – the wedges will only travel so far

Saw kerfs in the tenon

Another dominant school of thought is that you should cut two saw kerfs down most of the length of the tenon and then drive wedges into the kerfs. Some sources show using a backsaw, which has a thin kerf, to cut the kerfs. Other sources show a full-size handsaw cutting the kerfs. I've used both methods successfully in my work, and I tried both methods for this article and then sawed the joints apart to see if they offered different results.

The wider kerf of the full-size handsaw allowed the wedges to penetrate more deeply, but there was very little difference in the appearance of the joint on the inside. The joint locked solidly up and down the mortise walls.

So if you go this route, which saw should

you choose for the kerfs? I choose a saw based on how close the tenon fits in the mortise when I complete the fitting of the joint. In making chairs, for example, the tenon is usually a close fit, so I choose a handsaw with the bigger kerf – or I use a bandsaw. If I use a small-kerf backsaw for this job, there is a real risk that I won't get much of the wedge into the kerf and the wedge will snap off when I drive it – as you drive the wedge, the mortise fights back; if your first blow is a mis-strike you can snap off the wedge if there's a tight fit on the tip of the wedge.

When the tenon is a looser fit in its mortise, I use a backsaw to cut the kerfs. If I use a full-size handsaw in this instance, I could create too much space that the wedges can't fill.

Saw the kerfs and then drill holes

Another common variant of this joint is to saw kerfs down the tenon and then drill a hole at the bottom of the kerf. The theory goes that the hole will allow the sides of the tenon to bend outward – instead of splitting the tenon at the bottom of the saw kerf. The other assertion is that the hole will reduce the chances for splitting the part of your project that has the mortise.

This technique always seemed strange to me. I've never had a tenon split on me below the joint's shoulder line, even during my most aggressive moments with a hammer. I suppose a split could happen, but none of the joints I made and then sawed apart for this article showed evidence of significant splitting.

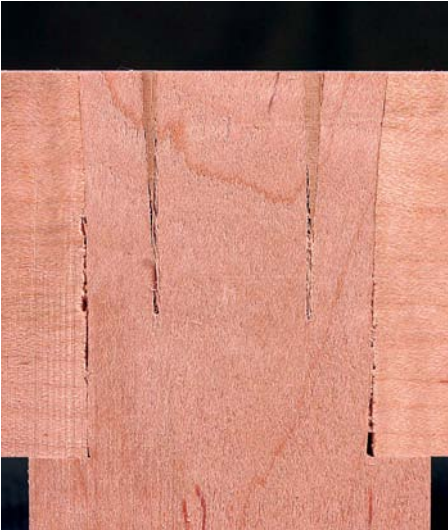
But I decided I should investigate what happens inside the joint when made this way. First I sawed the kerfs as before. Then I drilled $\frac{3}{4}$ in diameter holes at the bottom of each kerf. On half of the sample joints I centred the hole on the kerf. On the other half of the samples I positioned the hole so its edge was tangent to – just touching – the kerf. Both variations are common.

When I sawed apart these joints, they all behaved exactly the same. For the joints with the hole centred on the kerf, the joint looked fine and solid overall. One of the examples had a tiny split at the bottom of the kerf, but nothing to get worked up about. However, the examples that had the hole tangent to the kerf performed oddly in my opinion. These holes actually introduced a split that ran back up the tenon. This second split leveraged the kerf closed and reduced the amount of penetration allowed to the wedge. Some of these splits filled up with glue that squeezed in from the mortise wall; others did not.

The bottom line on this joint is that I don't think that the holes are worth the extra steps involved. They don't seem to offer any advantage in a typical joint and they make driving the wedge more difficult, so skip the drill.



Here you can see the joint with a hole drilled tangent to the kerf – left – and centred on the kerf. In all the samples, the joints with a hole that was tangent to the kerf split back up the tenon as shown – this one filled with glue after the split



Here's what the joint at left looked like when sawn apart. The wedges didn't make it all the way down to the bottom of the kerf from the backsaw, but the tenon filled the mortise nicely using this method. The joint with the kerf made by a full-size handsaw looked almost identical, except the wedges made it further in



Here's a close-up of another example. Note how the reverse split closed up the kerf and stopped the wedge from entering the joint further

No kerfs, just a chisel

There was one more variant I wanted to try that chairmaker David Fleming taught me. He doesn't saw a kerf in a tenon to make room for the wedge. Instead, he assembles the joint with glue and then splits the tenon with a chisel that is the same width as the tenon's thickness.

Introducing a split seemed like a bad idea when I was first introduced to the technique. I was worried that the violent splitting action would ruin the tenoned piece, even before wedging. And the method left even less room for a wedge than the other techniques. Plus it seemed just a bit crude and rash, but I'm always willing to try new things and then saw them apart.

The results were surprising: splitting the tenon was fast and easy and the wedges

slipped into the split without fuss and were easy to drive into the work. But what did the joint look like after an autopsy? Surprisingly good. The wood split along the growth rings of the tenon, which caused the splits to be at a slight angle. But the wedges penetrated deeply and evenly. Time after time, this joint looked better and more solid than the others we tried.

Splitting the tenon isn't always the best way to go, however. If your tenon is a close fit in its mortise, you could snap the wedge prematurely before much of it has entered the joint. So our recommendation is to split the tenon with a chisel when you have a loose fit – about 3mm on either side of the tenon – and to use a saw kerf when you have a tight fit.



The split tenons looked the best overall, were easy to assemble and had fewer steps. Note how the wedges – and the split – followed the grain lines of the wood. This caused the wedges to enter the joint at a slight angle, but there was no difference in the finished appearance of the joint



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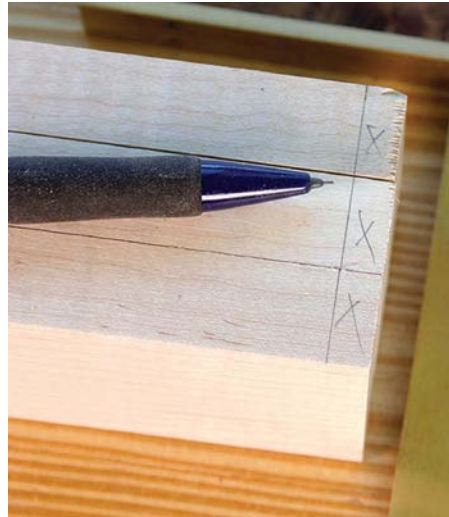
Making the joint

Once you have decided how to wedge the joint, the rest of the joint design is straightforward. By using some traditional layout methods, you will make things easier on yourself.

- Add 'horns' to your stiles. When you make a frame assembly with rails and stiles, it's traditional to cut your stiles a little longer – 6mm on each end will do – than the finished length. The extra length, which is trimmed away later, reduces the chance that the end of your stiles will split when being mortised or wedged. It also gives you a little more surface area you can clamp to get that joint tight.
- Try hide glue. Using either liquid hide glue or hot hide glue makes this joint reversible when you add moisture and heat – a clothes iron and a wet towel do the trick. Hide glue allows you to pull the joint apart if you find misfitting joints after glue-up. It's easier if you do disassemble the joint before you trim the wedges flush. Add the heat and steam, then pull the wedges out with pliers. Otherwise, pry out the wedges with an old chisel. Once you get the wedges out, the joint will be easy to disassemble from there.
- Use white oak (*Quercus alba*) for the wedges. White oak is an excellent wood for wedges because it is common and can take a beating. Hickory (*Carya spp.*) and ash (*Fraxinus spp.*) are also excellent. Using a fragile species for the wedges, such as cherry (*Prunus serotina*), increases the chance that the wedge will split. Make your wedges long enough that you will have at least 6mm left to trim after assembly.

Follow the photos here to see how we assemble this joint. With these techniques – particularly the wedge-cutting sled for the bandsaw – I think you'll be pleased with this joint and soon ready for its interesting variations: diagonal wedging, which closes a gap around a tenon in all four directions, and fox-wedging, which is a sneaky technique for wedging a blind tenon.

Assembling the wedge joint



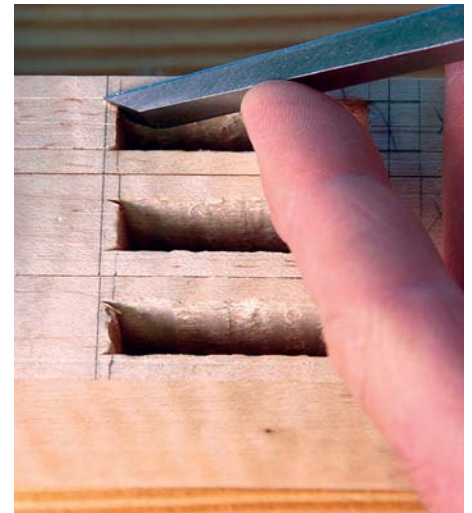
1 When marking out the mortises, be sure to leave some extra length in the stiles, sometimes called 'horns'. The horns reduce the chance your joint will self-destruct during joinery or assembly



2 I clamp all my stiles together and mark the joinery simultaneously. Here I'm using the actual tenon to lay out the mortise location. This reduces both measuring and error



3 No matter how you make your mortise – a hollow-chisel mortiser is shown here – don't try to plunge all the way through from one side. Work from one edge, then flip the work over and work from the opposite edge – keeping the same face against the fence – until the two mortises meet



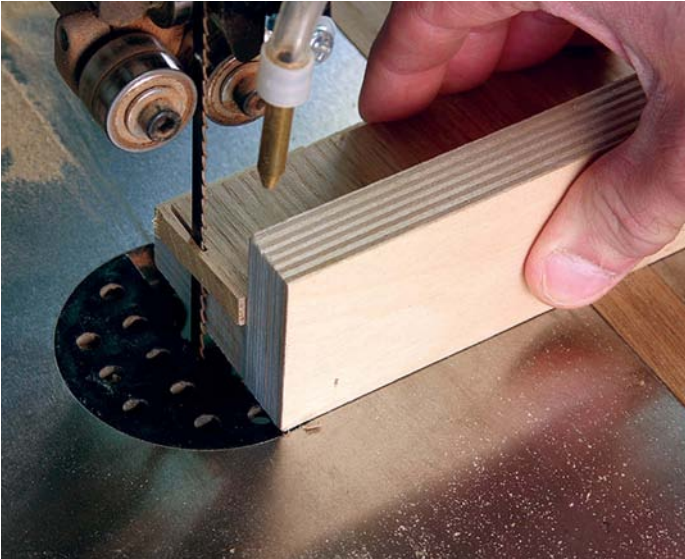
4 On the edge where the tenon will exit the stile, mark out about 3mm from your mortise. Use a chisel to first extend the wall of the mortise out to your layout line. Note that if you used a traditional mortising chisel to cut your mortise, this step might be unnecessary. The natural levering action of the mortise chisel can be used to create the trumpet-shaped mortise



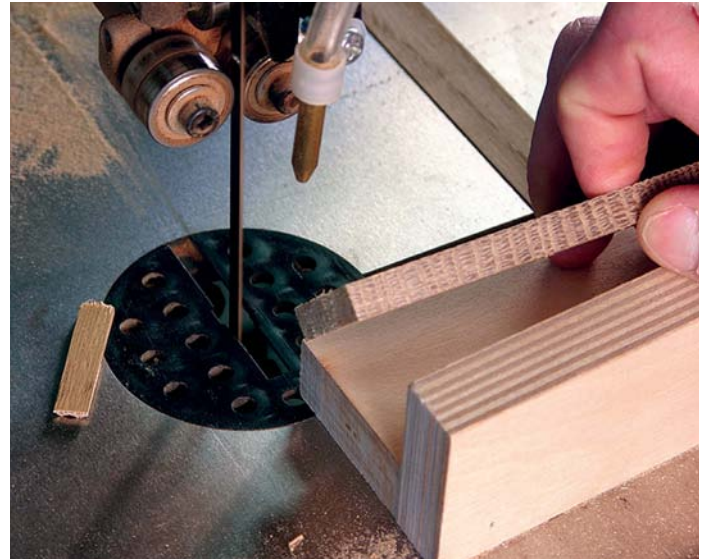
5 Tip the chisel a few degrees as shown and drive it into the work. You want to stop the taper somewhere in the middle of the mortise. Don't go all the way to the bottom



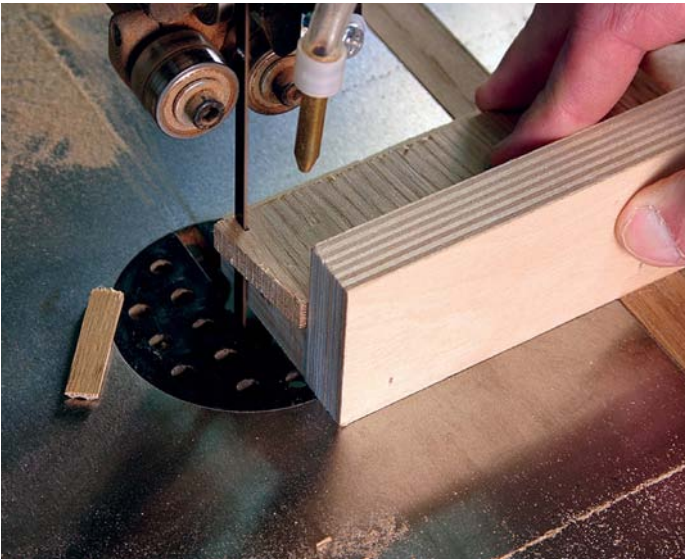
6 This jig makes wedges better than anything I know. I picked up the idea for it from Lee Valley's website – www.leevalley.com. It essentially is a sled that is skewed 4° and runs in the saw's mitre slot



7 To make wedges, you need a board of suitable wedge material that is the same thickness as your tenon. First saw one end off of your blank; discard the waste piece



8 Flip the wedge material over and position it so it overhangs the edge of the sled a bit. How much overhang depends on how pointy you want your wedge to be. Experiment



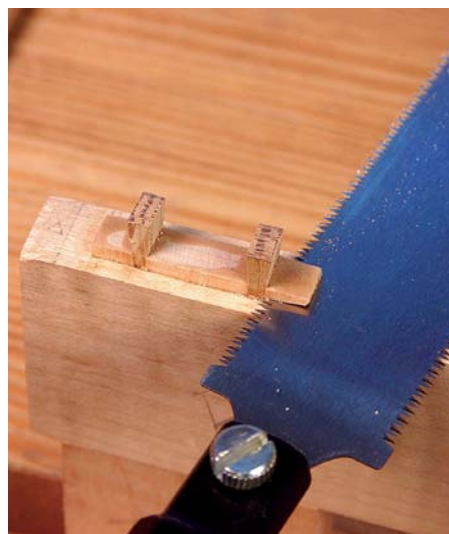
9 With the wedge material flipped and in position, make the second cut. The 4° slope on both edges produces a wedge with an 8° slope



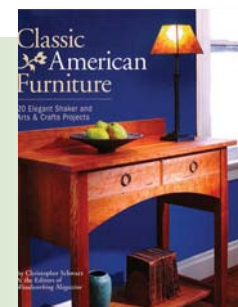
10 Drive a chisel into the end of the tenon to split it. I positioned the chisel 8mm from the end of the tenon and drove it straight down until the gap closed up



11 Add your adhesive, yellow glue or hide glue and drive your wedges into the joint. Tap them in evenly, alternating one wedge to another. The sound of the hammer hitting the wedge will change when the wedge hits bottom



12 You can trim the joint flush with a flush-cutting saw. I like to use a bandsaw when I can take the assembly to the saw



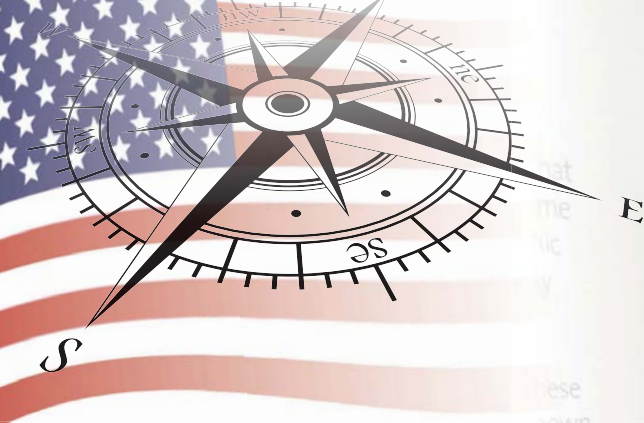
Classic American Furniture – 20 Elegant Shaker and Arts & Crafts Projects

This excerpt is taken from Classic American Furniture – 20 Elegant Shaker and Arts & Crafts Projects, by Christopher Schwarz and the Editors of Woodworking magazine

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A traveller's sightings: Paris & London

Gary Rogowski shares some of his favourite sights from his recent trips to Paris and London

Why does one travel to a foreign country? Is it for the aggravation the airlines offer? Is it the time change, the wrenching of one's interior clock across eight or nine time zones? Is it the crowds in the Tube or the smells in the Metro? Mind the what? Is it the long lines at museums, the pickpockets, or the hordes taking photos to remind themselves of where they had once been and now had forgotten? Or is it the rush and multiplicity of sights and sounds which can be so frightening and charming all at once?

Over the years, *F&C* has acquired readers from all four points on the compass and since going digital in 2013, that trend has increased. You can find us anywhere in the world with a link to the web. As the content of the magazine is a true reflection of our readership, we've decided to introduce a new style of article that will take us on a workshop tour of the globe. Our reporter this month is Gary Rogowski, the man behind Northwest Woodworking Studio, who shared his tips on scraper sharpening in issue 234

Paris & London

My recent journeys this March to Paris and London were in the moment difficult and in the remembering a delight. The pat down before leaving the domicile: brain, key, building and door codes, passport, money, map, camera, phone, brain, museum pass, Metro pass, water, packet of bird seed to spread to find my way home with. It is a routine familiar to all travellers and with a chest patting monotony that is reassuring. It seemed that I might as well have looked for my sword and shield before hitting the pavement.

Once out on the streets, what a vista Paris offers. What a cornucopia London presents. Where to put my eyes? Oh look, a statue impossibly placed. There, a street grate quietly beautiful at my feet.

Who looks down in this town but a designer hungry for ideas? They abound



PHOTOGRAPHS BY GARY ROGOWSKI

Street flower, Paris

in these two of Europe's great capitals. It is a feast for the designer's eyes especially if they have an eye for the 19th century. Volutes and galloping fish. Why not? Isn't modernism also about speed? But I am tired of that kind of slick speed in design, I want a place where my eye can rest a bit in a simple geometry and nature.



Louvre fish



Parisian door



Metal feature at Jardin des Plantes

Musée des Arts et Métiers

I made it again to Musée des Arts et Métiers in Paris, which is my favourite of all the Paris museums. It is usually quiet and empty, off the beaten track as it is the history of French invention. But what forms, what shapes to behold. Stepping off the elevator, a 20th-century model of quiet efficiency, I walked onto floor number three and I promptly lost 200 years. Sitting on the site of a 10th-century abbey, it was rebuilt to house the inventions, crafts, drawings and models of the late 18th century by Abbé Henri Grégoire.

Housed here were things so outrageous when first disclosed to a faithful public that

people took fright. The first Lumière motion picture had people running for the doors when a train appeared to be headed towards them. All that we take for granted now was once new, once terrifying, once sacrilegious. Electricity, the work of the devil, sound transmission, the work of the devil, printing presses, clearly the work of the devil.

And then you arrive at the horologists, the clockmakers, the makers of automatons and they are the devil incarnate. Making inanimate objects move in the 18th century? Letting them play music? Marie Antoinette saw her likeness there at the dulcimer and gave the musical toy away; it was too frightening.



Musée des Arts et Métiers



Marie Antoinette at the Roentgen and Kintzing toy spinet



Pathe loudspeaker and phonograph

Musée d'Orsay

At the more famous Musée d'Orsay, I let the crowds throng in front of the Impressionists. I joined the few who found the hashish flavoured dreams of Art Nouveau designers more appealing.

This work astonished because of the sheer effort required to get these pieces

built with all their curves and ropey twisted shapes. I applauded their tenacity. Much as I did the furniture I saw at Musée du Quai Branly. What a collection of aboriginal art from around the world and none more impressive than the festooned chest shown here.



17th century Quai Branly wedding chest with handle



Door of the d'Orsay Art Nouveau

The V&A museum

Thence to London to get lost on the Tube on the way to the Victoria and Albert Museum. This is a typical holiday trait is it not? There to view a collection of furniture from four centuries. There is no accounting for taste is there? I witnessed the sublime and the silly in this work; furniture that was emblematic of power and work that understood the power of mass.

Is it innocence or arrogance that we chuckle at? Who will laugh at us years from now trying to make furniture out of wood and tools? No matter. The more things blow up in front of us, the more they stay the same. Our need to be confronted by problems to solve remains. Our need to put our hands on tools and woods remains. The best we can do is to enjoy the ride on our journey. *F&C*



Oak seat at the V&A



Art Nouveau cabinet at the V&A



Empire chair at the V&A



Clock at London St. Pancras station



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Handworks 2015

Anne Briggs Bohnett reports from the Handworks Woodworking Tools & Traditions show in Iowa



Marquetry by Frank Strazza

Handworks 2015 was a blur, a rush of people from all over the globe, coming together for a whirlwind weekend of tool shopping and community building within the hand tool woodworking world. There were three barns: the main barn, the furniture shop and the green woodworking barn, each of which were packed to the gills with makers and enthusiasts all weekend long. Of course, the presentation and selection of tools were incredible, but far more impressive, to me at least, were the people. I haven't seen so many smiles, hugs and handshakes in a very long time.

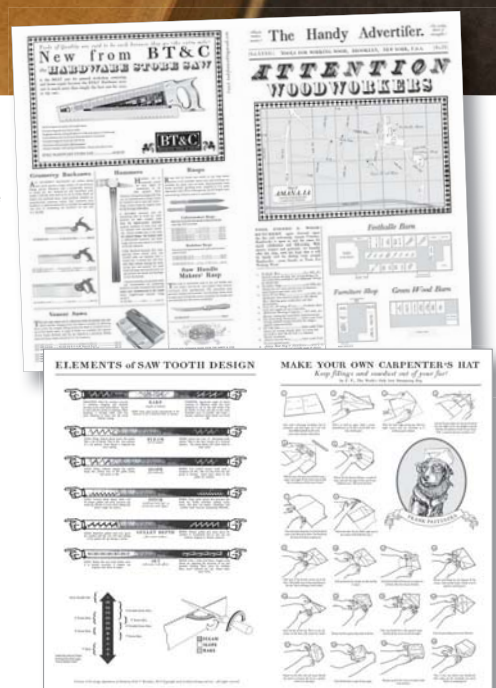
Woodworking community

As many woodworkers as there are out there, I am constantly surprised by the closeness I continue to see within the woodworking community. Every show I go to seems to

be a heart-warming reunion of the best of friends and a wonderful opportunity to make new ones. I was finally able to put faces to some of the names I've been hearing about, such as David Barron, planemaker, and Phil Edwards of Philly Planes. I also got Mike Hancock and Alex Primmer to ham up for a photo with me – absolutely lovely chaps!

Much like at Woodworking in America earlier this year, there were many woodworking celebrities present at Handworks. While I fared a little better controlling my nerves talking to Megan Fitzpatrick this time around, I'm still kicking myself for the awkward run-in with Chris Schwarz in our hotel lobby and for refusing the beer Roy Underhill offered me from behind the Lost Art Press table – note to self, if Roy Underhill ever offers you ANYTHING, you take it!

It is a very special thing to have the



An extract from the show guide

opportunity to meet the makers and retailers of the tools we use each day in our own 'shops at home. I believe it adds so much to a tool's value to know the person behind the tool. I now have the privilege of personally knowing the maker, giver or retailer behind every single tool in my chest, so now, each time I pick up a tool, I am challenged to use it to the best of my ability, to care for it, to cherish it and to use it to continue to build the legacy of the hands it was formerly in.



The chaps of Philly Planes



Handworks 2015 was all about the people



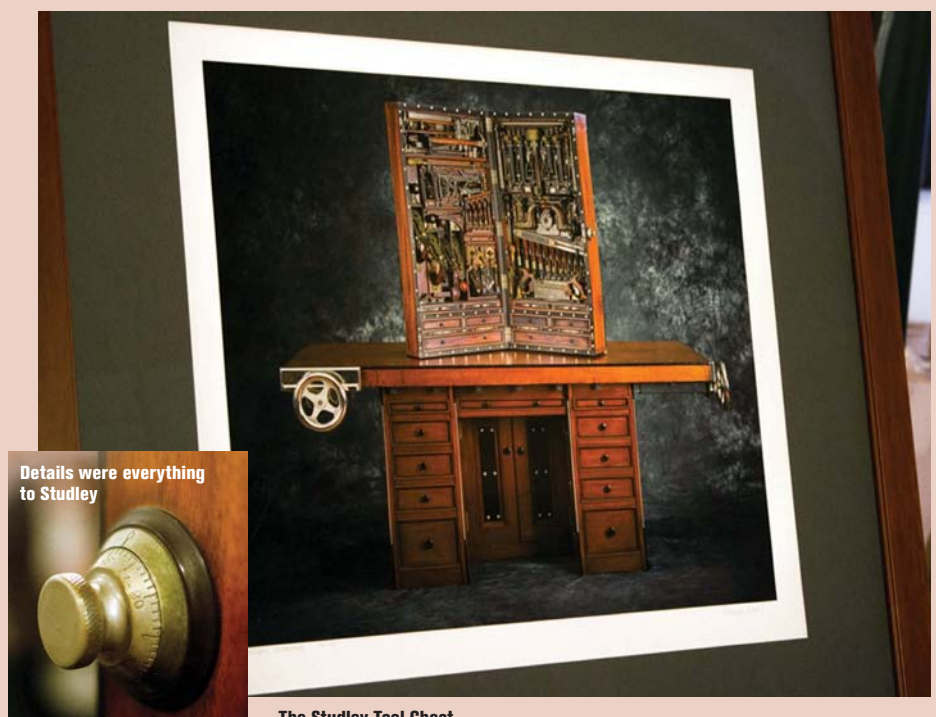
Mike and Alex of Classic Hand Tools



Roy Underhill admiring Texas Heritage Aprons

The Studley Tool Chest

And speaking of legacies, I still haven't quite recovered from my trip to see the Studley Tool Chest. The skill, precision and craftsmanship represented in that chest are truly inspiring. It was of great interest to me that Studley's whole working toolset, chest included, only weighed 77kg. Also, the chest shows absolutely no evidence of modification, which means that he had his entire toolset assembled and measured and then didn't make any alterations to his design along the way. He knew exactly what he was going to build and was able to envision the exact result before he began the build. Listening to Don Williams talk about the Studley project, working with Neryan on the chest for nearly five years, was my favourite part. His knowledge and passion about the chest, its maker and the tools inside were incredibly infectious



Details were everything to Studley

The Studley Tool Chest

And a little about the tools

Very exciting to many hand tool users at the show were the presence of Lie-Nielsen's new plough plane, set to be released soon, and the blade honing guide they've been working on getting into production. Lee Valley Veritas brought their new mitre plane, a fantastic little tool whose detachable side handle makes it excellent to use with a shooting board, but the hefty body and moveable mouth also make it a great smoothing plane as well. Sterling Toolworks' new dovetail square was a big hit at the show, boasting of imperial and metric graduated markings as well as a removable dovetailing blade whose reduced width at the end allows for easy checking for square across and along the base within the joint even on thin, London Style, dovetails. The ingenuity of the thing is that Chris designed the dovetailing rule so it can be purchased separately and is compatible with most any square stock, both vintage and new.



Bad Axe Backsaws were a big hit



Young and old dug through Patrick Leach's bins of vintage gold



The Lee Valley Veritas booth



Lie-Nielsen planes on display

A heart-warming tale of mini proportions

Marco Terenzi hung out in the Lost Art Press booth, where Chris Schwarz and Roy Underhill were signing autographs and selling books for most of the show. He brought along the Miniature Anarchist's Toolchest that he built for the New English Workshop, a perfect quarter-scale model of Chris Schwarz's Anarchist's Toolchest. Marco has since set about making a mini toolset to go along with the chest. He's also nearly completed a one-tenth model of the ATC that is too small to believe. Perfect tiny dovetails, impeccable wood selection and unbelievable craftsmanship make for a deadly cute trifecta. As he stood near his tiny chests, an elderly gentleman approached and greeted Marco warmly. As it turns out, Bob McGinis has been a big fan of Marco's for quite some time. 75-year-old Bob came equipped with a photo album containing prints he'd made of every single one of Marco's Instagram photos, and proudly showed the album to anyone willing to look. A mini-maker himself, Bob has been



Marco Terenzi and his biggest fan

championing Marco from afar for quite some time, encouraging and inspiring him. He and Marco regularly exchange letters and Bob came out to Handworks specifically

to spend time with Marco and to personally invite him to his annual mini-maker BBQ bash at his house this autumn.

Community Toolchest

By far the most special part of this show, for me, was being able to hand deliver the first piece of furniture built with the Community Toolchest to a very pleased new owner. As part of a barter exchange earlier this year, Mark Harell of Bad Axe Saws commissioned me to build a new display for his saws. Using only hand tools straight out of the CTC, I was able to use the build as an incredible teaching opportunity. In the process, I also learned a ton, was able to incorporate many woodworking techniques I was trying for the first time, and was able to complete and deliver the best and most complex piece I've built to date on quite a time crunch to someone who will love and appreciate the piece for all it is, both its flaws and its perfect spots!

Join us all next time!

As what many of us will remember as the best weekend of our woodworking lives drew to a close, a buzz began to build. We left inspired to return home and play with our new tools with a renewed passion for the craft. I'm sure I wasn't the only one who was also very excited for a nice long nap! Jameel Abraham put on an incredible show, and I, for one, am already counting the days until the next Handworks. *F&C*



The first CTC commission



Patrick Leach's Loot



1/2th scale toolchest

Words on Handworks 2015

"Handworks is an opportunity for woodworkers of all ages and abilities to get hands-on with amazing tools, and to meet and learn from some of the greatest educators of hand tool woodworking. The experiences and comradery truly make it a weekend without compare!"

Jason Weaver, woodworker

"When people ask me if I had a 'good show', what they mean most often is if I sold a lot of planes. My response is always pretty equivocal on that front. In reality, that's really never what makes a show good or bad for me. What I gauge the success of an event on is how high the adrenaline of enthusiasm runs when I get home. After a good event, I'm practically shaking to get into the workshop, or get a pad and pencil to get ideas out. As someone who lives more or less like a hermit – albeit one with an intensely loud and anarchic family – most of the time, I need these gatherings desperately to give me a regular infusion of creativity and energy. Man, did I get that last weekend at Handworks"

Rany Nelson, Daed Toolworks

"So many excellent toolmakers, craftsmen and teachers. There is so much that should be said. If you love woodworking and hand tools, then this would be heaven on earth. The people are really the best you could possibly want to meet."

Bartee Lamar, Mysaw.com



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Precision engineering meets craftsmanship

John Adamson reports from David Stanley's 65th international auction, which this time boasted an exquisite blend of workmanship and ingenuity

With 945 lots offered at a wide range of prices to suit all wallets, David Stanley's 65th international auction held on 28 March, 2015 at Whitwick in Leicestershire brought home once more that there is unflagging interest in high-quality tools and that the hand tool resurgence is in full swing.

There were the practitioners, the carpenters, joiners and cabinetmakers

who knew that many old tools, however humble, are unsurpassed for their workmanship and their ergonomics. There were the collectors, who knew that when function is fulfilled there is often great beauty too. But what appealed again and again to users and hoarders alike was the exquisite blend of craftsmanship and precision engineering to be found in many of the tools offered.



This little used steel-soled gun-metal Norris No.28 chariot plane with rosewood wedge and with its original 1 1/2in Norris iron sold for £4,400

Planes in abundance



This steel-soled gun-metal A31 adjustable thumb plane by Norris with ebony infill and wedge, still with its original 1 1/2in Norris iron went under the hammer for £4,200



In the 1970s and 1980s Henley Optical Co., the precision plane-makers of Oxford brought out a range of planes inspired by the designs and exacting standards of Norris planes. This mitre plane in gun-metal with 2 1/2in iron, pin-and-hole adjuster and rosewood wedge sold with its original box and purchase invoice for £1,250

PHOTOGRAPHS BY JOHN JAMES, COURTESY OF DAVID STANLEY AUCTIONS, UNLESS OTHERWISE STATED



£1,200

Karl Holtey's first inspiration came from Norris planes in the 1990s. Since then, he has evolved his own designs and refined the adjustment mechanism for the cutter as on this gun-metal smoother with dovetailed steel sole, rosewood infill and closed handle. The plane fetched £1,200



£1,100

Another Holtey plane in gun-metal – an adjustable thumb plane with dovetailed steel sole and ebony infill and wedge – went under the hammer for £1,100



£1,100

Fine vertical and lateral adjustment of the plane iron have long been part of the quest for precision in plane-making. This 20%in jointer boasts a unique adjustment mechanism to control the pitch of the cutter from 45 to 65°. Bearing the mark of Ignace Chardoillet of Molsheim, Alsace, who patented the design in 1844, it sold for £1,100



Maker's mark on the side of the adjuster

Of the top 25 highest selling lots, eight were planes made by the London makers T. Norris & Son, who in their heyday revolutionised the adjustment mechanism on planes and took metal infill planes to new heights of excellence in construction and design. A Norris No.28 chariot plane in gun-metal with rosewood (*Dalbergia retusa*) wedge – lot 935 – fetched a hammer price of £4,400 – including 15% buyer's premium – from a US collector, whereas a Norris No.A31 thumb plane in gun-metal – lot 938 – was knocked down for £4,200, going to a buyer in the room. The Norris chariot plane had been in the collection of the late Geoff Entwistle, who taught woodworking for many years and was also a skilled plane-maker in

his own right. And three of the top lots were Norris-inspired planes: a finely crafted steel-soled brass mitre plane with rosewood wedge by the Henley Optical Co. of Oxford – lot 532 – going at £1,250; and two contemporary planes by Karl Holtey: a gun-metal parallel-sided smoothing plane with dovetailed sole and rosewood infill – lot 532B – and a gun-metal thumb plane with dovetailed steel sole and ebony (*Diospyros spp.*) infill – lot 532A – fetching £1,200 and £1,100 respectively. A pioneering attempt at fine adjustment of the cutter through ingenious engineering occurs on a mid-19th century Alsatian jointer plane – lot 527 – marked by Chardoillet from the David Russell collection, also making £1,100.

Precision instruments

A pair of 'museum-quality' 17th-century continental European dividers in gilt bronze – lot 384 – likewise from the David Russell collection, elegantly combined decorative flair and functional accuracy and went under the hammer to a US bidder for £3,000. Accuracy of measurement is a guiding principle in Japanese woodworking and three examples of Japanese ink lines were on offer – lots 162-4. The *sumitsubo* uses a silken thread and ink instead of the chalk and coarse string used in the West to mark lines on wood. Lot 163 with its carving of a sea turtle leaving the water fetched £210, the best bid of the three.



£3,000

This pair of continental European 17th-century gilt-bronze 10%in dividers with distinctive scrolled decoration, open-work heart motif and fretted trefoil thumbscrews sold for £3,000

DESIGN & INSPIRATION

Under the hammer – tools



The Japanese *sumitsubo*, literally inkpot, is used to snap a straight or curved line on wood in ink with a fine silken line. Wound on a reel the line is drawn through inked wadding held in the pot. Of the three 'inkpots' offered the one with the carving of a sea turtle aroused most interest fetching £210



£210

Detail of *sumitsubo*

Anarchist's Tool Chest

In the time-honoured Japanese tradition of *monozukuri* – the culture of the making of things – accurate measurement is only part of the quest for perfection. Woodworking tools in Japan are regarded as extensions of the hand and mind and worthy of great respect in their creation and use. Charity lot 678 of the so-called 'Anarchist's Tool Chest' and its contents at Whitwick was emblematic of the true craftsman in the West with his carefully chosen set of tools. When Christopher Schwarz published his book *The Anarchist's Tool Chest* in 2011, the anarchy he alluded to was not that of lawlessness or political disorder. Rather, it was the autonomy of the individual craftsman working with his mind, his body and his own tools. Christopher set about rethinking his workshop: he would keep only the basic tools and machines he really needed to build his furniture; make his workshop a comfortable and inspiring place; build a tool chest based on historical forms; and fill the chest with the tools he had selected, forsaking any tool that would not fit in the chest.

That is what he did and what became not just the subject of his book but the basis of his summer course held by New English Workshop – www.newenglish-workshop.co.uk – in July, 2014 and hosted by Warwickshire College in Leamington. A total of 18 students completed the course, dubbed by some as the Dovetail Bootcamp, replicating the detail and spirit of the original chest. In the wake of this successful event, funds are being raised for the college's furniture department through the sale of the tool chest built on the course by Christopher along with the contents comprising new tools and a copy of David Russell's book *Antique Woodworking Tools* donated by vendors and artisan tool-makers from around the world.

Although the tool chest was not sold, it will live to see another day and may well make an appearance



alongside similar examples built on this year's courses, at the European Woodworking Show on 12–13 September. The message is clear: with a few well-chosen and well-honed hand tools the would-be craftsman is well equipped to set forth on a woodworking adventure. And before long the Anarchist's Tool Chest and the wonderful array of new tools inside it will be in the hands of appreciative woodworkers and funds made available to the college to teach more furniture-making, thereby promoting the revival of the craft. *F&C*

Offered for sale was this classic English tool chest made by Christopher Schwarz in southern yellow pine with hardware installed by Paul Mayon. The interior, fitted out to replicate the example in Schwarz's book *The Anarchist's Tool Chest*, was packed with top-quality tools donated by tool-makers and vendors from around the world

Upcoming auctions

The next international David Stanley Auction is on Saturday, 26 September, 2015 at the Hermitage Leisure Centre, Whitwick, Leicestershire LE67 5EU. Their next general auction is on 20 November 2015, also at the Hermitage Leisure Centre, Whitwick. For more information check the website: www.davidstanley.com



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Precisa 4.0 P-1	Professional	Inc 1.4m STC + TLE (ditto)	3.5 / 5.2	87 mm x 800 mm	£1775.00	£2130.00
Precisa 4.0 P-2	Professional	Inc 1.4m STC + TWE + TLE (ditto)	3.5 / 5.2	87 mm x 800 mm	£1980.00	£2376.00
Precisa 6.0 P-1	Professional	Inc 2m STC + TLE (ditto)	4.0 / 6.5	110 mm x 1400 mm	£2416.67	£2900.00
Precisa 6.0 P-2	Professional	Inc 2m STC + TWE + TLE (ditto)	4.0 / 6.5	110 mm x 1400 mm	£2590.00	£3108.00
Precisa 6.0 VR P-1	Professional	Inc 2m STC + TWE + TLE + scorer (ditto)	4.0 / 6.5 + HP scorer	110 mm x 1400 mm	£2890.00	£3468.00

STC = Sliding Table Carriage. TWE = Table Width Extension. TLE = Table Length Extension.

Scheppach Precisa 3.0 is designed by scheppach in Germany but made in China where scheppach resident engineers oversee manufacturing quality control. Precisa 3.0 has the same warranty as Professional Series. Scheppach machines have been sold and serviced in the UK by NMA since 1972. Go to nmatools.co.uk and see what users say about NMA unprecedented service.



PHOTOGRAPHS BY GARY GREEK JONES

The daily grind

Is Tormek's T4 a realistic alternative to the daily grind of sharpening? Derek Jones shares a few tips on how to get this machine working in your favour

Despite its reputation and apparent simplicity, the Tormek system of wet grinding still manages to fox the occasional woodworker, especially those in search of a one-stop sharpening solution. In this article, we're going to look specifically at the Tormek T4 but, in all probability, similar machines based on this format could be used. Even though the T4 is capable of a lot more, we're going to look exclusively at creating and maintaining straight-edge tools, such as plane irons and chisels.

Perhaps by necessity rather than choice, woodworkers need to develop basic metalworking skills in order to keep their tools in good working order. Love it or loathe it, sharpening is one of those skills and the sooner you find a system that works for you, the sooner you'll notice an improvement in the rest of your woodworking skills.

Tormek essentials

For convenience, accuracy and safety, you will need three accessories from the Tormek catalogue to bring your T4 up to a spec suitable for straight edge sharpening: an end nut to prevent your jigs from de-railing; a square edge tool clamp and the TT-50 Truing and Dressing Tool. These are included as standard when you buy the T7 but not the T4



ABOVE LEFT: Removable stop nut keeps jigs from sliding off the end of the main guiderail

LEFT: The TT-50 Truing and Dressing Tool for the Tormek won't work on all other machines

ABOVE: The SE-76 Square Edge Jig. To keep the action smooth, wipe the bearings over with oil before use

One-stop shop

First of all, let's consider if the Tormek can be a one-stop sharpening solution. After all, it will grind a primary bevel from 10-75° on all your straight-edge tools. Using the WM-200 jig, you quite literally dial in the required angle and get to work. First set the jig to record the diameter of the wheel and your desired bevel angle. Secure the tool in the SE-76 Square Edge jig and 'eyeball' the position close to where you want it to be. Then use the fine adjustments to achieve the final setting. When you've done it a few times you'll discover it takes longer to describe than actually do. Is it 100% accurate? No. Should I tear my hair out at this point and ask for my money back? No. Should I rejoice in the knowledge that it will take me less than 60 seconds to do this on every single straight-edge tool for the rest of my life? Hell yes! You're already ahead of the game compared to other grinding options.



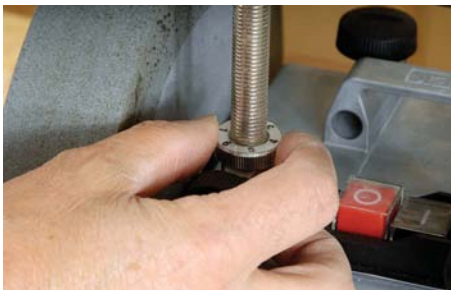
Set the first dial on the WM-200 to the diameter of the grinding wheel



Set the second dial to the required bevel angle



Use the jig to set the tool in the clamp



Slacken off the locking screws and use the fine adjuster to make minute adjustments



Tighten both screws to set the guiderail in place



Reset the WM-200 to the required secondary bevel angle



Re-grading the wheel before grinding a secondary bevel results in a finer wire edge

Secondary bevel

When it comes to that all important secondary bevel, it's good to know that you are just a few thumbscrew turns away from your desired angle. Reset the angle setting on the jig and make the adjustments

using the fine adjust mechanism. In most cases, you will only need to gently kiss the stone to create the bevel. It is advisable to re-grade the stone at this point to give a finer finish.

Forwards or backwards?

With the Tormek style of wet grinder, it is possible to grind towards the edge of the tool or away from it and there are subtle differences in both outcome and technique. With the toolrest positioned above the machine, you will be grinding towards the edge that you are sharpening. This mode naturally creates more pressure at the edge of the tool and requires far less input from the operator to maintain consistent contact with the wheel. This mode is more aggressive on the tool as the action releases fresh abrasive particles quicker from the wheel. The bad news is that you will increase wear on the stone. With this in mind it is therefore more suitable for wider blades that span

more of the wheel's face distributing the wear evenly. Typically, the wire edge or bur created during grinding in this mode will be slight.

With the tool positioned in front of the machine, you are grinding away from the edge that you are sharpening; this creates less pressure on the edge and consequently less wear on the stone. The grinding marks will be less pronounced causing a burnished appearance on the surface of the stone. As the metal particles are being dragged towards the edge of the tool it results in a larger wire edge or bur. Re-grading the wheel with the re-grading tool has more noticeable effects when working in this mode.



Grinding away from the tool edge leaves a long bur or wire edge



Re-grading the wheel before grinding a secondary bevel results in a finer wire edge

Honing & other tricks

The standard configuration for the T4 features a honing wheel that mimics the job of a strop. I'm not a big fan of stropping my straight-edge tools and this is my least favourite aspect of the Tormek sharpening regime. My advice is that if you must use it, and you must if you want a one-stop sharpening system, then use it sparingly. A fresh wheel will need loading up with an abrasive paste – the one that's supplied in the box is absolutely fine. Rub plenty of the stuff into the leather while rotating the wheel by hand. Only work at the front of the machine with the wheel rotating away from

the tool edge. It's not absolutely necessary but you can use the guiderail to support the tool while you're working. Honing will generate a mirror-like finish on your chisel backs if you like that sort of thing.

One thing that's often overlooked on the Tormek is the side edge of the wheel. This wide surface is ideal for the initial flattening of the backs of plane irons and chisels. Unfortunately, the standard grit stone is too coarse for it to be the last stage in that process, but a finer grade stone is available. I mainly use it for mortise chisels and marking knives without too much trouble.



Load up a new honing wheel with paste before turning the machine on



Only hone the blade from the front of the machine with the wheel rotating away from the tool edge



A mirror finish can be achieved in seconds



Use the side of the wheel sparingly as there is no easy way of flattening it if it becomes misshapen



Use as much of the surface as possible to avoid making indents

Troubleshooting

The most common complaint from disgruntled Tormek users is the tendency for the machine to somehow create unwanted angles or profiles. In nearly every case, this will be down to one or all or a combination of the following: a heavy-handed technique, an incorrectly mounted tool, or a wheel and guiderail that are not co-planar.

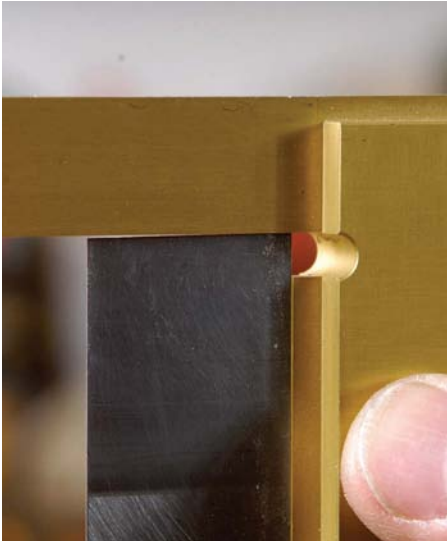
Let's look at technique first. Applying anything more than a light touch to the tool as it registers with the stone will usually result in a tapered edge. This is more noticeable on wider tools where it is unlikely you will be able to apply even and consistent pressure across the full width of the tool. Too much pressure can easily distort the guiderail and therefore the path of the tool clamp in relation to the face of the wheel.

The guiderail is only supported on one side and you can flex it relatively easily with just one finger. Imagine then what both hands bearing down on it will do. To mitigate this effect try placing your hands in front of the guiderail close to the edge of the tool as if you were using a honing device on a static stone. Use all the finesse of a concert pianist or touch typist to make contact with the stone – think more Ludovico Einaudi than Little Richard.

Make sure your tool is mounted in the clamp correctly. Keep it registered with the side stops and tighten the knob up directly above it if it doesn't span the entire width of the clamp. The second knob just needs to be no more than a quarter turn once the clamping bar has made contact with the tool.

Any more and you run the risk of tipping the tool over to one side.

Finally, you must make sure the face of the wheel and guiderail are completely aligned. Only the TT-50 Truing Tool will do this. In fact, any wet grinding machine is just an expensive water feature if you don't have this essential piece of kit. Why they are sold without one as standard makes no sense to me. Don't confuse re-grading with truing. A re-grading stone will alter the surface of the wheel in terms of its cutting speed and abrasive quality. Over time, it will become worn and misshapen, transferring its irregular profile to the face of the wheel. The stone is designed to be used freehand so unless you are part robot, don't rely on it to square anything up. ➤



The result of a badly clamped tool



Overtightening the screws can distort the clamp and pull the tool over to one side



Keep the jaws of the clamping bar parallel with each other and flat across the back of the tool



Placing a lot of weight behind the guiderail can cause it to flex. Levering the tool up to increase pressure on the wheel will have the same effect



A light touch in front of the guiderail will give the best results. Use the guiderail to assist with lateral motion and not for leverage

Truing tool tip



Refresh the grinding surface of the wheel at the end of each sharpening session

Japanese waterstone

So far we've just been looking at the Original Grindstone, which is the standard abrasive supplied with most Tormeks. It is classed as a 220 grit stone capable of grinding a wide range of tools and steels including HSS. As we know it will remove metal quickly for re-shaping tools and can be modified on the fly to the equivalent of a 1,000 grit stone with the SP-650 grading stone. It is in effect a hybrid of sorts and I suspect this is where some users feel a little let down with the edge it creates compared to those possible on a flat stone of similar grit value. A word of warning here, not all grit values produce the same results across all brands, see Brian Greene's articles in *F&C* 225 and 226 for more information on this.

So if you're happy with the convenience and accuracy the Tormek offers, imagine how much happier you could be if you could lasso your finest Japanese waterstone to it and get the perfect mirror finish. Fortunately you don't have to as Tormek have this covered in the shape of the SJ-250 (for the

T-7 and 2000) and SJ200 for T-3/4 and 1200 models.

The Japanese waterstone has a grit rating of 4,000 and is quick and easy to fit. It takes roughly the same amount of time as it does to swap flat stones over from a water bath. It will set you back the best part of £180, which is comparable with a flat stone if you consider the mass; there's probably around two flat stones worth of abrasive in a 250mm diameter wheel.

At 4,000 grit you won't want to be removing a lot of material or trying to re-shape a tool. Instead use it to dress a secondary bevel or polish an existing one. The best bit is that there's no need to reach for the paste and leather to hone the edge.

For touching up one chisel at a time, I'd probably find it a bit of a faff, especially by the time I've filled the reservoir and soaked the stone. On the other hand, if you're in the habit of working in group sharpening sessions, then it's a significant step up.

A suggested routine may be to grind primary bevels with the standard stone to all your tools, then swap over to the Japanese stone for secondary bevels and be done. Leaving the finer grit stone on the machine means quick touch-ups are easily done midway between procedures and may not require the use of the tool holding jig. Yes, free-hand is possible with the use of a tool rest.

Same rules apply

Just as with the Original Grindstone it pays to keep the Japanese waterstone flat and true to the guide rail. The handbook also recommends frequent but light use of the grading stone (fine surface only) to remove waste metal particles from the surface.

Conclusion

So can we honestly say that a good wet grinding machine is a one-stop sharpening solution for your straight-edge tools? For the most part yes, but you've got to be realistic about what you want to achieve and how quickly you want to get there. If absolute 90° edges every time is what makes you happy, then don't waste your money – you're better off learning to do that freehand with a variety of honing devices. The trouble with that is unless you do it regularly, you'll spend more time perfecting your technique than making furniture, so good luck with that.

If, on the other hand, you can live with 0.5° either side of 90°, then you've just made life a lot easier. And with the addition of the SJ-250/200 Japanese waterstone you're getting close to flat Japanese stone edges, albeit with a hollow grind. Using the techniques discussed in the article, you can easily create a cambered edge for your smoothing plane irons as well, which should cover most eventualities for your straight edge tools.

What I like about the Tormek system is that once I've committed to using it for a session, I can get through a dozen or more



Being able to use a Japanese waterstone is an excellent option



A superb hollow grind finish can be obtained quickly

chisels quicker than with any other method, providing the angles are all the same. They're on mine for that very reason. If you have conventional planer knives, then invest in the Tormek SVH-320 planer knife jig and you'll have most bases covered. About the only thing you won't want to do with your wet grinding machine is cart it around on site.

Tormek T-4

We conducted this article using the Tormek T-4 but of course there are other machines that follow a similar path. I haven't tried them all but the ones I have, I've felt were lacking. The T-4 is an upgrade from the T-3

– naturally – and has some new features that put it on par with the full metal jacketed T-7. A new solid cast zinc head gives the T-4 a much more rigid platform for the universal guide and drive wheel to operate from. The literature states a 300% increase in precision compared to the T-3! You can take those sort of numbers with or without a pinch of salt as we've got no way of checking. What I have found though, is that the T-4 is a darn site more convenient to have around than the T-7 if you don't have a regular sharpening station set up. For the small 'shop user who owns way too many chisels and planes than he should it's practically a must have and I guess that includes me. *F&C*

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NEXT MONTH in

Furniture & cabinetmaking

**ISSUE 236
ON SALE
3 SEPTEMBER**

Hand tool restoration

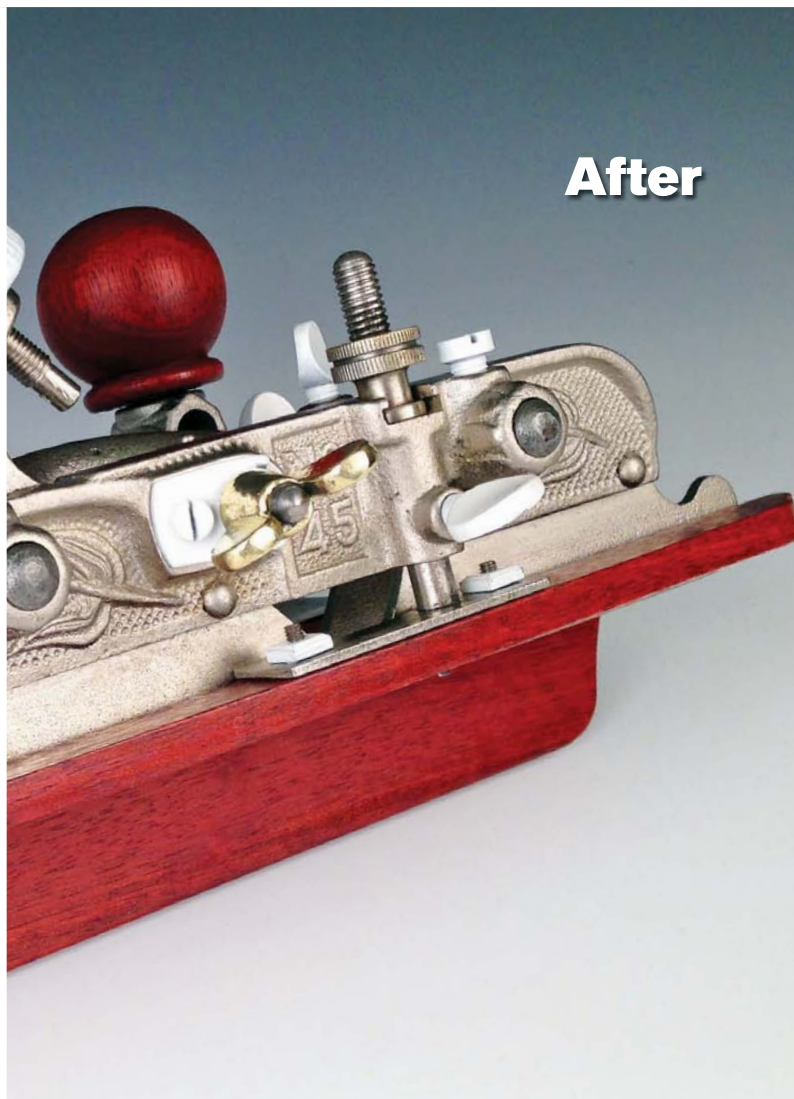
Stanley No.45 returned to glory

Before



PHOTOGRAPHS BY DANIEL GRAYMAN

After



Project

Art Nouveau table

Finishing tech

Solutions for
a natural look

Workshop jigs

Mitre shooting block

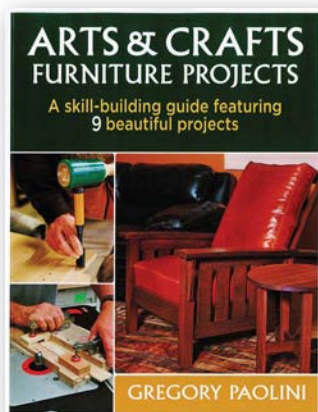
Tool tech

Heat treating
'shop made tools

Workshop library

Steve Morris reviews *Arts & Crafts Furniture Projects* and Derek Jones looks at *Timber in the City; Design and Construction in Mass Timber* and *100 British Chairs*. Website of the month is Gary Rogowski's blog

BOOKS



Arts & Crafts Furniture Projects by Gregory Paolini

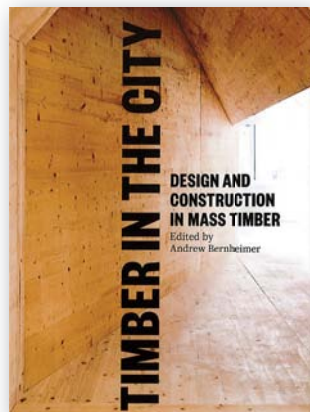
For many of us, Arts & Crafts furniture is at the core of our interest in woodworking and so there are lots of books available on the subject and a fair few containing plans and projects for the enthusiastic woodworker. However, these project books often use the same rehashed articles that have been kicking around for years, with the same dated 1980s photographs that you've seen in more than one publication. Not so with this book.

Despite being a second edition, this book feels up to date. It is laid out well, presented nicely with appropriate font, is coherent, accessible and easy to follow with comprehensive build instructions. A short chapter briefly covering construction and finishing techniques is followed by articles arranged in categories of shelving, tables, seating, storage and 'other'. The authors are all *Popular Woodworking* magazine editors – past and present – and Chris Schwarz has a healthy presence here, so you can be sure the standard is good. Of course, the furniture in this book is mostly from the American Arts & Crafts movement – apart from the ubiquitous Morris chair –

with little mention of the UK makers of the time, but then this is a US publication and the likes of Stickly and Greene & Greene being represented is no bad thing at all.

There are projects for varying degrees of skill levels but the advanced woodworker should still be able to find inspiration within these pages, though they might want to refine some of the details and joinery methods. With books like this, there are always one or two lemons, but on the whole, the standard of projects here is very good – I've already added the Eastwood-style chair, tool cabinet and the lost Stickly side table to my list of things to make and I'm sure there will be more. Throw in an introduction from Chris Schwarz with a nice little history of the American Arts & Crafts movement and this becomes a lovely book that should encourage any woodworker to get stuck into making an interesting, useful and attractive piece of furniture. One of the nicest project books I've seen for a while.

Published by Taunton Press Inc
ISBN: 9781600857812
176 pages £17.99



Timber in the City; Design and Construction in Mass Timber edited by Andrew Bernheimer and Lynne Farrington



The new headquarters for the Swiss media company Tamedia, designed by Shigeru Ban Architects

Furniture and architecture are the kissing cousins of the design world; to appreciate one you nearly always have to consider the other. In fact, to create either in isolation is practically impossible. It may just be considering the access for a large installation that concerns furniture makers but in all probability, there will be a relationship between the materials that contribute to the space.

Timber in the City is not your regular coffee table book for designers and at first not very inspirational for furniture makers. It is, however, a glimpse into the world of leading architects who are passionate about the use of timber in the built environment. For the contemporary furniture designer/maker, it is a reference book or shortcut to what might be your next job site.

There are images of complete interiors in this book that could trigger a thought process for furniture makers. My favourite example is the headquarters of the Swiss media company Tamedia, located in the heart of Zurich by Shigeru Ban Architects. The structural system is based entirely on timber and innovative from

both technical and environmental standpoints. As a 'woodie', I'm connecting immediately with Buddhist temples and the glorious overpowering mechanics of steam-driven pumping stations.

A large portion of the book is given over to virtual projects but, as we all know, architects are masters of illusion when it comes to selling an idea: the right blend of fluff and technical content usually does the trick and, on that basis, I think you'll enjoy the artistic representations.

Buy this book if you enjoy *Grand Designs* and long for something with a bit more meat on the bones, except that you won't be able to shout back at the telly.

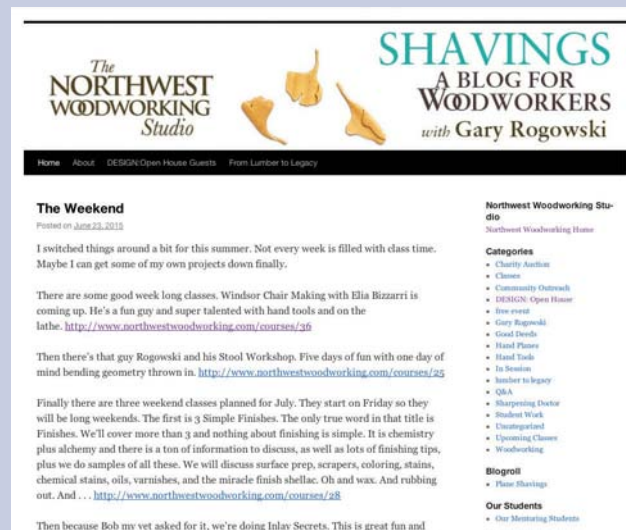
Published by ORO Editions
ISBN: 9781941806807
192 pages £22.45

100 British Chairs edited by Adam Bowet

100 British Chairs is comprised of plates from a collection of encyclopaedic tomes from the Antique Collectors' Club, all of which are worthy of a place in your workshop library. Largely a

Website of the month

Shavings: A Blog for Woodworkers with Gary Rogowski



Woodworker and F&C author Gary Rogowski runs this blog for his school, The Northwest Woodworking Studio. Gary has been a woodworker since 1974, opening up The Northwest Woodworking Studio in 1997.

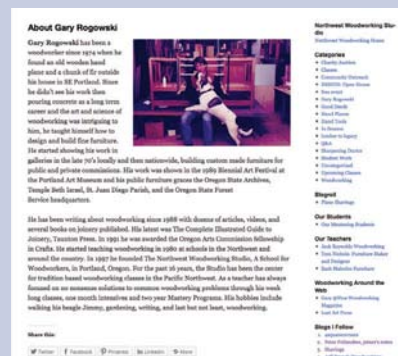
Gary's website is your basic blog, but he writes brilliant and insightful entries. In his posts, Gary is informative, entertaining and more than happy to post about upcoming lessons, classes and projects for fellow woodworkers. To the side of the homepage, Gary has categorised all of his blog posts, which ensures they are not too hard to find, should you be looking for a specific entry.

Within his posts, Gary uploads accompanying photographs. The majority of these are high quality images, but some are a little small and it is a great shame to not be able to see all of the detail in his work.

The homepage jumps right into Gary's blog and the only other pages at the top of the homepage are 'About', 'DESIGN: Open House Guests' and 'From Lumber to Legacy'. Within DESIGN:Open House Guests, Gary links to pages about Bill Crane and David Minick.

The 'From Lumber to Legacy' page is an interesting one, which looks at the Lumber to Legacy Program – 'A Benefit for the City of Albany's White Oak Conservation and Restoration Effort'.

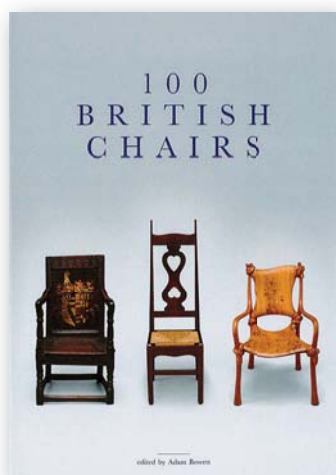
On this page, he explains the purpose of the programme and how you can get involved. Although this is a page aimed at the residents of the City of Albany, it makes for an interesting read and great inspiration to take action in the same manner.



Details
Web: northwestwoodworking.wordpress.com



An armchair c.1892–96, with the design attributed to C.F.A. Voysey and an easy chair, designed c.1900, also originally designed by C.F.A. Voysey



picture led book, it makes a good handy sized reference of design history. Divided chronologically into 14 chapters, it spans 450 years. There's not a great deal of text so don't expect a complete breakdown of each item. What you can expect

is a description of each style as it relates to a particular period. At 143 pages, it's more than a greatest hits compilation.

It may be the case that Britain didn't make that many chairs of note between 1905 and 1990 because the Chapter listings jump from 'Arts & Crafts Chairs, c.1885–1905' to 'John Makepeace Chairs 1990'. There might be someone else from High Wycombe out there who could pen that chapter for the revised edition.

Despite this, however, it's still a good volume and more indicative perhaps of an establishment finding it hard to accept Mid-Century Modern as a relevant contribution to the overall story of British Chairs.

Published by Antique Collectors' Club
ISBN: 9781851497973
143 pages £25



A few examples of chairs from c.1865: one designed by E.W. Godwin, called the 'Councillor's Chair' and one with inlaid wood cinquefoil decoration

Taming the skew rebate plane

Charles Mak shows how to turn this seemingly one trick pony into a reliable 'shop workhorse

PHOTOGRAPHS BY CHARLES MAK



The rebate, or rabbet as it is known on the left-hand side of the pond, is widely used in furniture and cabinetmaking. Apart from the familiar rebates used in the back of a carcass, a picture frame, or in a drawer, they can be found in the breadboard ends, lip edge cabinet doors and, of course, rebate and dado joints. We also often use rebates in the process of moulding work or, for the seasoned dovetailers, to guide the transfer of the tails to a pin board, among other applications.

Rebates can be cut with a machine or by hand using, for example, a chisel, shoulder plane or skew block plane. My preferred rebating hand tool, especially for large-scale work, is the skew rebate plane, a 'shop workhorse that offers top speed, precision and results. In this article, I will show you how you can excel at using this versatile plane.



A skew rebate plane is my choice of tool for cutting clean rebates

A rebated auxiliary fence



A rebated fence also prevents splinters and finger burns

A skew rebate plane can sometimes be used without the fence, more like a large shoulder plane, for clean-up work. But its full potentials are achieved with the use of a fence. I first introduced the rebated auxiliary fence design and its benefits – e.g., better grip – in my ‘taming the plough’ article, which was featured back in issue 202. Adding an auxiliary fence to the skew rebate plane not only enhances its handling but increases the tool’s potential to carry out a wide variety of tasks.

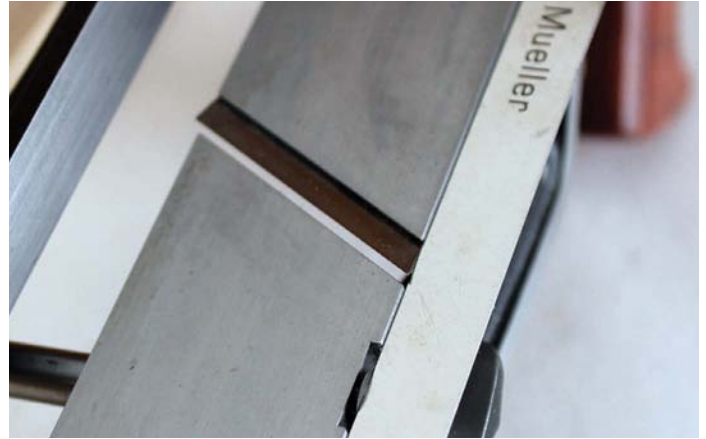


To cut rebates, start with a few short cuts near the far end of the board and move further back with each stroke, eventually making continuous full-length strokes. Keep cutting until the plane stops making shavings. I like to clean the surface, removing any shavings or dust and give a final pass for the rebates.

The No.1 complaint from some rebate plane users is that the rebates they cut are not always square. This is often not the tool’s fault or due to lack of use, but because they hold the skew rebate plane like a traditional hand plane. Unlike a regular plane, a rebate plane has a narrower sole, prone to tilting. To prevent tilting when you plane, don’t wrap all your fingers around the tote. Just hold it loosely with the index and middle fingers pointing forward. You can find more suggestions in the sidebar that give you better control of the tool and its results. As with the plough plane you will get more consistent results if you concentrate on applying a firm amount of lateral pressure from your non-dominant hand, i.e. left if you are right-handed. You might equate the balance of combined forces as a 60/40 split in favour of forward and downward force.

Start the initial cuts from the far end and work your way back to the other end

A loose grip of the tote and pointing forward reduces tilting the plane as you push



Positioning the blade corner just proud of the side will help cut a clean rebate

You need a properly set rebate plane to cut good rebates. Setting a rebate plane is, however, a little different from tuning up a smoothing plane. Not only is the cutting edge set parallel to the plane sole, the inside edge of the blade should also be a hair proud of the plane body so it cuts into the corner of a rebate. With the critical blade alignment set, you can now adjust the depth of cut – thinner cuts for harder wood – and set the depth stop for the rebate depth and the fence for the rebate width.

A word of caution here; the depth stop on some of these planes is more of a depth indicator and can quite easily lose its setting if it comes under heavy use. Pay extra attention if you are working multiple components that require the same profile. Unchecked, the first component can differ from the last by quite a bit.



Using the skew rebate plane

- Place your other hand low on the fence, not on the front knob – the knob is used only when making scoring cuts
- Keep the blade sharp and set for lighter cuts, especially on harder woods
- Remove the shavings often and wax the sole when making heavy cuts
- Use a sacrificial board to avoid break-out at the exit end



Rubber fingers offer a better grip of the metal fence as well as preventing finger cuts

A related hold-down jig



The rebate acts as both a fence and a hold-down for the long edge of the workpiece



For scoring, the outside edge of the nicker is set flush with the corner of the blade



The nicker is retracted (left) when working with the grain and set to cut (right) when cutting across the grain

Most woodworkers use a shooting board for end grain cuts, but did you know you can also shoot the long edges of a narrower workpiece safely? The trick is to use the shooting board with a hold-down jig, which is simply a square or rectangular board with rebates of varying depths.

For maximum strength, the deeper rebates – or thinner tongues – are cut on the

cross-grain sides. To reduce tear-out, I also cut the cross-grain rebates before the long-grain ones. To make the cross-grain cuts, engage the nicker to sever the wood fibre first. With the nicker set in place now retract the blade. Position the plane at the far end of your stock and, while holding the front knob and rear tote, press down firmly and pull the

plane back with its fence tight against the stock a few times.

Once the surface is scored, you can cut the rebate in the usual manner with forward strokes. Before moving on to cutting the long-grain rebates, remember to disengage the nicker. For the hold-down jig, you may also attach abrasive strips to the tongues to prevent slipping.

Bevel cutting

The skew rebate plane is also well suited for making angled cuts, if you use it with a tapered auxiliary fence. You can, for example, make raised panels with a tapered fence riding along a board's edges. Or, you can bevel a board's edges for a coopered door by running the tapered fence against the board's surface.

The key to cutting a consistent flat, angled surface is a stable registration of the fence against the stock throughout the cuts. However, as material is removed, say, in the case of raising panels, the bearing surface for the fence on the edge decreases. That means keeping the plane at a steady angle becomes increasingly difficult. My solution is to place the stock flush with the bench edge, offering a continuous and sufficient bearing surface for the fence.



Stack up the workpiece or set its edge flush with the workbench to provide more bearing for the tapered fence

Sharpening

My rebate plane blade has a 22° skew, ground with a 30° bevel. When sharpening, it is important to maintain not only a consistent bevel but also the skew angle of



A skew jig offers repeatability and simplifies the work of setting both skew and bevel angles accurately

the blade, which allows the plane to cut right into the corner of a rebate. Some woodworkers possess the talent for freehand sharpening this kind of skew blade with accuracy. The rest of us will benefit from some form of a honing jig – commercial or shop-made – to do the sharpening with accurate and consistent results.

The Veritas MKII honing jig, when used with its skew registration jig, is a foolproof way of locking the blade in the desired skew angle and bevel. If you prefer a shop-made solution, however, then the American author and teacher Christopher Schwarz came up with a clever holding jig that allows you to hone a skew blade with good results. Finally, the nicker also needs

to be sharpened when dull, by simply lapping the flat face of the blade on a waterstone. A skew rebate plane may not be the first plane you grab for many of the tasks, but it is indispensable when you have lots of rebates to cut by hand or machine marks to remove from the rebates. *F&C*

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Schwarz, Chris. 'Correct the skew on a plane blade or chisel'. Popular Woodworking, 2012.
As retrieved from www.popularwoodworking.com/woodworking-blogs/chris-schwarz-blog/correct-the-skew-on-a-plane-blade-or-chisel

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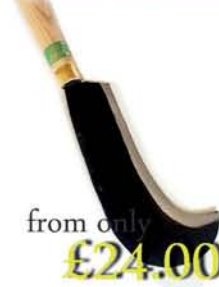
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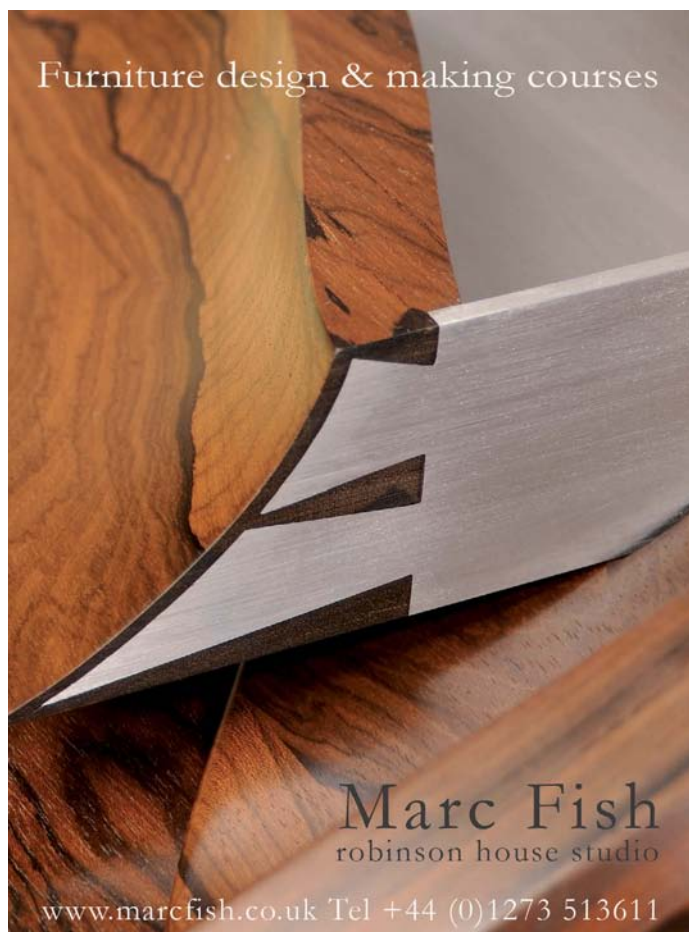
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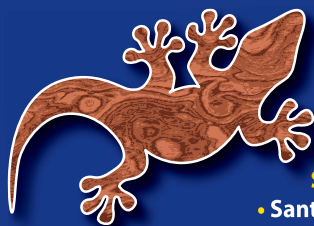
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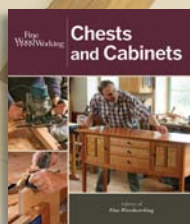
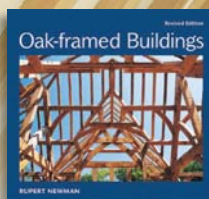
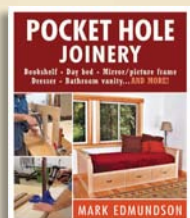
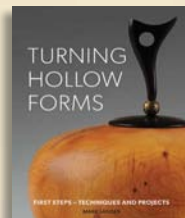
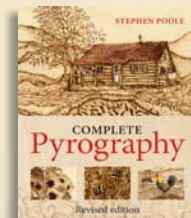
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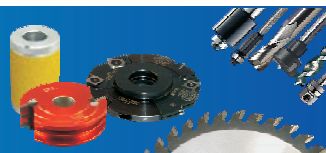
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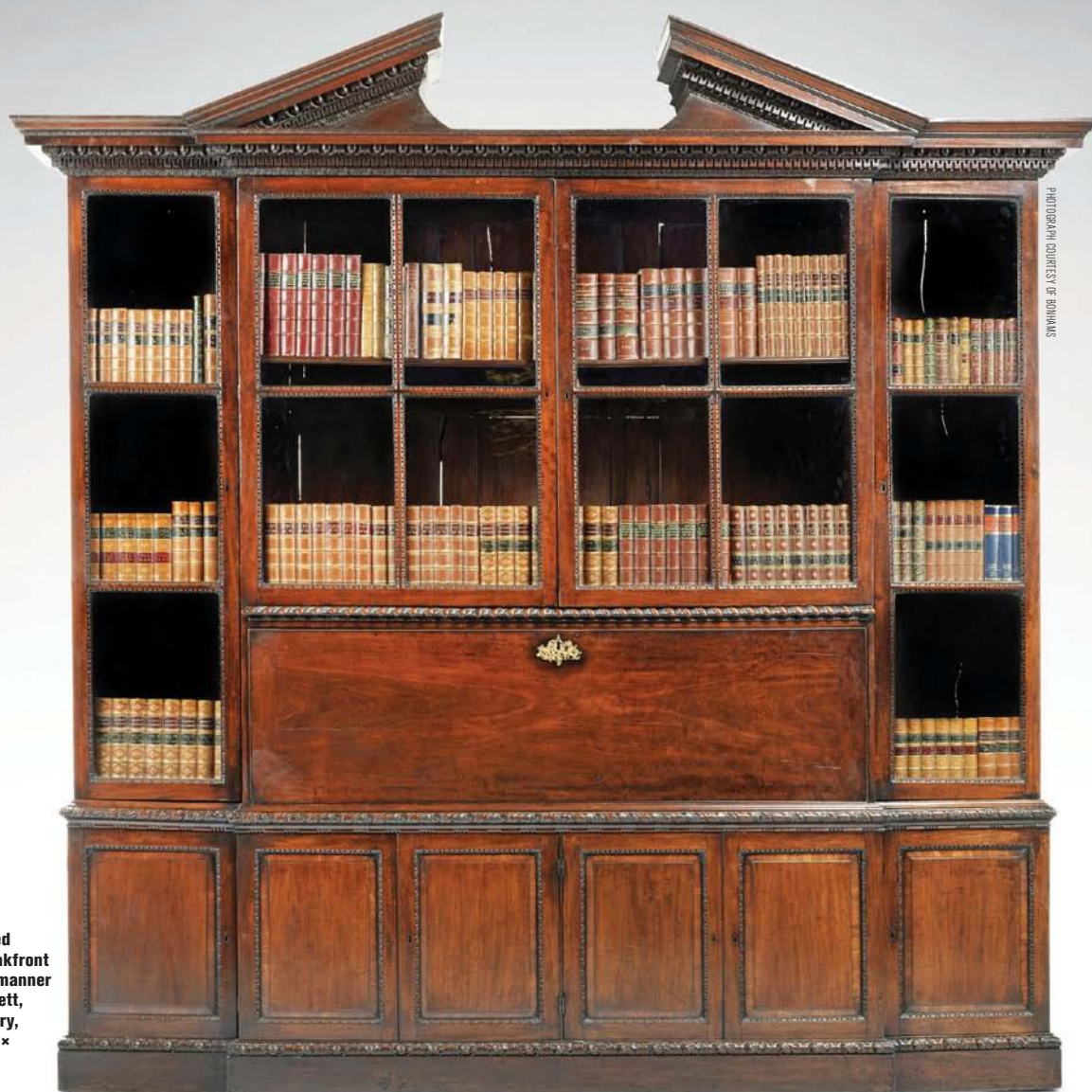
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UNDER THE HAMMER:

George II carved mahogany breakfront cabinet

We take a look at a prized lot from Bonhams' 'Britain – Defining the Interior' sale



George II carved mahogany breakfront cabinet in the manner of William Hallett, mid 18th century, 2,810mm wide x 490mm deep x 2,800mm high

This George II carved mahogany (*Swietenia macrophylla*) breakfront cabinet, in the manner of William Hallett from the mid 18th century, recently went under the hammer as part of Bonhams' 'Britain – Defining the Interior' sale, which took place in London on 3 June, 2015. With an estimate of £50,000-80,000, the cabinet surpassed all expectations and ended up selling for £120,100.

Looking at this stunning piece, the

crenelated broken arch pediment features both egg and dart and foliate mouldings and the two pairs of glazed panelled doors are similarly carved and have enclosing adjustable shelves. The central fall front panel is headed by a gadrooned moulding and reveals an arrangement of 31 drawers, each inlaid with sycamore (*Acer pseudoplatanus*) labels with letters of the alphabet and months of the year above a recess with a central division.

The lower part features a ribbon and paterae carved moulding above two pairs of fielded panel doors with conforming borders. These reveal two banks of three long drawers and a pair of adjustable shelves to the sides, on a plinth headed by a paterae and dart moulding. The piece measures 2,810mm wide x 490mm deep x 2,800mm high.

To find out more about this and other lots in the sale, see www.bonhams.com. *F&C*

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Precision Routing

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PT107 10" x 7" Heavy Duty Planer Thicknesser

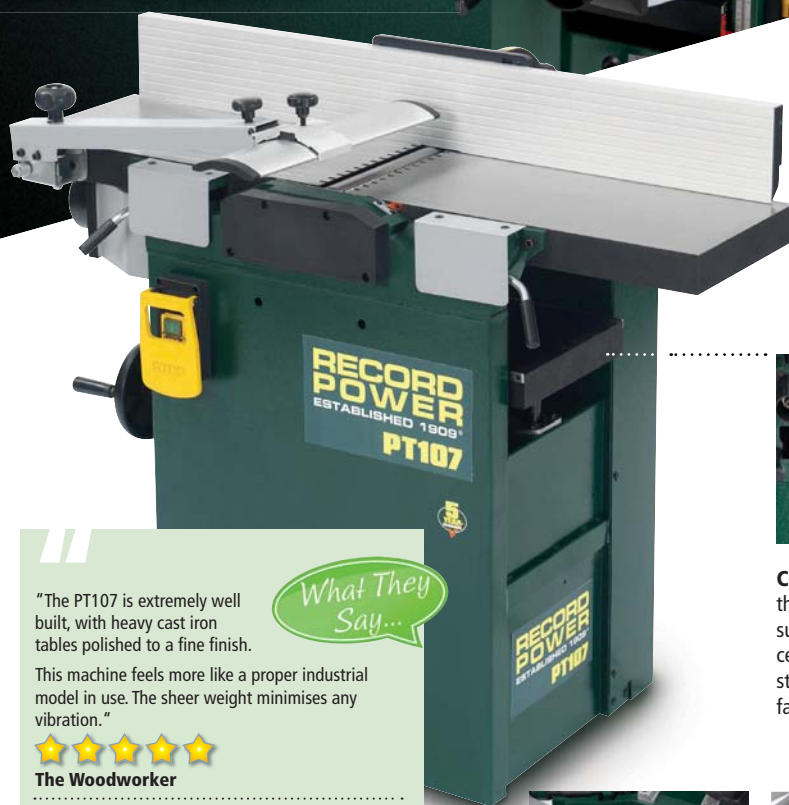
The PT107 is perfectly suited to the discerning woodworker who expects professional and **reliable performance** from a **solid, durable** and **compact machine**. Whilst compact enough for smaller workshops and ideal for serious home or trade users, this machine boasts some impressive industrial features and is exceptionally smooth and accurate in operation. If you are in the market for a good planer thicknesser then check this out at one of our display stockists to fully appreciate the value on offer.

Only

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RRP £1249^{.99}

Save £250



Central Column The thicknessing table is supported by a sturdy central column for superior stability and easy rise and fall adjustment.



Cutter Block The three knife cutterblock ensures an excellent finish.



Sturdy Fence System The fence can tilt up to 45° and is supported by a strong mounting system.

"The PT107 is extremely well built, with heavy cast iron tables polished to a fine finish.

This machine feels more like a proper industrial model in use. The sheer weight minimises any vibration."



The Woodworker

"Top quality

This is a very well made machine with full adjustment of both infeed and outfeed tables. This is unusual in a home workshop machine and allows very fine adjustment to eliminate any gouging at the end (snipe)...Results are excellent, chip clearance is good and the changeover from planing to thicknessing is quick and easy".



DesmondW, Online Review

What They Say...

Price valid until 28.02.2016. E&OE.

See the value the **PT107** offers for yourself at the following stockists:

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Aldermaston Tool Company Youngs Ind Est, Paices Hill, Aldermaston, Berkshire, RG7 4PW **0118 981 1470**

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Westcountry Machinery 4 wood Beacon Kilns, High Street Village, St Austell, Cornwall, PL26 7SR **01726 828 388**

Jaymac (Derby) Ltd 852 London Road, Derby, Derbyshire, DE24 8WA **01332 755 799**

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John Davis Woodturning The Old Stables, Chilbolton Down Farm, Stockbridge, Hampshire, SO20 6BU **01264 811 070**

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J Carr & Son Ltd 9-10 Horncastle Road, Boston Lincolnshire, PE21 9BN **01205 351 555**

D&M Tools 73-81 Heath Road, Twickenham, Middlesex, TW1 4AW **0208 892 3813**

Norfolk Saw Services Dog Lane, Horsford, Norwich, Norfolk, NR10 3DH **01603 898 695**

Snainton Woodworking Supplies Barker Lane, Snainton, Scarborough, North Yorkshire, YO13 9BG **01723 859 545**

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