Furniture &cabinetmaking

DESIGN • INSPIRATION • PROJECTS • TECHNIQUES • TESTS • NEWS

Restoration Man

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WIA 2016 show report

PROJECT
Piston fit pencil case

In the footsteps of Sheffield's finest – Skelton Saws' Kenyon reviewed

Panel Saws

K4 perform

K3 winner comfort

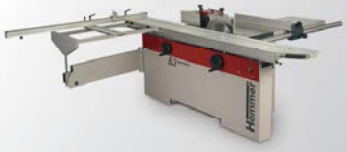
Planer-thicknessers/Planers/Thickn

A3 41

A3 31

A3 41 A

Saw Spindle Moulder



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B3 winner

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C3 31

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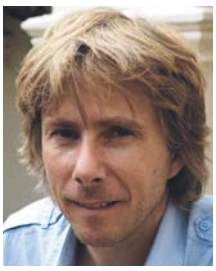

Welcome to...
...show time

Just when I thought I was through with building benches for a while, out of nowhere and completely unannounced came bench number 11 or 12 (I've lost count over the years) and probably the quickest and cheapest build to date. At around 14 hours and under £100 it conforms to the 'low fat' criteria of recent projects with the added bonus of fitting into the back of your average family estate. The design is a hybrid of other knock-down benches made to accompany me at the North of England Woodworking Show. Nobody wants to be hanging around at the end of a three-day stint so I'm hoping that a mixture of off-the-shelf fixings (T-nuts and bolts) and sophisticated KD fixings from Lamello will have me packed up and heading for home in record time. For its first outing and like nearly every bench I've made, it will be a work in progress with a few accessories.

The bench where I built the most furniture comprised two cast-iron band stands retrieved from a builder's yard, a couple of 4x2 bearers and a full sheet of block board. The absence of bench dogs and a vice didn't seem to hamper progress, in fact the biggest advantage was having a full 8x4 sheet of real estate as a bench top. Looking back I guess the workflow was more about assembly than build quality; the direct consequence of working predominantly in sheet goods. Although I may not have maxed out on fancy hardware I was obsessive about dust control long before dust control became an obsessive issue. At that time, in my mid twenties, I was less concerned with the health implications of working with MDF than contaminating the black velour of my E30 325i Touring, which is still the BMW I hanker after now. Clarkson said at the time that for a sports car it was a really good estate. He was right. I could usually be on site with a boot full of tools long before the van turned up with the furniture.

PHOTOGRAPH BY DEREK JONES/GMC PUBLICATIONS

Moxons at the ready for the North of England Woodworking Show in Harrogate with a new bench and a few essentials

Multiple entry points

When it comes to promoting best practice it's worth remembering that there are multiple entry points into our psyche where we are more likely to respond favourably to external pressure. Festool have long been associated with the concept of a dust-free working environment and at times it must have felt like leading the charge for the paperless office, which was only ever good on paper and not in practice. Their latest campaign, however, has them teaming up with the British Lung Foundation to get the message across. If it appears on your radar throughout 2017, take five and listen up.

Regular readers will notice a few changes to our format this month as we begin to roll out a few new features. Starting at the back (page 80) we have a new style of profile article designed to maximise the benefits of the digital version of the magazine with extended picture galleries. We're also integrating with our online community by recommending blogs and social media accounts where we think you'll find the best information out there. No surprise then, that it's a work in progress as we respond to your wishes and make the magazine the best on the newsstand.

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Furniture &cabinetmaking

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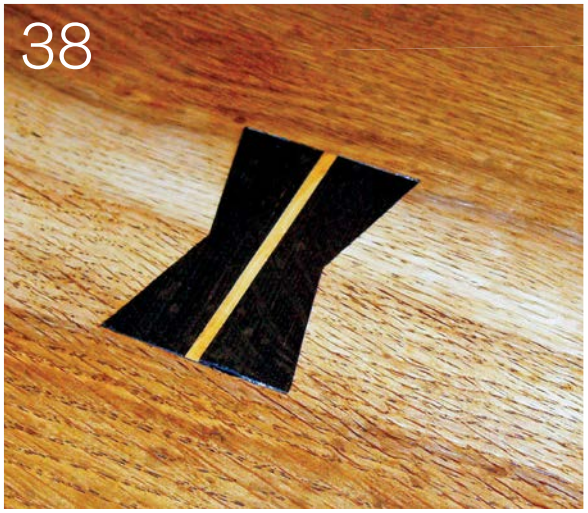
Windsor Journeyman – see page 44
Front cover image by Derek Jones/GMC Publications

Your *F&C*

Don't forget there are plenty more articles and discussions to be found on the Woodworkers Institute & Forums
www.woodworkersinstitute.com

Design & Inspiration

Projects & Techniques



News&Events

Contribute to these pages by telling us about matters of interest to furniture makers. Call Derek Jones on 01273 402 843 or email derekj@thegmcgroup.com

Please accompany information with relevant, hi-res images wherever it is possible

Wood Awards 2016

The Wood Awards is the UK's premier competition for excellence in architecture and product design in the world's only naturally sustainable material. The Awards aim to recognise, encourage and promote outstanding design, craftsmanship and installation using wood.

The competition began in 1971 as the Carpenters' Award and was relaunched in 2003 as the Wood Awards. The Awards have had an impact on the architectural and design landscape, becoming a 'mark of excellence' in wood. For furniture makers the event is a rare opportunity to have work critiqued and appraised within the context of a wider and less vernacular focused audience. The short list of entrants is typically announced in June with the award ceremony held in November. Intentional or not, this year's winners in the furniture categories suggest a healthy and somewhat timely recognition of craft-based skills.

PHOTOGRAPHS COURTESY OF WOOD AWARDS

Planks Table & Bench by Max Lamb

Winners in Furniture & Product Design: Bespoke: Pantori by Steph Leake, Intern at Jack Badger Ltd.

Inspired by the Japanese Wabi-Sabi aesthetic that embraces simplicity and naturalness, Pantori is a freestanding pantry larder, created for Japanese crepe eatery, Noj . A combination of Japanese and English joinery has been used. The top has been jointed using three way mitres and wedged tenons, the rails are housed dovetails, while the drawers have been housed and nailed with ring shank nails typically used in boat building. Oak was selected for the frame and flexible straight-grained ash for the woven inner drawers. Shou Sugi Ban, the traditional Japanese technique of burning timber to preserve it and make it resistant to fire, rot and insects, inspired the scorching on the oak.

Production Made: joint winners, Planks Collection by Max Lamb and Stretch Table by Pengelly Design

Designed by Max Lamb, Planks' roots lie in the humble carpenter's workbench and 17/18th-century English country furniture. The collection (a dining table, bench, shelving, console table and lounge table) promotes utility, strength, durability and economy of material.

The Stretch Extending Dining Table was conceived to use the natural characteristics of formed ply. The form of the laminations enables the top to slide along a very simple metal frame, exposing the extension leaves stored within the table.

Student Designer (People's Choice): Velo Chair by Jan Waterston at Rycotewood Furniture Centre

Inspired by the bicycle, the Velo Chair connects body and object by seamlessly wrapping itself around the user. Each surface is hand sculpted. Ash was selected for its flexibility, allowing the complex curves to be freeform laminated. The flexibility also allows a more comfortable backrest which moulds around the sitter.

Student Designer winner: Geometry table by Michael Stevenson at Building Crafts College

Geometry is a modern circular dining table. The frame is inspired by molecular geometry, made with stainless steel rods and contrasting classic oak junctures. The table top consists of constructional oak veneer and solid oak lipping.

Contact: Wood Awards
Web: www.woodawards.com

Pantori by Steph Leake

Are you sitting comfortably?

PHOTOGRAPHS BY BRENT STIRTON, COURTESY OF GETTY IMAGES/WWF-UK

On 15 November, 2016 the WWF-UK published its report 'Are you sitting comfortably? Sustainable timber sourcing and the UK furniture industry', to establish the origins of the furniture that's sold in the UK, and to find out whether UK businesses are doing their best to ensure that the world's forests are being managed in ways that will secure this vital natural resource for the future. While the mention of sustainability and similarly impressive ethical practices have featured in many high street campaigns, for more than a couple of decades it appears that some of the biggest names might not be delivering on their promise.

For 68% of furniture retailers assessed, it is unclear what action, if any, they are taking on sustainable timber sourcing for the furniture reaching our market. Among those listed in the report are Next and Oak Furnitureland, both highlighted as being unclear about their commitment to sustainability. The report also suggests that with total furniture imports from 'high risk' countries such as China, Vietnam, Malaysia, Brazil and Indonesia valued at over €1.9 billion, it could put furniture businesses at risk. Looking at 74 of the most prominent UK furniture retailers, the report found that 68% have no published policy or any other credible sourcing statement, suggesting they either don't see the need for responsible sourcing of timber, or are not willing to provide any information to support any customer interest in environmental matters. These retailers include some prominent brand names such as Laura Ashley, Furniture Village, Harveys and Staples, as well as the department stores Debenhams and House of Fraser.

Interestingly, names that we might suspect as being less than committed are in fact making 'good progress'. These include B&Q, Wickes, Magnet, Warren Evans, and Office Depot. Others have achieved a rating of just 'progress', indicating they are taking steps to comply with their policy commitments; including Argos and, wait for it... Ikea.

You can find the full report at www.wwf.org.uk and it certainly makes interesting reading not least for the fact that smaller business could easily promote and implement a sustainable policy as part of the USP to entice customers away from the high street.
WWF – What are you Waiting For.

Contact: WWF Web: www.wwf.org.uk

Apprenticeship scheme makeover

As of the 1 December, 2016 a new scheme developed by the furniture industry in support of the government apprenticeship scheme will come into effect. Everything you need to know can be found on the British Furniture Manufacturers (BFM) website. It includes among other things, general furniture manufacturer, modern upholsterers, fitted furniture installer, furniture restorer, modern furniture service repairer, wood machinist and furniture CNC specialist.

Jackie Bazeley, BFM md said: "Apprenticeships are a great way to enhance a company's work force, developing skills and bringing a fresh perspective on board. Our website is currently the only essential source of information on the new scheme and we are encouraging all those interested in hiring an apprentice to take a look."

Contact: British Furniture Manufacturers Web: www.bfm.org.uk

New high performance tape from tesa

We're no strangers to double-sided tape in the workshop, so when tesa wrote in to tell us all about their new high performance tape for external use, naturally we were all ears. At 1mm thick it might not be the ideal bond for temporary jigs and templates, but the conformable foam backing makes it ideal for planting trims and all manner of extraneous items around the workshop. In the words of Jeremy Smith, Marketing Manager for tesa UK: "tesa 62510 offers companies in various sectors a powerful solution for constructive bonding that creates new possibilities for innovative mounting designs through promoting new combinations of materials, enhancing the end result and delivering a more efficient means of processing."

Phew! You probably wouldn't want to get stuck in a lift with Mr. Smith.

Contact: tesa
Web: www.tesa.co.uk

PHOTOGRAPH COURTESY OF SNICKERS

Winter warmers

With the warmest winter on record for years, Snickers might be a little 'off' with their timing as they launch a new range of winter workwear.

The Swedish company, renowned for innovative solutions and quality, are pioneering the design and development of amazing 'First Layer' underwear that will keep your body dry and comfortable throughout your working day. With a range of high performance fabrics that include Merino Wool, the range boasts an effective combination of ventilation, insulation and protection.

You can find out if it's more than just pants by visiting www.snickersworkwear.com

Contact: Snickers Workwear
Web: snickersworkwear.com

Romag's glass has been used for new display cases at a military museum at historic Alnwick Castle

On guard at Fusiliers' museum

Artefacts spanning more than 300 years of military history and warfare are on show to visitors at Northumberland's Alnwick Castle in display cases featuring the latest in protective glass technology, supplied by specialist manufacturer Romag. The glass was specified for the new display cases housing the Royal Regiment of Fusiliers' permanent museum in the Abbot's Tower at the castle, protecting and showcasing hundreds of artefacts covering the history of the regiment from 1674 to the present day. The exhibit includes weapons, uniforms, musical instruments, armour, diaries, letters and other countless items of personal, regimental equipment and militaria. The centenary of the First World War is also marked by the museum with a special Great War exhibition.

The display cases, built by museum fit out and display specialists The Workhaus, offer a 'close encounter' visitor experience and feature integrated top and bottom banding to hide the door hinges.

The glass panels function as an integral part of the display cabinets to provide an airtight seal for improved humidity control, helping to protect the artefacts from potential moisture damage in the historic setting of the Tower, which itself is hundreds of years old. Graham Paylor, case designer at Workhaus, said: "This is an interesting heritage application. The specification called for a high quality, high performance glass viewing solution with added security, which Romag has provided." Romag safety glass is stringently tested to ensure manufacturing processes comply with industry regulations and performance standards.

Contact: Romag
Web: www.romag.co.uk

Festool clears the air

Following research carried out by the British Lung Foundation indicating that carpenters are four times more likely to develop asthma than other UK workers, Festool are supporting a campaign to raise awareness of the issues surrounding the extended exposure to wood dust. And just as dust won't distinguish between one set of lungs and another, we can safely assume that cabinetmakers might also be included in that statistic.

As a known carcinogen, exposure to wood dust can also increase your risk of lung cancer. The BLF's Battle of Breath study found that over 43,000 people are diagnosed with the condition every year. Whilst it is the second most common form of cancer in the UK, after breast cancer, the mortality rate is higher. Statistically, only half of the people diagnosed with lung cancer will survive six months after diagnosis. It is the biggest cause of death from cancer and lung disease in both men and women in the UK.

Hundreds of tradesmen at W16 visited the Festool stand where nurses from the BLF carried out a free lung health check. Pete Higginson, a Carpenter, said: "I think I will be cutting up wood for the next 40 years. I don't smoke so it's worth looking after the pair of lungs I've got!"

Considering the additional potential risks to our health and safety, it's important to make adjustments to our behaviour however subtle, if we are to live long and prosper.

Contact: Festool
Web: www.festool.co.uk

Events

Top Drawer

Top Drawer brings together the leading brands, designers, suppliers, manufacturers and distributors in the sectors of Home, Gift, Fashion and Craft. The show's organisers are committed to discovering and supporting bright new talent, so there is always something new and interesting to discover.
When: 15–17 January, 2017
Where: Olympia, Hammersmith Road, London W14 8UX
Web: www.topdrawer.co.uk

imm cologne: the international interiors show

imm cologne presents the latest trends that will be shaping the furniture and interiors sector. At the imm cologne, you will find a unique variety of interior design ideas for every room, every style and every requirement – from the basics all the way to designer items and luxury furnishings.
When: 16–22 January, 2017
Where: Koelnmesse, Messeplatz 1 50679 Köln, Germany
Web: www.imm-cologne.com

The AIS Furniture Show

Associated Independent Stores (AIS) are bringing together 40 leading brands for their January show. The show is open to AIS members only for the first two days and is then open to all.
When: 20–23 January, 2017
Where: Cranmore Park, Cranmore Avenue, Shirley, Solihull B90
Web: www.thefurniture-show.co.uk

Maison & Objet Paris

This show covers three sectors: MAISON is interior decoration. OBJET is concept and retail, while the third section INFLUENCES encompasses luxury, design and architecture. There will also be themed installations, conferences and awards for established and new designers.
When: 20–24 January, 2017
Where: Paris Exhibition Centre Nord Villepinte, ZAC Paris Nord 2, 93420 Villepinte, France
Web: www.maison-objet.com/en/paris

Northpoint

North Point is the new furniture and interiors exhibition for the northern UK. Companies representing various industry sectors will be exhibiting, including upholstery, living room, occasional, dining, mirrors, pictures, lighting, accessories, bedrooms, beds and floor coverings
When: 29–31 January, 2017
Where: Highland Hall, Ingliston, Edinburgh EH28 8AU
Web: www.thenorthpointshow.co.uk

Information correct at time of publication, check websites before planning your visit

Woodworking shows & events 2017

Spring Fair
When: 5–9 February, 2017
Where: NEC Birmingham, North Avenue, Marston Green, Birmingham B40 1NT
Web: www.springfair.com

Ideal Home Show
When: 24 March–9 April, 2017
Where: Olympia, Hammersmith Road, London W14 8UX
Web: www.idealhomeshow.co.uk

The Midlands Woodworking & Power Tool Show
When: 24–25 March, 2017
Where: Newark Showground, Lincoln Road, Winthorpe, Newark NG24 2NY
Web: www.nelton.co.uk/midlands-woodworking-power-tool-show.html

Midcentury Modern Show
When: 19 March, 2017
Where: Dulwich College, London SE21 7LD
Web: modernshows.com

Yandles Woodworking Show
When: 7–8 April, 2017
Where: Yandle & Son Ltd, Hurst Works, Hurst, Martock, Somerset TA12 6JU
Web: www.yandles.co.uk

Pulse
When: 14–16 May, 2017
Where: Olympia, Hammersmith Road, London W14 8UX
Web: www.pulse-london.com

Minerva Spring Exhibtion
When: 16–17 May, 2017
Where: International Centre, St Quentin Gate, Telford, Shropshire TF3 4JH
Web: www.minervafurnishers.co.uk

Clerkenwell Design Week
When: 23–25 May, 2017
Where: Clerkenwell, London
Web: www.clerkenwelldesignweek.com

New Designers Part 1 and Part 2
When: 28 June–1 July, 2017 (Part 1); 5–8 July, 2017 (Part 2)
Where: Business Design Centre, 52 Upper Street, London N1 0QH
Web: www.newdesigners.com

Manchester Furniture Show
When: 16–18 July, 2017
Where: Manchester Central Convention Complex, Windmill Street, Manchester M2 3GX
Web: www.manchesterfurnitureshow.com

Home & Gift
When: 16–19 July, 2017
Where: Harrogate International Centre, King's Road, Harrogate HG1 5LA
Web: www.homeandgift.co.uk

Autumn Fair
When: 3–6 September, 2017
Where: NEC Birmingham, North Avenue, Marston Green, Birmingham B40 1NT
Web: www.autumnfair.com

European Woodworking Show
When: 16–17 September, 2017
Where: Cressing Temple Barns, Witham Road, Cressing, Braintree, Essex CM77 8PD
Web: www.europeanwoodworkingshow.eu

London Design Festival
When: 16–24 September, 2017
Where: Various London sites
Web: www.londondesignfestival.com

Build Show
When: 10–12 October, 2017
Where: NEC Birmingham, North Avenue, Marston Green, Birmingham B40 1NT
Web: www.ukconstructionweek.com/build-show

The January Furniture Show

Over 450 exhibitors will be at the show, covering all aspects of the industry

PHOTOGRAPHS COURTESY OF THE JANUARY FURNITURE SHOW

Leading brands from the UK and around the world will be showcasing their new products

The January Furniture Show at the NEC is the most important and comprehensive event in the furniture industry calendar. Featuring over 450 exhibitors, you will discover all the UK's major upholstery, cabinet and bed suppliers, plus leading brands in accessories, flooring, fabric and lighting. International exhibitors include major brands from Italy, Germany, Portugal, Belgium, Poland, France and the Far East. Encompassing everything from tea lights to grand sofas, The January Furniture Show offers retailers, interior designers and specifiers the first opportunity of the year to see and buy the latest designs.

Every sector of furniture and interiors buying attends the show, including multiple retailers, independents, interior designers, contract buyers for public and private sectors including hospitality, hotels and restaurants, local authorities, architects and developers. Industry categories covered at the show include: upholstery and living; cabinet, dining and occasional; beds and bedroom furniture; decorative accessories; soft furnishings and fabrics; lighting; floor coverings; pictures, prints and mirrors; garden furniture; home office and software systems.

The annual 'Furniture Awards' will be presented in the categories of Bedroom, Dining, Living and Décor.

This year's show has a new online feature: on the Browse Exhibitors page you can create your own Favourite Exhibitors list. Simply select the exhibitors you want to visit and see them plotted on the relevant Hall plans, which you can then print off.

When: 22–25 January, 2017
Where: The NEC, North Avenue, Birmingham, West Midlands B40 1NT
Web: www.januaryfurnitureshow.com

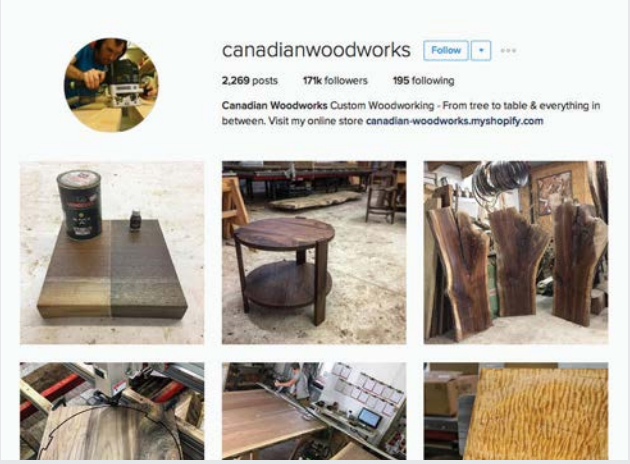
Social media dashboard

We bring you a round-up of the best from the online world plus the latest projects from our readers

Welcome to a new section of the magazine, which will bring together the best furniture and woodworking related content from social media. Here we'll recommend who to follow, where to comment and which online communities to join. We'll also feature readers' letters, comments from the Woodworkers Institute forum and pictures of readers' work. If you'd like to see your work on these pages, email derekj@thegmcgroup.com

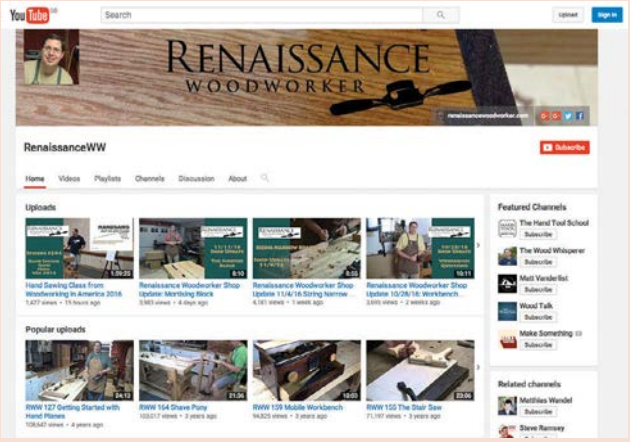
Instagram: Canadian Woodworks

Canadian Woodworks' Instagram account includes 'from tree to table and everything in between'. The owner of Canadian Woodworks designs and builds custom furniture and his Instagram feed documents the making process, from timber to finished item.
Address: @canadianwoodworks



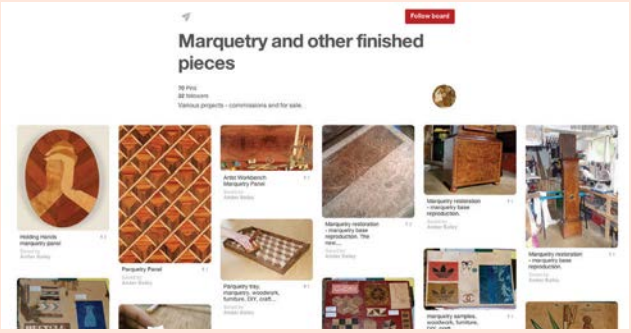
YouTube: RenaissanceWW

The Renaissance Woodworker is Shannon Rogers, a craftsman who started a blog to share his love of hand tools and 18th-century styles. His videos cover a variety of topics and projects, such as making a Roubo workbench, getting started with hand planes and using a shave pony. Many of the videos are under 30 minutes so make ideal viewing during a coffee break!
Address: www.youtube.com/user/RenaissanceWW



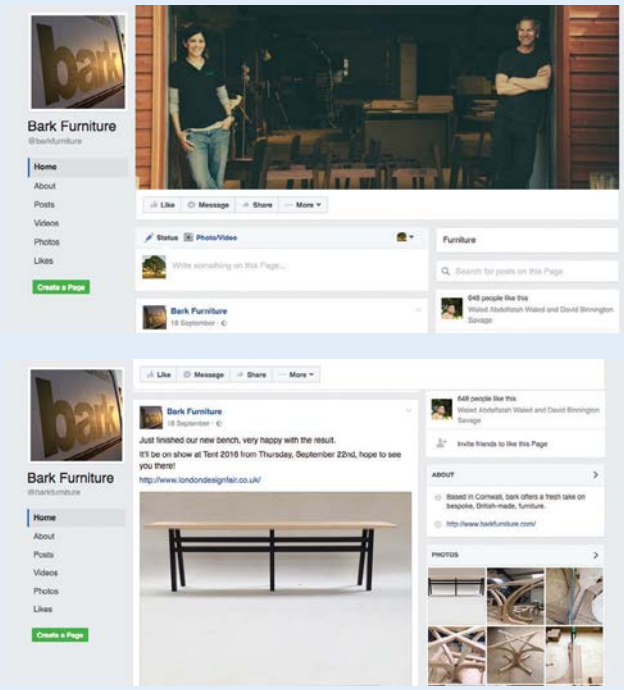
Pinterest: Amber Bailey

Marquetarian – and F&C author – Amber Bailey shares her latest commissions, restorations and other crafts projects on her Pinterest account.
Address: uk.pinterest.com/abmarquetry



Facebook: Bark Furniture

Bark Furniture is a Cornish-based company run by Jonathan Walter and Lakshmi Bhaskaran. They use traditional cabinetmaking skills to create stylish bespoke furniture. Their Facebook page contains updates on their latest projects and news about exhibitions and events.
Address: www.facebook.com/barkfurniture



Twitter: The Joinery

The Joinery account on Twitter was started by a young Japanese man as a way to celebrate traditional Japanese joinery techniques. The account features animated gifs illustrating how joints work. Although very simple animations, it is fascinating to watch the joints coming together, and it has proved popular – the account has over 30,000 followers.
Address: @TheJoinery_jp

Blog: Lumberjocks

Lumberjocks is a popular online community for woodworkers, featuring blogs, projects, kit reviews, videos and a discussion forum. A virtual workshop, it provides a place for people from around the world to share pictures of their work and talk about everything to do with woodworking.
Address: lumberjocks.com

From the forum

Here we share with you the pieces that readers have posted on our Woodworkers Institute forum. If you are interested in the possibility of your piece appearing here, or would simply like feedback and advice on your work, visit www.woodworkersinstitute.com and click on the forum button.

Butterfly box by bat21

This box by forum user bat21 is made from brown burr oak veneer, with a European oak interior. The flowers and butterfly are sycamore and tulipwood. The flowers are sand shaded to add some depth. It was finished with chestnut acrylic lacquer.

Projects we love

Here we highlight the latest furniture and woodworking projects from around the world that we think deserve to be shared with our readers. If you're a member of a collective or a student group and would like to see your work here, then submit a story to derekj@thegmcgroup.com

Charlie Winnie Studio

Charlie Winnie produced this series of steam-bent oak sculptures for the RHS Hampton Court Palace Flower Show. The sculptures have a spatial element to their design, looking like people from one angle and an 'element' from another. The Near Future Garden was designed to reflect humanity's interaction with the earth's resources, with each of our three sculptures representing one of Nature's powerful elements: the sun, wind, and water. The Near Future Garden will be moving to the Eden Project, Cornwall in 2017.
Address: charliewhinney.com

Mortice & Tenon Joints?

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In profile – Torsten Sherwood

We find out more about London-based designer Torsten Sherwood

Torsten Sherwood is a multidisciplinary designer working in architecture, furniture and product design. His work is influenced by an understanding of and experimentation with materials, construction and making. His career has already been full of accolades: he has exhibited at the Salone Satellite in Milan, was the London Design Museum's Designer in Residence 2014/15, is one the Design Council's 'Ones to Watch', has been shortlisted in the Wood Awards and named as one of Design Week's Rising Stars.

Cross laminated timber table

PHOTOGRAPHS BY TORSTEN SHERWOOD

Please tell us a bit about your background. What led you to furniture making and what training did you have?

My background and profession is very much in architecture and design, and it's through this that I have developed an interest in practical craft and making as a part of my design process. Ever since school I have had a strong interest in design in general and this led me on to training as an architect, first at Bath and then at The Cass [The Sir John Cass School of Art, Architecture and Design], and it was through studying architecture that I became interested in making.

Particularly at my undergraduate course at Bath, they taught architecture with a very strong emphasis on materiality and construction in architecture. What in architecture we call 'tectonics' – the way in which materials and construction are used to create distinctive and conscious architectural expressions. I found this approach to design really convincing. Simply put, all architectural or design interventions need to be made, and need to be made out of some sort of material. But the process of making, and the properties of the materials, have such an influence over the nature of the final outcome, that you simply can't design something properly if you don't understand how it is made and what it is made from.

However, after four years of studying architecture I had never actually made anything, but just drawn all these ideas up – and it was out of this frustration that I felt the need to start making. Not only did I feel the need to go beyond the sketch and make my ideas a reality, but I also felt that my designs were never fully developed because I hadn't really understood how they were made – and of course I didn't really know how they were made – I had no experience of making. So my personal interest in making is very much about how making can be used in the design process – or how making needs to be used in the design process. My ethos is very much that there needs to be a very close relationship between designing and making and although industry and education talks in this way, they very rarely put it into practice. And because of its scale, and my general interest in design, furniture was the most accessible way of getting involved in making practically. However, I am hoping to apply the same approach to architecture in the future.

Would it be fair to say that design appears to be the driving force behind your work and not necessarily the process of making?

I understand why you say that, but in many ways I think it is the exact opposite. What I am trying to do in a lot of my work, is to try and use the processes of craft and making as the generator behind the design, rather than coming up with a design and then trying to figure out how to make it. Certainly I wouldn't describe myself as a 'maker' or 'carpenter', I am definitely a designer but as I said I am interested in the role of making in the design process.

I think you can see this in a lot of my furniture. The Throne and Pew stools are plays upon a traditional finger joint. The Banca desk looks at how a finger joint could connect to a leg. The Homage chair tries to make a strong and ergonomic chair frame with very simple dowel joints. All of which are really trying to solve the problem of how to connect or join different elements in a way that is technically and aesthetically well resolved – a design which is 'tectonic'.

Certainly there is a design or aesthetic taste that influences how the designs are developed but I think the main driver behind the designs is an interest in how the item is made.

The Banca Desk was originally designed as a meeting table in a Bank; 'bank' coming from the medieval Italian 'Banca', referring to the bench over which money was exchanged. The Banca needed to be both formal but plain. Its key feature is its beautiful extended finger joints that connect the legs to the table top. Not only is this joint immensely strong and easy to make but it also becomes decoration; a feature akin to the triglyph of a doric frieze

Did you set out to be a designer or a maker?

I certainly set out to be a designer rather than a maker. But through developing as a designer I have learnt how important it is to have a first-hand experience and knowledge of making.

Some of your furniture designs use construction methods that are contrary to traditional techniques. Do you set out with that aim in mind?

I don't think I consciously set out to do something different for the sake of doing things differently, but my design process is certainly explorative, and out of that you come across new ways of doing things.

The Throne and Pew stools are a good example of this. Traditionally if you want two planes of wood to meet you might join them with a finger joint. The idea behind these stools was; what if one of these planes was actually a set of slates? This way you wouldn't be fixed to just a single plane but could have multiple planes meeting. Maybe these slates could interact to make a stronger structure. This would allow you to make the timber thinner as the strength of the piece now comes less from the material and more from structure – and as the size of the timber shrank you could no longer rely on just a glued joint and so arose this idea of a continuous brass dowel joining all the fingers.

I think this is one of the ways in which my complete lack of any training in carpentry and making has some real benefits. I often notice that carpenters seem to have been trained in how to do things rather than why they do things. While this is really practical – you don't have to reinvent the wheel every time you come across something new – it also prevents you from questioning why something is done in a certain way or how that might be different.

From my perspective as a designer, I am particularly interested in why a design is a certain way, and questioning this. So my process often starts by considering the constraints – how a material behaves, how it is joined, how it is cut – and using these fixed rules that you cannot change to guide the ideas. Far from being a free, open-ended creative process, design is often more like solving a puzzle within tight constraints. These constraints are what help you design.

The design of the Throne and Pew stools is an innovative take on a traditional timber detail, the finger joint, where the fingers intersect to create a v-shaped seat and a very strong structure. Although intricate, the designs are easy to make and are a good example of 'tectonic design', where construction and poetry combine

Was being the Designer in Residence at the Design Museum a bit like working in a goldfish bowl?

To be given a platform like that at the Design Museum certainly put my work under the spotlight, and that brought a huge amount of stress, pressure and anxiety with it. Having only just graduated it was the first time there was any genuine pressure on me to deliver something good, and up till about three or four weeks till the opening of the exhibition I really thought I might not have any thing at all to show for it. So, yes the knowledge that it was such a public commission made it very different.

However, back then the residency programme was more like a commission for an exhibition and so the spotlight was more on the outcome than the process. Now that the new Design Museum has just been opened, the residents have their own space to properly be 'resident in' and this will mean their process and development is far more on show than it was before. Which in many ways is probably the way in which design should be showed in a museum context. It is much more insightful if youcan see the process behind a design rather than just the outcome and this is exactly what a museum should be doing.

Your brief at the Design Museum was the theme of 'disruption'. How did you respond to that brief?

My residency project was 'noook', a large scale construction toy for building things like dens, forts and playhouses – a kind of architectural toy. The project really focused on reinventing, or if you like 'disrupting' the brick to come up with a completely new way to build that wasn't designed (like the brick is) for strength and efficiency but instead for open-ended-ness, creativity and play. The result was this cardboard disc design that instead of tessellating (yes, like a brick) would overlap to create all different types of shapes. It actually went down so well at the Design Museum that I am currently working on its commercial manufacture and hope to launch the product early in 2017.

It may sound completely different from the rest of my background – studying architecture, a bit of furniture making – but noook is really a game on this core theme that interests me; the role of making in design. This is actually the straightforward but profound thing about construction toys – they are games thatinvite you to be creative and importantly make things with your hands and that is basically what being a designer is about. With noook I was trying to invent a way of making that was specifically designed for this type of play.

Do you ever make one-offs or short batch runs of furniture for sale?

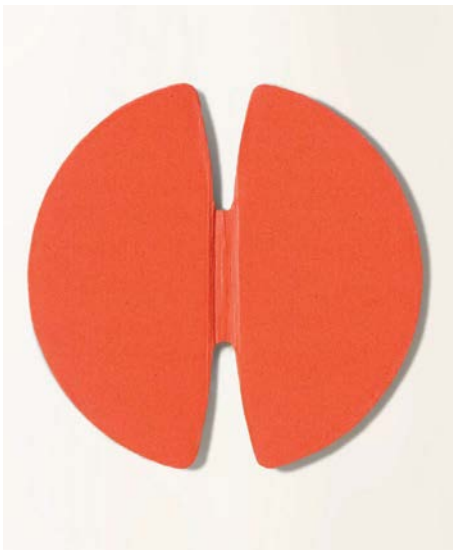
I mainly make prototypes and one-offs to explore and demonstrate my designs and I am very happy to sell these but I also sometimes produce work on request.

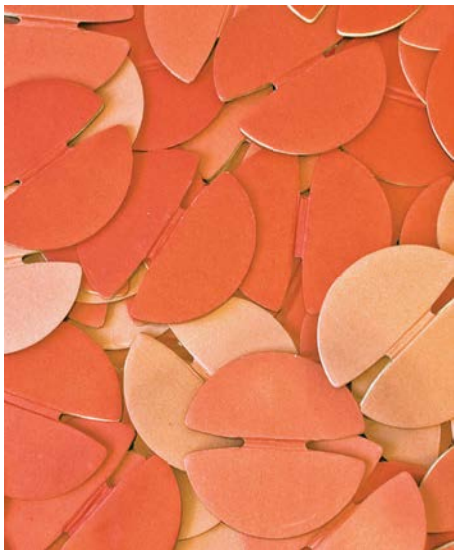
What was your first piece of design that made its way into commercial production?

My first commercial piece was actually my GCSE design project, 'the doughnut', a toy designed for autistic children, which was briefly made by a specialist toy company, but I don't think they actually sold many!

Can you tell us about some of the influences and inspirations behind your furniture?

Of course a big influence behind my work is this idea of 'tectonics' – the idea of using materials and construction as a key driver in a design's expression – and a lot of my inspiration comes from architecture but I also recurrently come back to influences like Borge Mogensen, the Shaker movement, Jasper Morrison and the minimalist work of designers like Gerrit Rietveld, Donald Judd and Phiip Manzer.





The noook construction toy was made during Torsten's time as a Designer in Residence at the Design Museum

The Homage chair was influenced by Italian designer Enzo Mari. What is it about his work that appeals to you?

The Homage chair came out of a design exercise which I titled The Sesame Seed Project, an open source DIY project inspired by Enzo Mari's *autoprogettazione*. *autoprogettazione* was a manual Mari produced to teach people about design, to help them break down what good design might be. He did this by inviting them to make their own furniture. The idea being that if you were put in the role of the maker you would very intuitively start to understand why a design was a certain way, why for instance you might brace the legs on a table or construct a table top in a certain way. Normally most people (and designers like me) are completely separated from this insight because we are removed from the making because we aren't skilled enough to take part. This was what was so clever about Mari's use of DIY. By getting rid of the need of craft skill and showing how you could make furniture with just standard timber, a saw, a nail and hammer, any one can partake in making and learn from the process.

As a designer without much making skill I was really interested in using this DIY making process to learn and so I started the Sesame Seed project to see what I could come up with under Mari's tight DIY constraints. Now in a digital age I thought publishing it online would be what Mari would do if he invented today. It was really just an exercise and not a suggestion that we should all have DIY furniture or that craft skill has no place. But out of it came something like the Homage chair – a chair based around a simple but unusual frame which is both strong and ergonomic without any complicated joints. A structure I would probably not have invented if I wasn't working and prototyping with the wood and saw in hand in the way that you can work with DIY tools. The clever thing about this exercise is that it focuses your mind on the simple question – how do I connect these two things? And this constructional approach to design applies to a lot of my work.

The strong, ergonomic structure of the Homage chair is easily made with simple lap joints. An expression of structure with aesthetic effect

Tell us about the inspiration behind the Shaker boxes.

The Shaker boxes are a little bit different to the other pieces of work I have mentioned here. Most of my furniture starts off with a material and asks the question, how would I join these elements to make a chair, table, etc.? Instead the boxes started off with the archetype of the 'classic Shaker Boxes' and asked, how might you make this type of box differently, more simply, with modern materials? It was a 'type based' approach to design.

The idea behind the design was to simplify the expression of the design by simplifying the making of the box. Traditionally Shaker boxes are made by first steaming a thin board of wood around a mould and then cutting a bottom to fit this piece. It's a process that requires quite a number of steps and skills and leaves a lot of room for the material to move, which again increases the complexity. My idea was to replace the steamed wood with a long sheet of veneer that would be glued and wrapped around a pre-cut base, using this element as a mould. After the glue sets it just requires some sanding and is then finished with just another piece of wood as a lid. A design process that starts off with a 'recognisable type' and tries to simplify and refine its expression by simplifying and refining its making.

How did it feel to be chosen as 'One to Watch' by the Design Council'?

Given that the Design Council was looking at young designers from all over the country it was a real honour to be featured by them. Particularly given some of the names on the list are starting to be pretty established and accomplished already.

To see more of Torsten's work, visit: www.torstensherwood.com

The Shakers made the oval box their own, refining and reducing the prototype into this well known vernacular craft classic. Within this context Torsten decided to refine and reduce the design once again to create a really simple elliptical box

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Deconstructing the Island Table

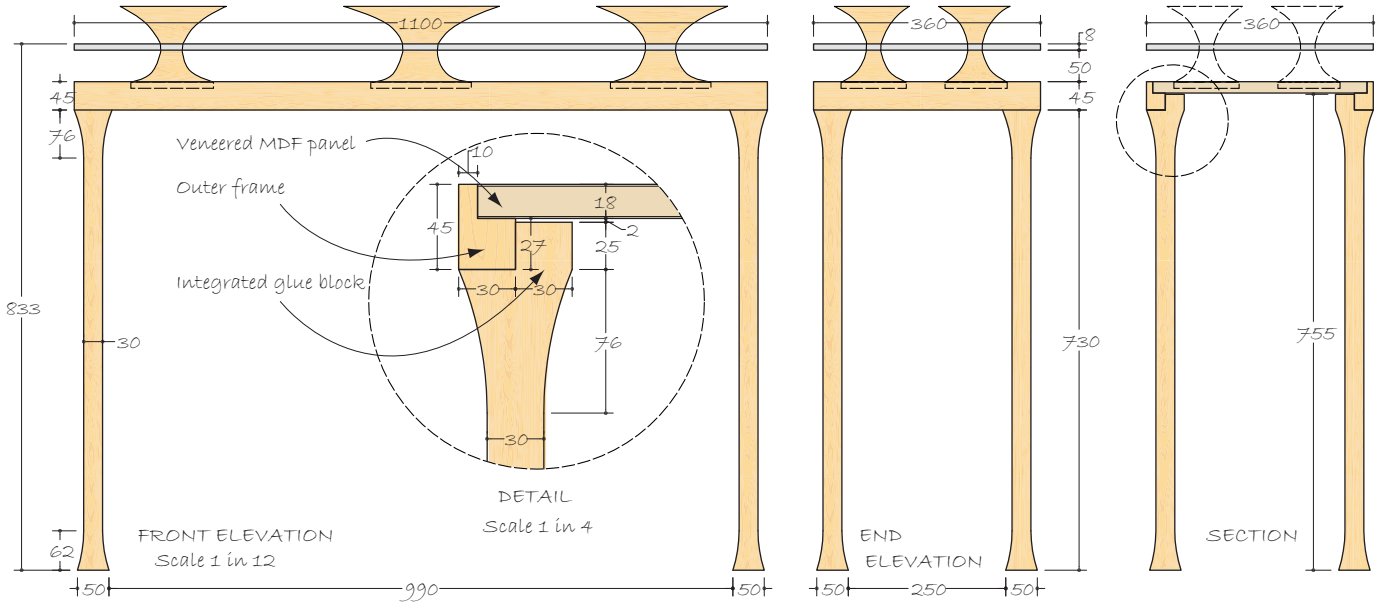
Dave Rigler explains how he made the Island Table, a stunning piece inspired by a seaside landscape

PHOTOGRAPHS BY DAVE RIGLER

The design of this table is very personal to me, evoked from my observations and enduring memories of the natural sweeping overhangs created by the constant erosion of the sea on a group of islands off the coast of Kenya.

The glass of the table represents the sea and the wood surface the seabed. This is a departure from the 'form follows function' philosophy that I generally work to; in this case it was definitely the other way round as the function has taken second place to the form!

I chose to use cherry (*Prunus* spp.) for this project because of its interesting figuring.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Veneered MDF panel
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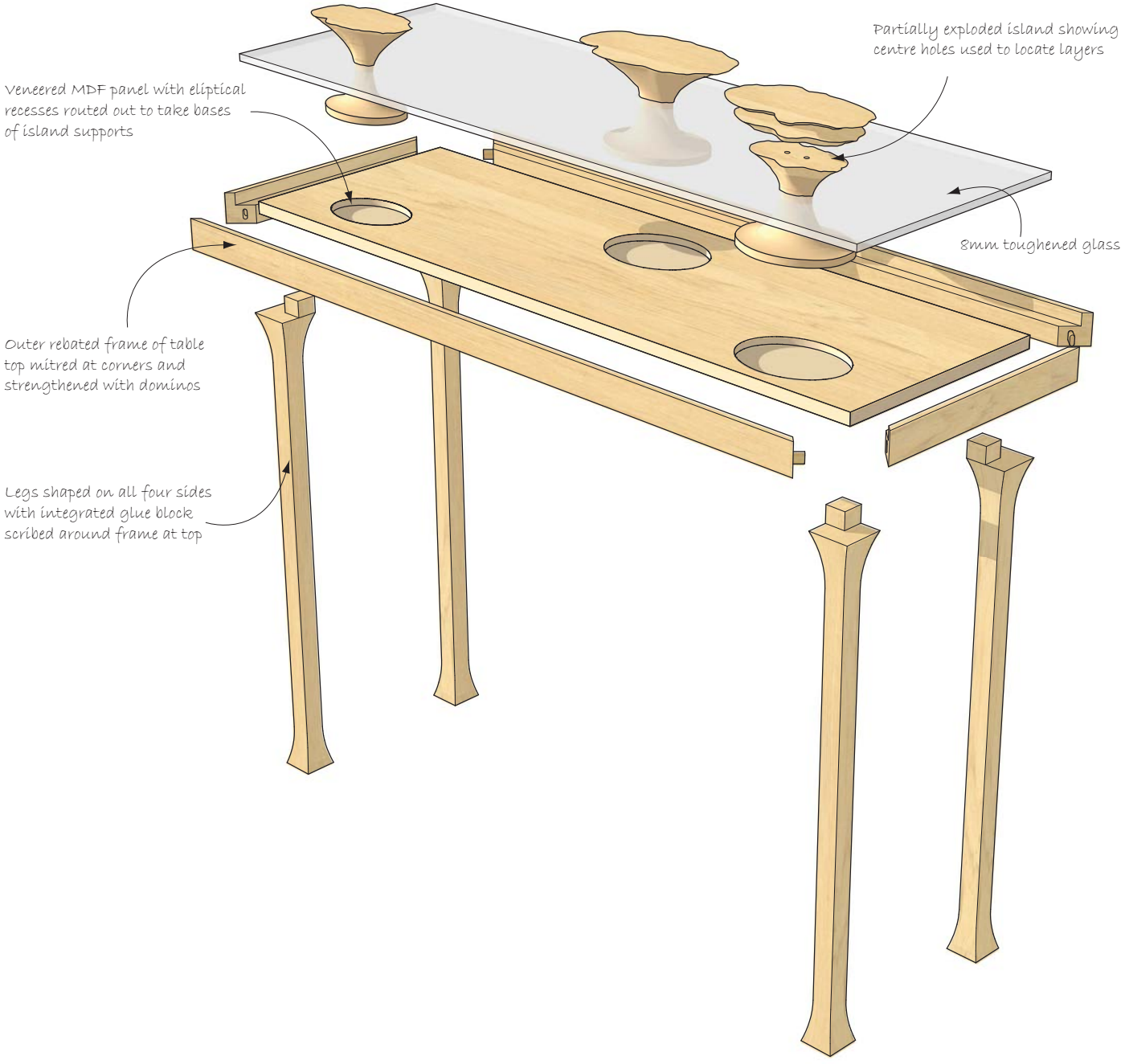

Partially exploded island showing centre holes used to locate layers
Veneered MDF panel with eliptical recesses routed out to take bases of island supports
8mm toughened glass
Outer rebated frame of table top mitred at corners and strengthened with dominos
Legs shaped on all four sides with integrated glue block scribed around frame at top

Construction

The basic construction of the table was relatively simple and conventional. The challenges for me lay in how to produce the islands, incorporate them into the table top relatively seamlessly and have the glass appear to surround them.

Planting islands straight onto the top of the table would require the production of very fragile feather edges, which would also be difficult to glue down and the subsequent finishing with scrapers and abrasive would be likely to adversely affect the surrounding areas. The solution I adopted was to make the base of the islands plug into recesses in the surface and carry out the majority of the blending on the base before assembly. The trick is to produce bases that are a piston fit into the recesses.

The tools and template used to create the hole and insert for the islands

Island to table top interface

To achieve the tight island to table top interface needed, I used a router and template approach. The shape of the islands dictated that an ellipse rather than a circle would be best and fortunately I had some Trend templates that suited. The photo above right shows the tool set I used. Note that I created an MDF template from the Trend plastic one to give better support to the router and plenty of facility to clamp it to the workpieces.

Basically, if you select the right combination of sizes of cutter and guide bushes you get a nice tight fit. In this case the cutter was 6mm. The hole in the table top was cut using a 24mm bush and the cherry insert was cut using a 12mm bush. One refinement I made to the cherry insert was to use a 12mm bowl cutter to rout a 5mm deep recess into it first. This provided a clear and precise line to set the insert level with the table top and created the starting point for the blend into the island form. I also invested in a set of precision UJK brass guide bushes, which were excellent.

One word of caution when cutting the base. As well as firmly clamping the template and the cherry blank securely together, make sure that what will become the base is also securely anchored to prevent it moving when fully cut through and damaging the profile. I did this by screwing it down to the sacrificial MDF surface under the blank in positions that would not be exposed in the later forming process.

This process was carried out after veneering the table top but before adding the frame. Care was taken to ensure the cherry inserts had their grain oriented to match the table top.

Hole for the island being routed out

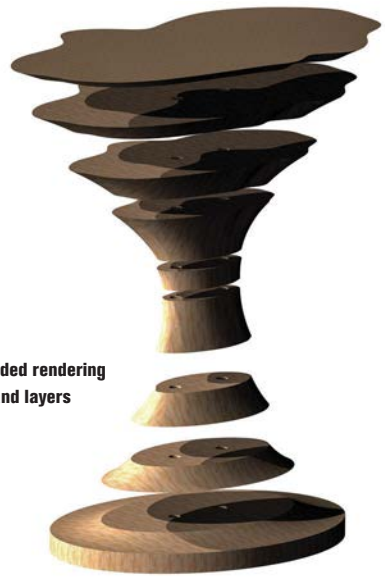
Rebate on the island insert to aid alignment to the table top

Island design and making

An experienced carver would be able to just take a lump of wood and hew a wonderful shape from it, but that ain't me I'm afraid so I resort to some CAD tools to help me out! Humour aside, I do find the ability to visualise from all angles on screen a powerful aid before committing to wood. Very much the equivalent of a physical maquette.

The islands needed to be freeform and organic in appearance but also blend into a geometric oval at the base. To achieve this in 3D CAD I created three 2D profiles, one at the base, one in the centre (glass level) and one at the top. The base shape was simply an oval, smaller than the planned oval table insert size. The centre was another smaller oval. The top was freeform drawn, copying my pencil sketch ideas, using a 'Spline' tool that smoothed the curves. I then used a 'Lofting' tool to generate a 3D solid that sweeps through and blends between these three elements. Using this method I was able to quickly adjust the 2D profile shapes and sizes until I was satisfied with the overall 3D form. Finally, a 'Fillet' tool was used to blend the 3D island into the horizontal insert. In all, I created three islands of different sizes.

To physically make these islands I used a bread-and-butter approach. This would give me a series of profiles to carve to, helping me maintain the form developed in CAD. I sliced the islands horizontally to create nine sections. The depth of each section was determined by the rate of curvature of the profile, i.e. 5mm at the top, 25mm at the centre. Finally I added two holes passing through the islands vertically to act as reference/assembly holes.



CAD exploded rendering of the island layers

It was then easy to plot each of these sections on paper and use them for templates.

Various blanks of cherry were thicknessed to the sizes required, templates glued in place and bandsawn to the profile.

Before committing to the cherry I made a trial run using some scrap softwood. From this I learned two things. First, I needed to make the islands in two halves initially, as this gave better access for the chisels to do the rough shaping. Second, to achieve a tight glue line all round it was best to glue up one layer at a time to achieve adequate clamping.

The two reference holes were used to align the cherry sections during gluing and once this was done the fun could start. The tools I used to get to rough shape were chisels, a gouge, rasp and a riffler.

After the bulk of the waste material had been removed and a rough form established, the two halves were joined together so that the final form could be created as a smooth sweeping shape from top to bottom.

This final forming of the shape was carried out predominantly with rasp, riffler, abrasive papers and a Kirjes sanding drum, which was particularly effective. With 80 grit it could remove material very quickly, so care was needed. The transformation from start to finished form can be seen in the 'before and after' photo below.

The final operation on the islands at this stage was to bore back down and clean out the reference holes with a 6mm drill to just beyond the sea line. These holes will provide the alignment and fixing of the islands through the glass on assembly.

Templates on the cherry blanks ready for bandsawing

Island halves being carved to rough shape

Before and after view of an island

The table top

The table top was constructed from a rebated frame surrounding a veneered 18mm MDF panel. Although there are some good ready veneered boards available, I chose to cut my own veneers for two reasons. First, I wanted to be able to be more selective over choice of pattern for the table top. That is, I was looking for something that was more heavily figured and representative of a seabed. Second, I was concerned that the thickness of manufactured veneers (0.4–0.6mm) might be vulnerable to breakthrough during final finishing of the island to top interface.

Initial planing of a few planks of cherry revealed one with lovely figuring so I used this for the face veneers. I bandsawed them at approximately 2.5mm and to longer than the full table length. I used two consecutive ones for the surface, laid side by side but one reversed, to achieve the best balance and appearance. Two further veneers were cut from a less attractive board for the underside.

These veneers were then bonded to the MDF using an Airpress Vacuum bag. The finished board was finally sized ready for assembly to the frame.

The frame construction was straightforward, the prepared lengths rebated on the spindle moulder and then mitred. Some time was spent hand planing to achieve exact size to the veneered board. Each corner was reinforced with a Domino and the whole glued up.

Bandsawing the veneers for the table top

Vacuum pressing the veneers to the MDF substrate

Assembling the table top frame and veneered panel

Assembling the islands in the top

Incorporating the islands into the top was probably the most worrying part of the project but in the end it actually proved fairly straightforward. To constrain the islands in the table while gluing I placed the top on a flat, even surface of MDF and positioned individual thicknessed timber blocks under each island such that they were flush with the surface. As a further alignment aid, a sheet of MDF was placed over the top of the islands to ensure they remained horizontal and level with each other.

Once the glue was completely set it was time to part the islands at the lower level of the glass line. To ensure that the parting lines and surfaces were absolutely level with each other and parallel to the table surface, the same setup and fence as used for cutting the veneers on the bandsaw was used again, with the exception that I changed to a finer blade. With the fence reset, each top piece was then cut again to remove the equivalent of the glass thickness. The cut surfaces were lightly cleaned up with a low angle block plane.

With the island tops removed the blending of the islands to the table top could be more easily carried out using scrapers and abrasives only. Final sanding of the whole assembly was also completed down to 400 grit. The island tops were also finish sanded at this stage.

Assembling the islands to the table top

Parting the island tops at glass level

Finishing the interface of an island to table top with a curved scraper

Finish sanding an island top with Kirjes sanding drum

The glass template

The interface between the islands and the glass surface is relatively small requiring good accuracy in setting out their position on a template for the glass supplier. This was achieved by creating angle pieces in MDF for each corner that located the rectangular template in the correct position relative to the top. With the table top inverted a drill could be passed down the reference holes and through the template.

Note: The glass I specified was 8mm toughened. The minimum hole size at this thickness is 8mm. From my experience with this table I would aim for at least 5mm between the edge of hole in the glass and wood edge to avoid visible intrusion.

Drilling the glass template through the island reference holes

Legs

The table legs are simple in shape and designed to be sympathetic with the 'waisting' of the islands, the feet dimensions being less than at the interface to the table.

As the form of the leg was the same on all four sides a template approach was adopted. First a temporary MDF template was made from three parts biscuited together. The ends were produced by routing a circular segment, which was then parted in the centre and sides squared. Theses ends were then joined to a nice straight centre section. A plywood template, formed on two sides, was then made from the MDF template.

The leg blanks were produced at the maximum section required of 60mm by laminating two 30mm strips together. Ample material was left at both ends to facilitate clamping and handling. The template was then attached by screws to the leg blanks, in waste material areas, and the leg bandsawn to rough shape. The leg was then finished to size on the spindle moulder.

I took some time over deciding on how best to construct the interface to the table top, eventually settling on a fully glued joint based around an integrated glue block. The top of each leg was trimmed to length and scribed against the frame to give the shoulder line for the joint. The leg joints were hand cut, using tenon saws, chisels and shoulder plane and tuned to achieve a precise fit to the frame.

The majority of the finish sanding was carried out before finally parting the lower leg to length as this made it easier to hold the component.

A somewhat elaborate clamping set up was concocted to ensure the legs were glued perpendicularly to the top and pressure exerted in all directions of the joint.

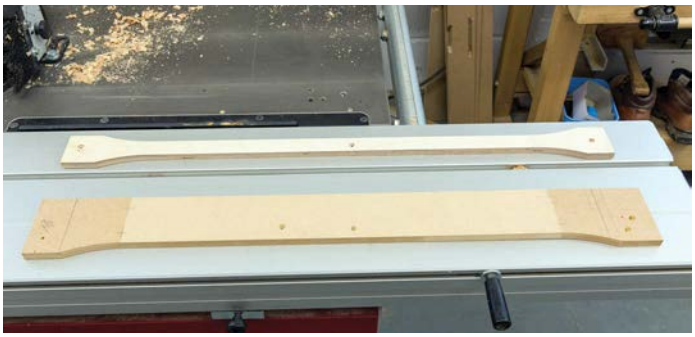


Table leg templates

Bandsawing the table legs to rough profile

Spindle moulding the table legs to finished profile

Scribing the top of the leg to the table frame

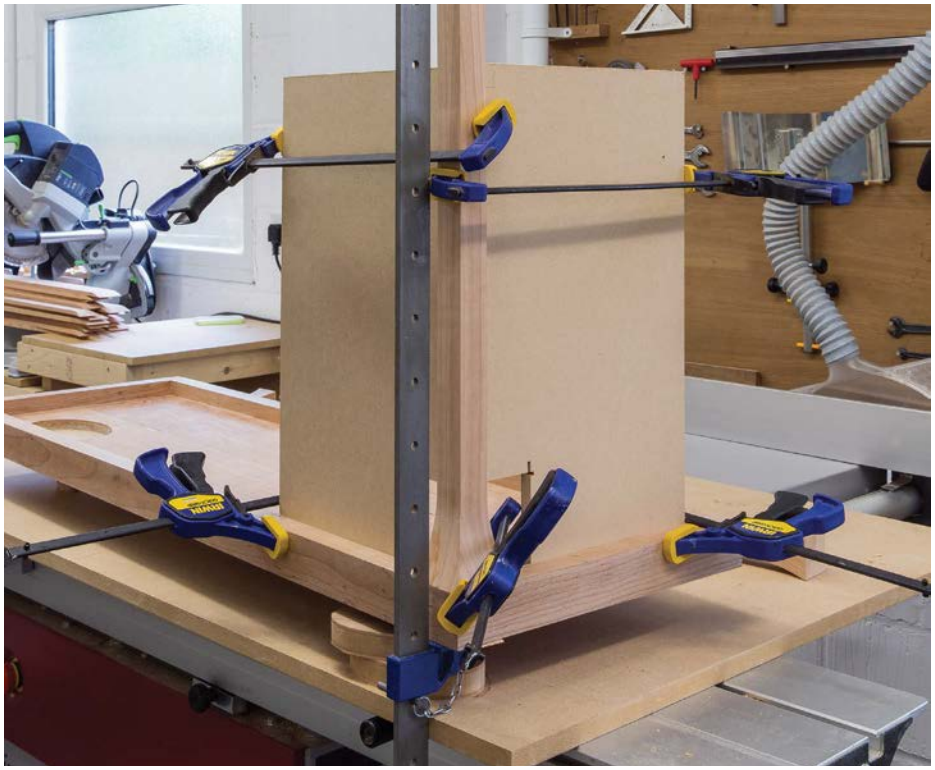
Finished leg joint ready for glueing up

Finishing and assembly

A final inspection and finish sanding of the table parts was made and six coats of Libron Finishing Oil applied to the cherry with a gentle rub down between coats.

The glass was then positioned in place and the island tops secured with one dowel and one 100mm screw passing up from under the table.

Overall I am very pleased with the result and am glad that I decided to proceed with the project. Nothing ventured, nothing gained as they say!



Clamping arrangement for a table leg to ensure perpendicularity

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Popular Woodworking in America 2016

Anne Briggs Bohnett tells us what we missed at WIA 2016 and explains why woodworking conferences are worth attending

Woodworking in America has become one of my favourite annual traditions. It is a whirlwind weekend full of cool tools, inspirational and informative talks, and quality times with friends – both old and new. The 2016 event was held in Covington, Kentucky from 16–17 September.

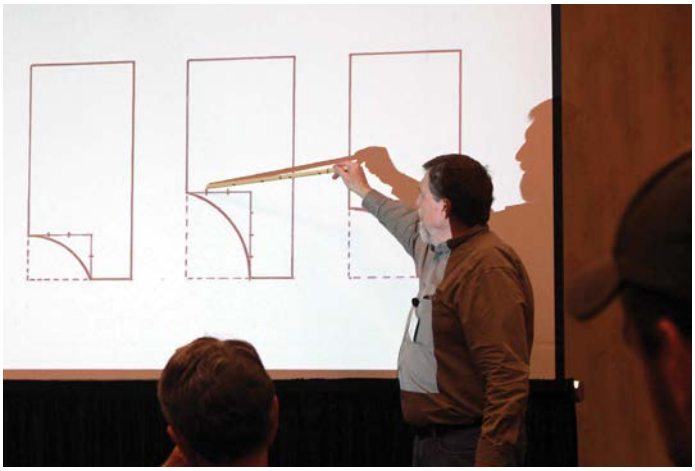
PHOTOGRAPHS BY MEGAN BRAITLEY

Crowds in the Marketplace

A perfect conference

The doors to the Northern Kentucky Convention Center opened at 10am on Friday, signalling the official start of Woodworking in America 2016. All weekend long the marketplace was a buzz of excitement from woodworkers young and old. Woodworkers came and went in waves from the Marketplace as shop talks and classes went on throughout the conference centre. Brews and Browse, a happy hour event in the Marketplace on Friday night combined almost every one of my favourite things into one glorious evening. Good beer? Check. Free cheesy snacks delivered on beautiful trays by friendly waitstaff? Check. Woodworking? Check. Great friends and better conversation? Check and check. And finally, tool shopping? Needless to say I was already in heaven, and it was only the first day of the conference.

Yoav Liberman's talk on 'Knock Down Furniture'



George Walker's presentation on 'Designing with Curves'

The class roster at WIA16 was chock full of big names in the woodworking industry; Roy Underhill was, as usual, his larger than life character, sharing knowledge and lots of laughs everywhere he went. George Walker, Yoav Liberman, Matt Cremona and Mary May were just a few other woodworking 'celebrities' who shared their time and talent with attentive audiences. All weekend long, the Handtool Olympics, brought to WIA by Mike Siemsen's School of Woodworking, pitted beginner to expert hand tool woodworkers against one another providing plenty of entertainment, some healthy competition and, to a few lucky winners, some fancy new tools donated by Bad Axe Toolworks, Knew Concepts and Lee Valley.

It is a serious financial undertaking for any Joe Woodworker to make the trek to a conference like WIA, Handworks or the European Woodworking Show, especially if he/she wants to leave with an armload of heirloom quality tools. For someone who is eager to become truly serious about their pursuit of the woodworking craft, however, I would strongly encourage it for three reasons: the social aspect, the expert advice available and the long-term financial savings resulting from access to said expert advice.

CRUCIBLE TOOL

The first highlight of my trip to Kentucky was the 'unofficial start of WIA 16', the Crucible Tool launch event on Thursday evening hosted at the Lost Art Press headquarters in Covington. It was a veritable who's who of the woodworking world, a room full of many familiar faces and some new ones too. The beer flowed freely as Chris Schwarz and his cohorts John Hoffman and Raney Nelson introduced Crucible Tool's first two tools: the 1in holdfast made from ductile iron and their 6in friction hold dividers. For more information about the tools, see: crucibletool.com

Chris Schwarz marking a Crucible Tool holdfast

A focused shopper testing tools at the Lie-Nielsen Toolworks booth

Lots of treasure to search through at Patrick Leach's Superior Toolworks Booth

On the social side of things, the last few generations of woodworkers have seemed to get fairly comfortable working alone in their shops, leaning on their own research and practice for growth and development in the craft. With the increasing popularity of blogging, information about tools, techniques and the common problems faced by woodworkers has become far more widely available. Online communities such as Sawmill Creek, Lumberjocks and social media sites like Instagram, YouTube and Facebook have made it far easier to digitally connect with other individuals and share projects and knowledge with those with similar interests.

There were plenty of tools to test

An interesting dynamic I've seen develop in the rise of the digital age and the freer sharing of information is the temptation to over-diversify one's skillset, collecting 'head knowledge' so quickly that practice can't possibly keep up. Traditional craftsmen spent their entire lives learning a single trade, be it chair making, lathe work, coopering, spoon craft, the construction of fine furniture or furniture of necessity… today, I get the impression people are afraid to call themselves true 'woodworkers' until they can hand cut joinery with machine-like precision, have built a Windsor chair or two, can turn a gorgeous yet useful live edge bowl, fashion a spoon with an axe and knife and hand carve the plaque for the door of their shop.

These conferences provide a wake-up call of sorts for those with what I like to call 'woodworking ADD'. One thing that really struck me during this trip to WIA was the unbelievable collection of woodworking knowledge that was under one roof during the conference. At events like these, woodworkers can attend classes taught by experts with years of experience perfecting their area of the craft and gain in-person, up-close exposure to a few of their 'dream' projects or styles, as well as get a chance to weed out a few others they will likely never be able to devote the time, focus and attention that aspect of craft deserves.

Practice makes perfect

And that last bit ties in to my claim of long-term financial savings. With less pressure to tackle every single skill set in the woodworking craft, you're going to need a much smaller toolkit. With fewer tools to buy, you'll be able to spend more on the few tools you do actually need. There are countless lists online claiming to be the essential woodworking toolkit. I myself have fallen prey to many of those lists, and much of my early woodworking budget was drained needlessly with tools that: A. I did not need, B. I wasn't ready to use and/or C. were cheaply made and didn't work properly. I was too inexperienced to know where I could afford to scrimp and where I couldn't. I also didn't know what to look for in a truly quality tool.

Thomas Lie-Nielsen says the most important thing a maker can do, especially when the item has a high value, is get their product into a user's hands. There are countless cheap copies of the essential tools available in both the new and used market. Since few boutique tool and furniture makers today have storefronts or distribution deals with national retailers, the real value for your average Joe Woodworker in attending an event like WIA is being able to get your hands on quality tools and talk to experts about said tools before handing over your hard-earned cash. In my experience, woodworkers are pretty honest folk. In talking with various vendors, I've never felt pressured to buy things I didn't need. In fact, I was pretty surprised when several tool makers talked me out of certain purchases in favour of things they knew would be better suited to my way of work.

A woodworker only needs about 10 tools to get started. Even if one were to buy top of the line, heirloom quality tools, starting with those 10, he'd be hard pressed to spend more than $500. That's what I spent on my Big Box Store tablesaw that is now buried under a pile of various farm projects that have been accumulating for over six months. Practising using those 10 hand tools to gain skill and knowledge on a few basic personal projects will help you know what tools you need to buy next, because the tool lists and the order in which they are purchased is different for every single woodworker. And not enough can be said about the importance of actually using the tools on your list prior to buying them.

Thomas Lie-Nielsen admiring Marco Terenzi's perfect ¼ scale replica of the LN No 62. Low Angle Jack Plane

FUTURE EVENTS

WIA 2017 promises to be another fantastic event for both hand and power tool users. For more information, visit: www.woodworkinginamerica.com

If you're more interested in the hand tool side of things, Handworks in Amana, Iowa will be held 19–20 May, 2017, and I hope to see you there. For more information, visit: www.handworks.co

The next European Woodworking Show will take place 16–17 September, 2017 in Cressing Temple Barns, Essex, UK. For more information, visit: www.europeanwoodworkingshow.eu

Machine Mart

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WHERE QUALITY COSTS LESS

Clarke TABLE SAWS

FROM ONLY £69.98 EX.VAT £83.98 INC.VAT

LEG STAND KITS FOR CTS10D AND CTS11 ONLY £27.59 INC VAT

INCLUDES LEFT & RIGHT TABLE EXTENSION

CTS10D

MODEL	MOTOR	BLADE	EXC.VAT	INC.VAT
CTS800B	600W	200mm	£69.98	£83.98
CTS11	1500W	254mm	£149.98	£179.98
CTS10D	1500W	254mm	£169.98	£203.98

Clarke 4" BELT/ 6" DISC SANDER

- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
- 225mm x 160mm table, tilts 0-90°
- 370W, 230V motor

CS4-6D

£92.99 EX.VAT £111.59 INC.VAT

Clarke 6" BELT/ 9" DISC SANDER

- Includes stand
- 1 HP/ 230V/ 1ph motor

CS6-9C

£229.00 EX.VAT £274.80 INC.VAT

Clarke TABLE SAW WITH EXTENSION TABLES (250mm)

CTS14

- Ideal for cross cutting, ripping, angle and mitre cutting
- Easy release/locking mechanism for table extensions
- 0-45° tilting blade
- Cutting depth: 72mm at 90° / 65mm at 45°

£129.98 EX.VAT £155.98 INC.VAT

SHOWN WITH OPTIONAL LEG KIT CLK5 £19.98 EXC.VAT £23.98 INC.VAT

Evolution FURY5-S TABLE SAW NEW

- 1500W motor
- 0-60° mitre gauge
- Cutting depth: Steel 3mm, Wood 85mm at 90° or 58mm at 45°

£149.98 EX.VAT £179.98 INC.VAT

3 YEAR WARRANTY

Clarke WOODWORKING VICES

STANLEY Record

FROM ONLY £13.99 EX.VAT £16.79 INC.VAT

WV7

MODEL	MOUNTING	JAW (WIDTH/OPENING /DEPTH)mm	EXC.VAT	INC.VAT
Clarke CHT152	Bolted	150/152/61	£13.99	£16.79
Stanley Multi Angle	Clamped	72/60/40	£16.99	£20.39
Record TV75B	Clamped	75/50/32	£19.98	£23.98
Clarke WV7	Bolted	180/205/78	£26.99	£32.39

Clarke QUALITY CAST IRON STOVES

OVER 23 QUALITY STYLES ON DISPLAY

NEW

POT BELLY £99.98 EX.VAT £119.98 INC.VAT

8kW

6.9kW

BARREL II £219.00 EX.VAT £262.80 INC.VAT

6kW

LARGE & XL MODELS IN STOCK

FLUES, COWLS & ACCESSORIES IN STOCK

£199.00 EX.VAT £238.80 INC.VAT

BUCKINGHAM

Clarke 1" BELT/ 5" DISC SANDER

- Includes 2 tables that tilt & lock
- Quality Induction 300W motor

£69.98 EX.VAT £83.98 INC.VAT

CBS1-5

Clarke CROS3 450W RANDOM ORBITAL SANDER NEW

£29.98 EX.VAT £35.98 INC.VAT

- Adjustable front handle improves control
- 7000-14000rpm

INC DUST BAG AND SELECTION OF 125MM DIAMETER SANDING DISCS

Clarke DUST EXTRACTOR/ CHIP COLLECTORS

FROM ONLY £139.98 EX.VAT £167.98 INC.VAT

METABO ALSO AVAILABLE

- Powerful 750W motor
- 56 litre bag capacity
- Flow rate of 850M3/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CDE35B	750W	450 M3/h	56Ltrs	£139.98	£167.98
CDE7B	750W	850 M3/h	114Ltrs	£149.98	£179.98

Clarke DRILL BIT SHARPENER

CBS16

- Great for 3mm to 10mm HSS drill bits
- 70W motor
- Drill bit guide ensures sharpening at the correct angle
- Saves cost of new drills

£21.99 EX.VAT £26.39 INC.VAT

VIDEO ON-LINE

Clarke CORDLESS DRILL/ DRIVERS

BOSCH Power Tools

Clarke CONTRACTOR

CON18Li

powered by Li-Ion

FROM ONLY £39.98 EX.VAT £47.98 INC.VAT

PSR18

MODEL	VOLTS	BATTS	EXC. VAT	INC.VAT
CCD180	18V	1	£39.98	£47.98
CCD240	24V	1	£47.99	£57.59
Bosch PSR18	18V	1	£54.99	£65.99
CON18Ni	18V	2 x Ni-Cd	£69.98	£83.98
CON18Li	18V	2 x Li-Ion	£89.98	£107.98

Clarke TURBO AIR COMPRESSORS

airmaster

FROM ONLY £84.99 EX.VAT £101.99 INC.VAT

- Superb range ideal for DIY, hobby & semi -professional use
- 'V' Twin Pump

8/250

MODEL	MOTOR	CFM	TANK	EXC.VAT	INC.VAT
8/250	2HP	7.5	24ltr	£84.99	£101.99
7/250	2 HP	7	24ltr	£94.99	£113.99
11/250	2.5HP	9.5	24ltr	£109.98	£131.98
8/510	2HP	7.5	50ltr	£119.98	£143.98
11/510	2.5HP	9.5	50ltr	£139.98	£167.98
16/510*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke 4" BELT/ 8" DISC SANDER

- Includes two tables
- 550W 230V motor

£154.99 EX.VAT £185.99 INC.VAT

CS4-8

Clarke POWER PLANERS

CEP1

BLACK & DECKER

- 82mm cutting width

FROM ONLY £26.99 EX.VAT £32.39 INC.VAT

was £69.59 inc.VAT

MODEL	MOTOR	DEPTH OF CUT	EXC.VAT	INC.VAT
Clarke CEP1	650W	2mm	£26.99	£32.39
Einhell TE-PL850	850W	3mm	£49.98	£59.98
B&D KW750K - GB	750W#	2mm	£54.99	£65.99

VAC KING WET & DRY VACUUM CLEANERS

- Compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.

FROM ONLY £49.98 EX.VAT £59.98 INC.VAT

* SS = Stainless Steel

MODEL	MOTOR	CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£62.99	£75.59
CVAC25SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR*	1400W	24/21ltr	£97.99	£117.59

Clarke STAPLE/ NAIL GUNS

- All models include nail/staple pack and tough moulded case

LITHIUM-ION

CONSN18LiB

FROM ONLY £21.99 EX.VAT £26.39 INC.VAT

NEW

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

MODEL	TYPE	STAPLE/NAIL GAUGE	EXC. VAT	INC. VAT
CESNG1	Electric	22/18	£21.99	£26.39
CCT48	Cordless 4.8V Ni-MH	22/18	£28.99	£34.79
CESNG2	Electric	18/18	£39.98	£47.98
CONSN18LiB	Cordless 18V Lithium-Ion	18/18	£114.99	£137.99

NEW

Clarke ROTARY TOOL KIT

CRT40

£29.98 EX.VAT £35.98 INC.VAT

Kit includes:

- Height adjustable stand with clamp
- Rotary tool
- 1m flexible drive
- 40x accessories/consumables

Clarke DISC SANDER (305MM)

£129.98 EX.VAT £155.98 INC.VAT

- Powerful, bench mounted disc sander
- 900W
- No load disc speed: 1490rpm
- 305mm Disc Dia. (1 x 60 grit sanding disc included)
- Dust extraction port

CDS300B

Clarke SHEET SANDERS

- Ergonomic design for optimum comfort

CON300

FROM ONLY £16.99 EX.VAT £20.39 INC.VAT

MODEL	SHEET SIZE	MOTOR	EXC.VAT	INC.VAT
COS200	190X90mm	150W	£16.99	£20.39
CON300	230X115mm	330W	£34.99	£41.99

Clarke CLAMPS

FROM ONLY £3.99 EX.VAT £4.79 INC.VAT

HUGE CHOICE OF SASH, SPRING, SCREW, SPREADER AND G-CLAMPS

UP TO 1800mm CAPACITY

Clarke CIRCULAR SAWS

- Great range of DIY and professional saws
- Ideal for bevel cutting (0-45°)

CON185

FROM ONLY £39.98 EX.VAT £47.98 INC.VAT

*Includes laser guide

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC.VAT	INC.VAT
CCS185B	1200W	65/44	£39.98	£47.98
CON185*	1600W	60/40	£59.98	£71.98
CCS2	1300W	60/45	£59.98	£71.98

Clarke PORTABLE THICKNESSER

- Max thickness cap. 125mm and 250mm wide
- Planing depths adjustable from 0-2.5mm
- Powerful 1250W motor
- 8000rpm no-load speed

£209.98 EX.VAT £251.98 INC.VAT

CPT250

Clarke STATIC PHASE CONVERTERS

- Run big 3 phase woodworking machines from 1 phase supply
- Variable output power to match HP of motor to be run

ROTARY PHASE CONVERTERS ALSO IN STOCK

PC60

FROM ONLY £229.00 EX.VAT £274.80 INC.VAT

CONVERT 230V 1PH TO 400V 3PH

MODEL	MAX. MOTOR HP	FUSE	EXC.VAT	INC.VAT
PC20	2HP	10Amps	£229.00	£274.80
PC40	3.5HP	20Amps	£269.00	£322.80
PC60	5.5HP	32Amps	£319.00	£382.80

Clarke HARDWOOD WORKBENCH

- Includes bench dogs and guide holes for variable work positioning
- 2 Heavy Duty Vices
- Large storage draw
- Sunken tool trough
- LxWxH 1520x620x855mm

CHB1500

£139.98 EX.VAT £167.98 INC.VAT

Clarke CONTRACTOR BELT SANDERS

Makita

- Ideal for surface removal, sanding and finishing

ABRASIVE SANDING BELTS IN STOCK

BS1

FROM ONLY £34.99 EX.VAT £41.99 INC.VAT

* was £113.99 inc.VAT

MODEL	MOTOR	M/MIN	EXC.VAT	INC.VAT
Clarke BS1	900W	380	£34.99	£41.99
Clarke CBS2	1200W	480	£76.99	£92.39
Makita 9911*	650W	75-270	£89.98	£107.98

Clarke OSCILLATING BELT & BOBBIN SANDER

- 450W motor
- 2000rpm spindle speed
- 1750rpm belt speed
- Dust collection port
- Inc. sleeves, drum and belt

NEW

ONLY £179.98 EX.VAT £215.98 INC.VAT

COEBS1

*only Bobbin Sander

OTHER MODEL	MOTOR	SPINDLE RPM	EXC. VAT	INC. VAT
COBS1*	450W	2000rpm	£134.99	£161.99

Clarke BOLTLESS SHELVING BENCHES

- Simple fast assembly in minutes using only a hammer

FROM ONLY £29.98 EX.VAT £35.98 INC.VAT

SAVE 10% WHEN YOU BUY ANY MIX OF 4 FROM THIS RANGE SAVE AT LEAST £23.99 INC.VAT

CHOICE OF 5 COLOURS RED, BLUE, GREY, SILVER & GALVANISED STEEL

150 KG PER SHELF (evenly distributed) Strong 9mm fibreboard shelves

350 KG PER SHELF (evenly distributed) Strong 12 mm fibreboard shelves

ALSO EXTRA WIDE INDUSTRIAL UNITS AVAILABLE

MODEL	DIMS WxDxH(mm)	EXC.VAT	INC.VAT
150kg	800x300x1500	£29.98	£35.98
350kg	900x400x1800	£49.98	£59.98

Clarke PLANERS & THICKNESSERS

CPT800

- Ideal for DIY & Hobby use
- Dual purpose, for both finishing & sizing of timber

FROM ONLY £184.99 EX.VAT £221.99 INC.VAT

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£209.98	£251.98
CPT1000	10"	120mm	£289.00	£346.80

25839LH

Clarke 10" (254MM) SLIDING COMPOUND MITRE SAW

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800W motor
- Laser guide
- 78mm max. depth of cut

£139.98 EXC.VAT
£167.98 INC.VAT
CMS10S2

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MITRE SAWS

TC-SM2131

EVOLUTION

FROM ONLY £56.99 EXC.VAT £68.39 INC.VAT

- Quality Range of Mitre saws and blades in stock

MODEL	BLADE DIA/ BORE (mm)	MAX CUT DEPTH/CROSS	EXC. VAT	INC. VAT
Einhell TC-MS 2112	210/30 NEW	55/120mm	£56.99	£68.39
Evolution Fury 3-B	210/25.4	50/120mm	£57.99	£69.59
Einhell TC-SM2131#	210/30	62/310mm	£119.98	£143.98
Einhell SM2534‡	250/30	75/340mm	£159.98	£191.98

Laser Guide ‡ Sliding Compound

Clarke ELECTRIC HEATERS

DEVIL 6003

FROM ONLY £49.98 EXC.VAT £59.98 INC.VAT

DEVIL 7003

MODEL	VOLTAGE	HEAT OUTPUT KW	EXC.VAT	INC.VAT
DEVIL 6003	230V	1.5-3	£49.98	£59.98
DEVIL 7003	230V	3	£59.98	£71.98
DEVIL 6005	400V	2.5-5	£74.99	£89.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£119.00	£142.80
DEVIL 7009	400V	9	£139.98	£167.98
DEVIL 6015	400V	5-10-15	£179.00	£214.80
DEVIL 7015	400V	15	£199.98	£239.98
DEVIL 6025	400V	22	£289.00	£346.80
DEVIL 7025	400V	22	£319.00	£382.80
DEVIL 7030	400V	30	£359.00	£430.80

Clarke TURBO FAN GAS HEATERS

Offering low cost, efficient heating

FROM ONLY £64.99 EXC.VAT £77.99 INC.VAT

PROPANE GAS FIRED

#Dual Volt 110V/230V *stainless steel

MODEL	MAX OUTPUT KW	EXC. VAT	NOW INC.VAT
Little Devil II	10	£64.99	£77.99
Little Devil SSII*	10.3	£84.99	£101.99
Devil 700 NEW	15	£94.99	£113.99
Devil 900 NEW	24.9	£139.98	£167.98
Devil 860SS*#	31	£149.98	£179.98
Devil 1600 NEW	36.6	£169.98	£203.98
Devil 2100 NEW	49.8	£259.00	£310.80

Clarke PROFESSIONAL BANDSAWS

Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table

- Table tilts 45° • Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors
- Includes stand

MAGNIFIED MITRE GUIDE
QUICK RELEASE FENCE
DRIVE-BELT TENSIONING
SOLID GROUND CAST IRON TABLE
CBS300

FROM ONLY £389.00 EXC.VAT £466.80 INC.VAT

MODELS ALSO FEATURE:

MULTI-STEP DUST EXTRACTION OUTLET
FLEXIBLE LED WORKLIGHT
REMOVABLE DUST TRAY
BLADE TENSIONING CONTROL

MODEL	THROAT DEPTH	MAX CUT 90°	MAX CUT 45°	EXC. VAT	INC. VAT
CBS300	305mm/12"	165mm	115mm	£389.00	£466.80
CBS350	340mm/14"	225mm	160mm	£479.00	£574.80

Clarke CDP152B DRILL PRESSES

- Range of precision bench & floor presses for enthusiast, engineering & industrial applications

NEW RANGE

FROM ONLY £66.99 EXC.VAT £80.39 INC.VAT

B = Bench mounted F = Floor standing

MODEL	MOTOR (W) SPEEDS	EXC. VAT	INC. VAT
CDP5EB	350 / 5	£66.99	£80.39
CDP102B	350 / 5	£79.98	£95.98
CDP152B	450 / 12	£134.99	£161.99
CDP202B	450 / 16	£179.98	£215.98
CDP10B	370 / 12	£194.99	£233.99
CDP352F	550 / 16	£219.00	£262.80
CDP502F1100	/ 12	£499.00	£598.80

Clarke MORTISING MACHINE

£169.98 EXC.VAT £203.98 INC.VAT

CBM1B

- Accurately creates deep square recesses • Table size 150 x 340mm • Max. chisel stroke 76mm
- Robust cast iron base & column ensures stability & accuracy
- 95mm depth of cut

CHISELS AVAILABLE FROM £8.39 INC VAT

"..fast and accurate with a good solid feel...Excellent value for money." See www.machinemart.co.uk

Clarke QUARTZ HALOGEN INFRA-RED HEATER

- 3kW instant, clean odour free heat.

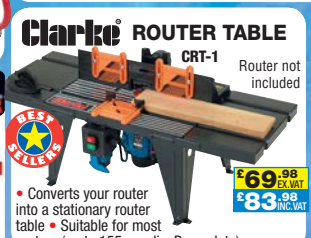
£129.98 EXC.VAT £155.98 INC.VAT

DEVIL 370SP

Clarke ROUTER TABLE

CRT-1

Router not included



- Converts your router into a stationary router table • Suitable for most routers (up to 155mm dia. Base plate)

£69.98 EX.VAT £83.98 INC.VAT

Clarke CPF13 ELECTRIC POWER FILE

- Variable belt speed
- Tilting head

*Black & Decker

FROM ONLY £44.99 EXC.VAT £53.99 INC.VAT

was £71.98 inc.VAT

BELT SIZE MODEL	MOTOR	(mm)	EXC.VAT	INC.VAT
CPF13	400W/230V	13x457	£49.98	£59.98
KA900E*#	350W/230V	13x455	£54.99	£65.99

Clarke CONTRACTOR BOSCH JIGSAWS

CON750

*DIY #Professional

FROM ONLY £14.99 EXC.VAT £17.99 INC.VAT

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC VAT
Clarke CJS380*	420W	55/6mm	£14.99	£17.99
Clarke CON750#	750W	80/10mm	£27.99	£33.59
Bosch PST700E*	500W	70/4mm	£44.99	£53.99

Clarke MULTI FUNCTION TOOL WITH ACCESSORY KIT

- Great for sawing, cutting, sanding, polishing, chiselling & much more • 250W motor
- Variable speed

£39.98 EX.VAT £47.99 INC.VAT

CMFT250

Clarke 13" MINI WOOD LATHE

£149.98 EX.VAT £179.98 INC.VAT

CWL325V

- Ideal for enthusiasts/ hobbyists with small workshops
- 325mm distance between centres • 200mm max. turning capacity (dia) • 0.2HP motor

Clarke MITRESAW STAND

CFMSS1

- Suitable for most sizes/makes of saw
- Inc. outriggers & rollers

ONLY £66.99 EX.VAT £80.39 INC.VAT

FOLDING MITRE SAW STAND IN STOCK – CONMW1 ONLY £131.98 INC VAT

Clarke CONTRACTOR BOSCH ROUTERS

- Powerful heavy duty machines ideal for trade and DIY use

CR2 INCLUDES 15 PIECE KIT WORTH OVER £20

FROM ONLY £44.99 EX.VAT £53.99 INC.VAT

CR1C

*DIY

MODEL	MOTOR (W)	PLUNGE (mm)	EXC.VAT	INC.VAT
CR1C*	1200	0-50	£44.99	£53.99
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PHOTOGRAPHS BY JOHN LLOYD

Cutting freestyle 17th-century dovetails

Soft furnishings for drawers...

John Lloyd tries his hand at making a 17th-century-style cushioned drawer

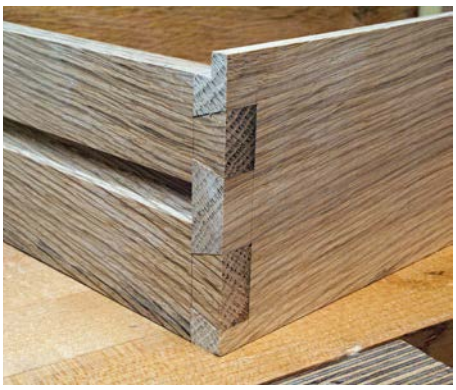
I imagine Oliver Cromwell had a number of things on his list of 'Aims & Objectives' when he got shot of King Charles I to head up 'The Commonwealth of England', but I doubt that one of them was 'to influence 17th-century English furniture design'. At this point you might well have started that nervous tic that you used to have in History lessons, fearing that Mr Plumley might pounce on you at any second demanding the dates for the Battle of Culloden. Well, don't panic, history can be quite relaxing and interesting when the fear of being hit round the ear with a board rubber is removed.

Back to mid-17th-century England, at about this time there was another Charles, son of the recently 'deceased' (executed) one, who decided to nip over to the continent for a while, not for his annual bucket and spade to Brittany, he just thought that not being in England for a while would be very beneficial for his health and general well-being. Having lived in France and the Netherlands for some years, when Charles returned to England to become King Charles II, he brought with him all sorts of exciting design ideas and influences that were all the rage on the continent, and there was a bit of a fire in a London bakery at about this time, so there was also a need for lots of new furniture. One of the fashions that came from the Netherlands was for a rather flamboyant glued and pinned surface decoration, used extensively on chests, spice cupboards and dressers, often as geometric patterns created with strips of moulding on things like drawer fronts.

Drawer design

There are certain key areas that are really useful to get an idea of the date of a piece of antique furniture and one of the key 'clues' is drawer design. Originally known as 'drawing boxes' or 'tills', (oddly a term that's still used for those drawing boxes that keep money safe in shops), drawers probably first appeared as early as the 15th century although they were pretty crude with simple butted and nailed joints, but in the 17th century the furniture industry's R&D departments started to make a bit of headway. Joiners started using dovetails and by the middle of the century a 'chest of drawers', in a form that we recognise today, had developed from the joyned chest, or coffer, with a drawer or two in the base, sometimes known as a 'mule chest'. No, I don't know why it's called a 'mule' chest either. Drawer fronts started off with pretty crude single through dovetails, sometimes nailed, progressed to two tails with a spot of glue, and finally, the lapped version that we recognise today, with several dovetails, became the joint of choice and it's stayed with us for over 300 years.

The rest of the drawer construction didn't really sort itself out properly until the Victorian period, when quadrant drawer slips finally solved the problem of drawer



Through dovetails with alarming 1-in-3 pitch

The back is just a butt joint and cut nails

The two platforms give the cushions their height

bottoms having a constant desire to change size and a consequent tendency to self-destruct. We all know that shrinkage of wood can cause problems, except for furniture restorers where it provides a constant, and welcome, source of work. Shrinkage is a particular problem associated with early drawer bottoms, which generally had the grain running from front to back, with the bottom nailed to the underside of the front, sides and back. Shrinkage either bowed the sides, or split the bottom, or both. Later on, the bottom was turned through 90°, but this didn't really solve the problem, it just changed its orientation.

Glued and pinned mouldings gave way to the rather more restrained decoration of 'cross-bandings' and 'cock beading' that typifies Georgian furniture, although there were occasionally drawer fronts that had fielded edges, looking something like a 'cushion' but much less fussy.

If you've tried cutting dovetails, you'll know that through dovetails are generally the simpler option, but the ends of the tails are visible on the drawer front. These days this might be considered to give a slightly 'contemporary' twist, but in the 17th century the ends of the dovetails were usually hidden with the addition of mouldings to the drawer front.

Cushion drawers

What's a cushion when it's not that item of soft furnishing that apparently has to be heaped artistically, in ever increasing number, on every chair, sofa or bed that you possess? Well, there's something called a 'cushion drawer', this is a shallow drawer, usually with a convex front and with no handles, which sits right at the top of a chest of drawers pretending to be a frieze – it's a bit of a half-hearted attempt at being a 'secret' drawer really. However, the 'cushions' that we're looking at here are angular, decorative, raised sections on drawer fronts, made up of applied chamfered strips and mouldings. This applied decoration, which was also a dovetail concealer, would be a single cushion on a small drawer, but for added excitement, a longer drawer would often be fitted with 'twin cushions'.

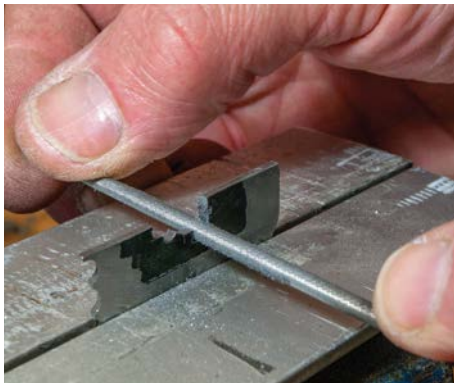
Making a cushioned drawer starts, as with any drawer, with a box. It's just a question of what happens at the corners to hold it all together. Having done a little research and sent a spy to Godinton House in Kent, I was

Mitred chamfered cushions hide the through dovetails

The cushion mouldings are glued and pinned

pretty sure of the construction, although in 25 years as a restorer and maker I had never had occasion to make a drawer quite like this before. The drawer front was going to be covered with mouldings, and one of their functions was to cover up the ends of the dovetails, so through dovetails were all that was required. How many? Just two on a drawer from this period, which is at about the mid-point of dovetailed drawer development. The tails that I came across at Godinton didn't even try to be of an even size and spacing and the pitch equated to an alarming 1:3, miles away from the ever so sophisticated 1:8 that we tend to use these days. The tails just had to be positioned so that they missed the rebate for the bottom and the groove running down the side, drawers from this period were still 'side-hung' on runners.

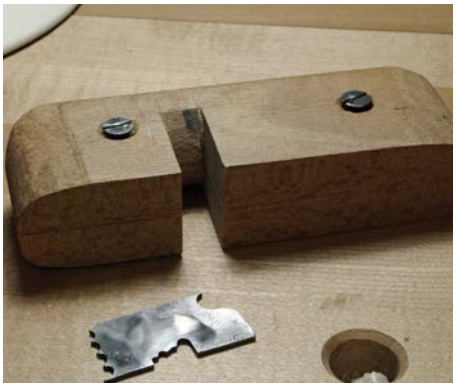
During the cutting of the tails I lost part of one of the corners, it just pinged off right along the line of a medullary ray, which made me wonder why the joiners of the time used such an acute angle. Perhaps they thought it was required for the strength of the joint, but it actually makes the tails themselves rather fragile! To try to get in touch with my inner Carolean joiner, I just marked the position of the tails but, aiming for about 1:3, went freestyle with the actual angle of the cut, not a concept that's completely alien to me because I use 'freestyle' dovetails as a little exercise with my students, and it's actually quite liberating. With the dovetails cut, the jointing of the back couldn't be simpler, just a butt joint (rebates came later), a drop of animal glue and a couple of cut nails. I pre-drilled for the nails to prevent splitting, something that must have been done as oak can be quite brittle.



File the scratch-stock cutter to your chosen profile

Decoration

Now for some decoration. There always seems to be a platform in the centre of a cushion, sometimes it's a sort of pierced fretwork, sometimes veneered and I have come across examples where this little platform is decorated with ink patterns, but for now, mine is just going to be plain, solid oak. Thickness is an important consideration so that the relationship between the platform, the chamfered 'cushions' and the mouldings works. Twin cushions were all the rage on longer drawers, so two 'platforms' were glued on, giving something fixed to assemble the rest of the pieces around. The chamfers of the cushion pieces are at quite a shallow angle, which I just planed by hand. Mitred corners have the usual challenges associated with any mitre joint, helped by the use of a shooting board, which joiners of this period would have had, or a disc sander which they might have just been dreaming about. When reading about this sort of decoration it always seems to be 'glued



Moulding the scratch-stock and finished sharpened cutter

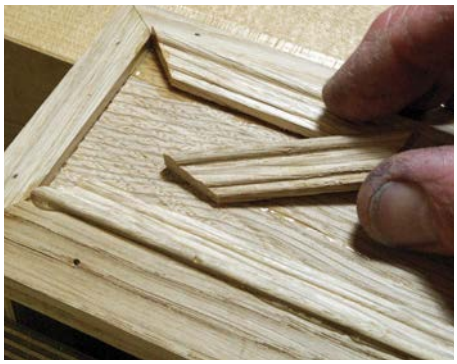
When the pencil disappears you're done

17th-century joiners would have loved to use a disc sander for their mitres

and pinned' so that's what I did, all pretty straightforward because the 'platform' keeps everything lined up.

I love the simplicity of the scratch-stock, usually my tool of choice for letting in line inlay, but equally good at mouldings. The scratch-stock gives complete freedom of design for the moulding, just find a piece of spring steel, perhaps an old saw blade or a cabinet-scraper, scribe your design into some marker pen and saw/file your shape into the steel. Sharpen the cutter by rubbing the two flat faces on a bench stone, up to about 6000 grit. You can also use slip-stones on the filed profile, if you're feeling keen, but this step can usually be skipped on this sort of work. The blade holder, the scratch-stock, can just be the simple L-shaped piece of beech, split down the middle and screwed together to sandwich the blade. But for a narrow moulding I will generally make a blade holder with a slot of the same width as the moulding, with the blade secured in the middle of the slot, the holder straddles the wood and keeps everything straight. You might find that the cutter needs re-sharpening at some point. To keep a consistent shape to the moulding I draw round the cutter and use a piece of double-sided tape to maintain an accurate cutter position while the scratch-stock is

An upside-down offcut of moulding helps if you want to use a clamp



The moulding sits into the rebate created by the platform and the chamfered cushion

dismantled and re-assembled. When cutting the moulding with a scratch-stock, there's no depth stop or bearing to control the cut, so cover the top edge with pencil and stop cutting when the pencil disappears. Now we just need more mitres, glue and pins to fit the moulding around the inside edge of the cushions and the central section between the cushions and the drawer is finished.

The effect of these twin cushions is actually very pleasing, the light catches all of the many facets and changes in level. Perhaps it's an idea that could be brought up to date, although I might combine it with a few more dovetails at a slightly finer pitch for the drawer construction, but actually I quite like the difference in size and shape, perhaps modern furniture making is getting just a little too preoccupied with precision and symmetry.

There are a few obvious, potential shrinkage issues with applying any moulding across the direction of the grain of a drawer front, but at least it'll give furniture restorers of the future a potential source of income. F&C

John Lloyd runs a range of long and short furniture making courses at his workshops in Sussex. For details visit his website: www.johnlloydfinefurniture.co.uk

Twin cushion drawer front

PHOTOGRAPHS BY JOHN BULLAR

The mechanics of joinery – part 2

Douglas Coates completes his series looking at how joints work

This simple knock down joint (below) is deceptive. Provided the mortise is given broad shoulders (along the vertical) these structures do not rack – they are amazingly stiff and strong. They also have adjustment to any movement designed in, and are very quick to dismantle if necessary

In the previous article I discussed the joint as a connector – a component whose job it is to connect two or more structural members together, allowing stress to flow efficiently and completely through the joint and ultimately out of the structure. For this approach to be actually useful in helping us refine how we use and cut joints, we now need to consider the various conditions that will exist inside the joint.

So, we use joints to create spatial structures and in doing so change grain direction – a rail to a stile or stretcher into a leg for example. There are exceptions (a scarf joint) but turning a grain corner is one of the main reasons for joining two components. This results in a composite of our material within the joint which has grain laying at different angles, most usually 90°. That's quite interesting, it's how we make plywood.

So from the outset there is the potential or even likelihood that the material within the joint structure will be very stiff, and strong.

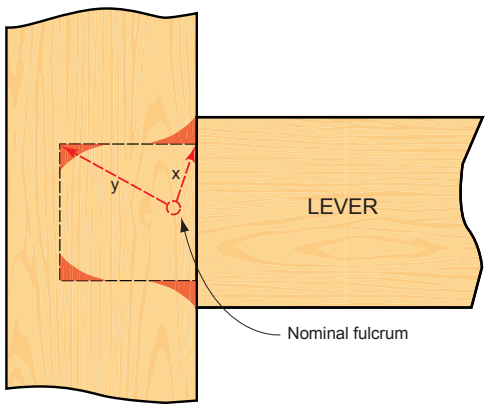
PHOTOGRAPHS BY DOUGLAS COATES UNLESS OTHERWISE STATED

In the mortise and tenon illustrated here, this assembly is experiencing racking so the stretcher's tenon is trying to rotate within the mortise. Assuming the cheeks of that tenon are bonded (if not it's failing already), then there is a notional fulcrum and the stretcher is a very powerful lever. Obviously, quite small loads that try to bend the stretcher convert to huge loads inside the joint. These loads are concentrated into a very small proportion of the joint's internal volume. If the bond fails then the fulcrum point is free to move and distortion results, quickly leading to failure.

What we do know is that small areas of any joint are doing most of the work and in a sense the rest of the material is there to connect the hard-working areas to each other. It might be an 80:20 rule – 20% of the joint surfaces or internal volumes are doing 80% of the work (very approximately of course).

It's difficult to turn away from all that has been learned and passed down over centuries, evolving along the way. This is a temporary call to ignore what we know or accept as given. Keep what we know about wood as a material, just forget what we know about joint design for a moment. Essentially, we are aiming to create the largest possible area of contact between the two components, with minimum structural disruption. We create a number of mating faces, and each face will have a job to do in the joint: reference (locational); bearing (to take main loads), bonding. All contact faces are locational and together they fix the two pieces precisely. It's easy then to determine what are bearing and bonding faces.

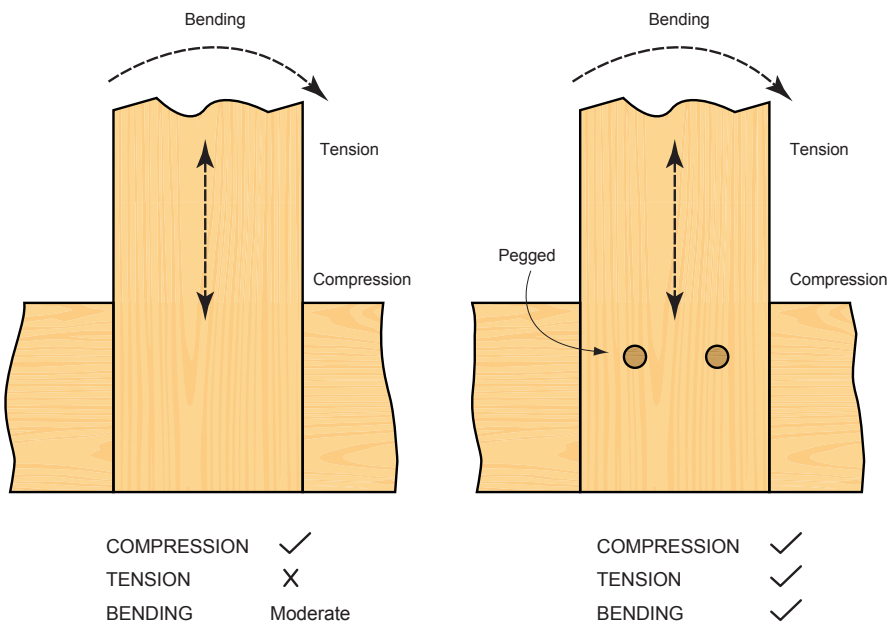
> "This is a temporary call to ignore what we know or accept as given"



We know the power of levers so it's easy to see the immense loads concentrating into very small areas of the joint. These are the most common distortions you see when the joint has failed. You might say that the fulcrum is at the top or bottom corner. Agreed: if the bond has already given way

There's a concise set of key requirements in any joint:

1. If we think of a joint having a total volume when assembled, then that volume is shared between the two components. It tends towards the 50/50 split but it is adjusted for the application, or compromised because the integrity of the joint is not our only consideration. We often use blind joints for aesthetic reasons for example, but a through tenon will beat a blind one every day.
2. We aim to maximise the mechanical gains of laying grain at 90°, or somewhere close.
3. We need to create reliable bearing surfaces. We know that woods compress most readily across the grain, and are very resistive to compression along the grain. End grain is an excellent bearing surface. It also happens to be a very poor bonding surface – we'll look for that somewhere else.
4. We want large bonding areas, and these need to be long grain to long grain. These faces will be at angles to each other so if we can bond them well the result will be very strong and stiff. But these faces are not the best bearing surfaces. They are not bad because they are relatively large areas, but they are not fundamentally good as bearing surfaces. All this is general of course – very hard woods like lignum (*Guaiacum officinale*) are excellent bearing materials in all orientations (tricky to glue though).



A simple bridle joint. An excellent joint except in tension upwards, of course. The sides are bearing faces which take load and need to be a good tight fit. Clamping gets the third (hidden horizontal) face tight also. The simple addition of pegs (drawn or not) makes this joint stronger and more versatile

If we take the case of a simple bridle joint, we have the maximum possible bonding area with grain laid at right angles. The sides are the bearing faces and need to be a good close fit. Clamping gets the shoulder tight down, and this forms the third bearing surface. If future movement within the wood is taken into account you may make the side faces a slight interference fit (feather the leading edge for clean assembly).

PHOTOGRAPHS BY GMC PUBLICATIONS/DEREK JONES

As a general rule, time invested will yield a return. Double tenons are good, a sliding dovetail beats a dado, adding a key to a mitre makes a huge difference.

Proportions and tolerances

In the previous article I mentioned that we also aim to get the maximum volume of long grain material into the joint. Seen from the receiving component that means removing the minimum long grain we can. It's the long grain that gives us almost all the good properties we want (strength, stiffness and so on).

It would take far too long to discuss every form of joint in detail, but by thinking about the loads the joint will see in use, then identifying the bearing and bonding faces, and then designing and cutting accordingly – by doing all of this we will improve the long-term performance of the joint. Taking a blind mortise and tenon as an example, deeper tenons are good on every count. Steeper angles on dovetails increase the interlock area (but don't go too far). Firm contact or even some tightness is good on any bearing surface, where at least one face will be end grain. To go a step further, modified versions of the common joints can offer significant advantages.

Reinforcing joints

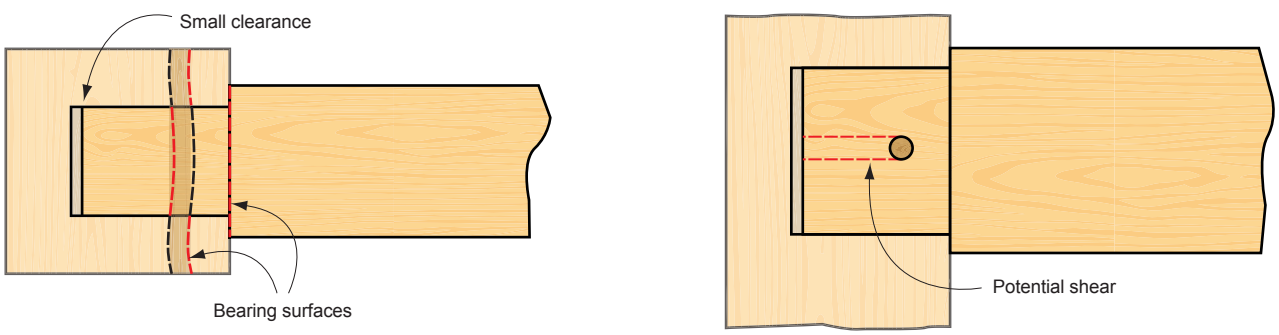
Adding a third component to a joint will improve its performance, sometimes quite dramatically.

Splines, keys, wedges and pegs (or dowels) are all used to lock joints together, increase bonding area and to tolerate specific loads. An example is the addition of a spline to a simple mitre joint, which is otherwise quite weak. Biscuits are just splines by another name. For any critical applications, the time invested in adding this joint 'complication' will be well rewarded.

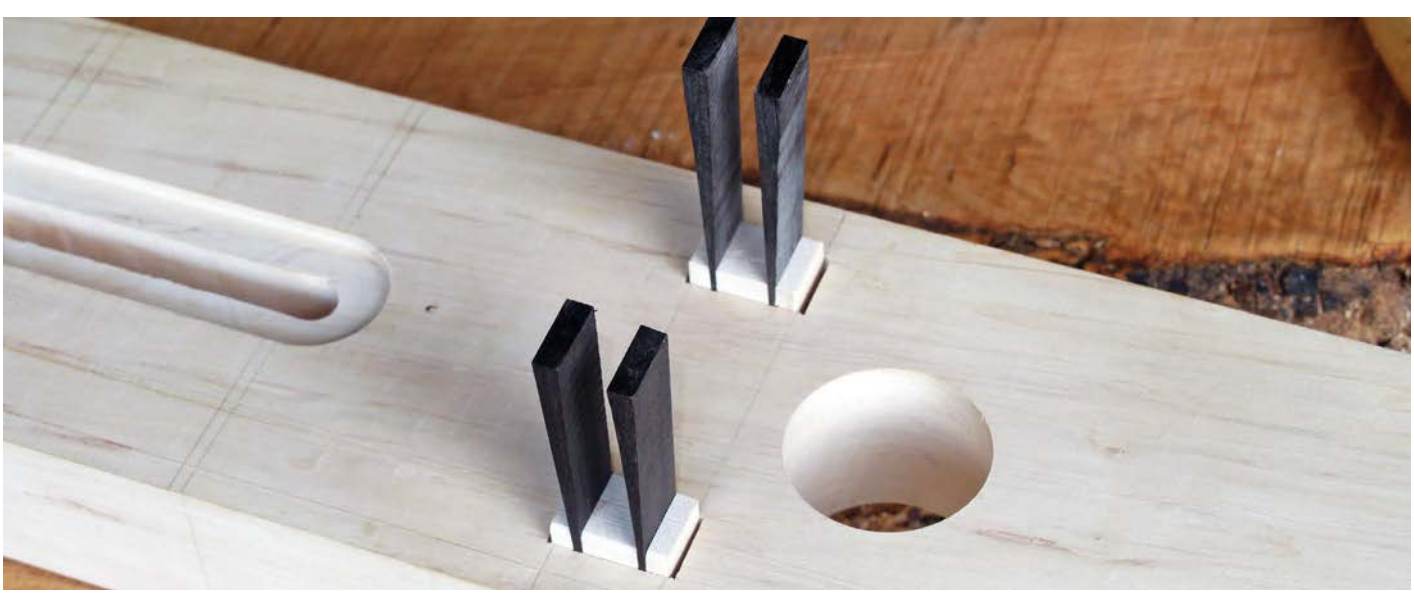
In some cases the third component is placed under considerable load itself, so choice of material is essential. Pegs must be straight grained and cleaved to ensure grain flows straight along the peg axis. I always use a harder wood for wedges, because I want control of the compression I place into the tenon. If the wedge is also compressing I won't know or feel what is going on. I'm personally quite wary of draw-bored pegged joints. I think they are fine things in architectural structures (green oak frames for example) but high-risk and a bit brutish for furniture. If at all, I would certainly make the offset small, 0.5mm maybe. I make sure pegs are very dry indeed – using board ends (offcuts) cleaved and then stored indoors. If there is any moisture at all left in the woods, I want the peg to be dryer still so as it equalises it will swell into the joint. We're talking tiny differentials here because the woods being used are properly dry and stable of course.

I have great faith in wedged tenons. Made with just moderate care they are incredibly strong and stable. Wedges need to be perpendicular to the grain flow of the receiving (mortise) component, because the wedge will apply massive pressure inside the tenon and that must be transferred onto end grain, square-on. I've seen round three-legged stools with wedges placed tangentially in the top for visual reasons. It doesn't look right because it isn't right – those wedges are trying to split the top. We have been using wooden wedges to split stone for centuries, maybe millennia. We should know better.

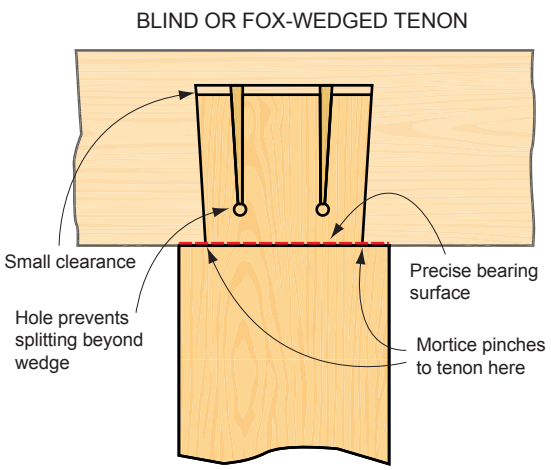
I'll mention one more example of reinforcement – the square key inserted across a scarf joint. I've seen it used in the arch of a Gothic door frame and it acts to pull the two parts together with a lot of force, mating end grain to end grain. I think there is a real beauty in such excellent engineering.



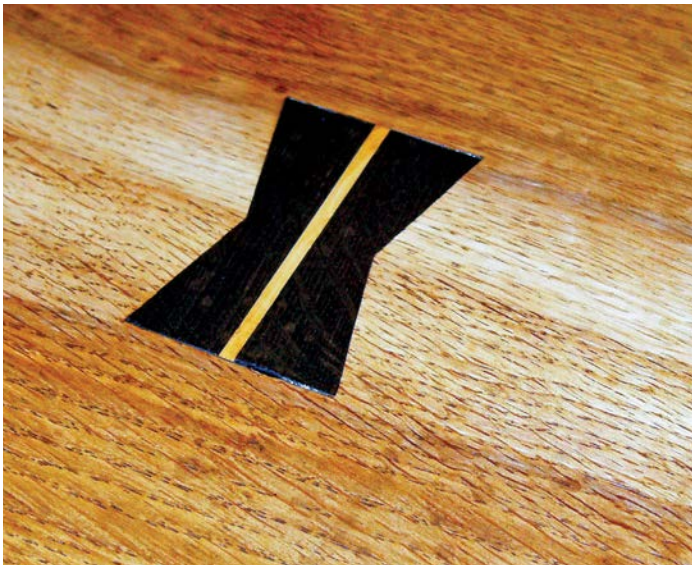
The draw-bored and pegged mortise and tenon is considered a really strong joint, and if fortune favours it can be. But the big loads are concentrated over tiny areas – when it fails, either the peg or the tenon shears. That is when you get to see how little wood was taking such a huge load. We need to take care deciding the offset. Joseph Moxon advised 'about a shilling' but that was a 1680 shilling and I don't have one – sounds a lot to me though



Wedged tenons. Here using ebony that has been cleaved along its grain. It is helpful to use a harder wood for the wedge – this puts all compression into the tenon and means you have more control over what is going on. I make the wedges quite long as I often find they will drift sidewards as they are tapped in, maybe tracking grain in the tenon or just looking for a way out. That drift looks very bad (worse still with contrasting wedges) so the extra length lets you steer the wedge in



One of my personal favourites. It doesn't take much longer to make and what it gives in return is quite stunning. If in any doubt then take the time to make one, glue it up and leave it a week or so. Then break it – I'd describe breaking this joint as more like having to explode it. It also gives you the thrill of a once-only fit. No dry run, just precision and faith. Tip: on assembly use a lot of sharp small taps, not one big bang. And use a glue that's not 'grabby' and has a decent open time



A clever use of the dovetail form to act as a cleat, joining two boards for a table top. The two-part bog oak cleat has a box wedge forcing the dovetails into the long grain of the oak top, hence drawing the top boards together. From an Arts & Crafts table by Gimson and Barnsley, this one was made by Richard Arnold

Avoiding failure

The sure way to prevent a future failure is to over-engineer everything, but that is neither efficient or attractive. From race car engineers to bridge designers, the efficient and elegant approach is to design for purpose, and add a safety (or error) margin. In our joinery we are dealing with a huge number of variables and using an inconsistent material so it is beyond our reach to get this close to the margins of possible failure.

By taking a little care in selecting the woods then making the joint with an applied accuracy, we can improve the joint's future efficiency. None of this really takes longer or costs more. Select workpieces with straight compact grain structure and no flaws, and identify bearing and bonding surfaces. By 'applied accuracy', I mean accuracy that is adjusted for the purpose. I want bearing faces to be a really good fit, and bonding faces to be slightly more free with maybe 5 thou clearance. I can't confidently saw to 5 thou, but I can pare this with a chisel (it looks and feels like a fine shaving off a well-tuned smoother). With this kind of fit and careful use of the adhesive, we are giving any joint the very best chance of a good life that we can.

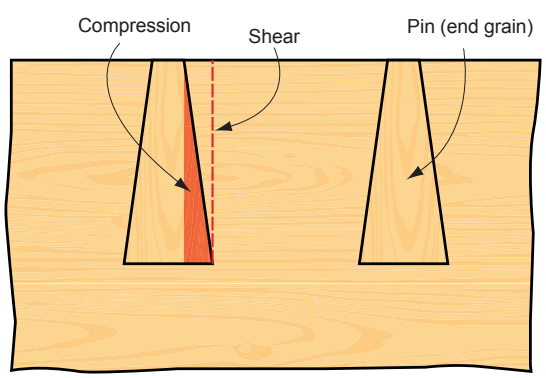
About dovetail angles

From a mechanical viewpoint, the dovetail needs to be a tight fit with the pin under very slight compression. This compression applies load into the tail and helps prevent shear along the tail.

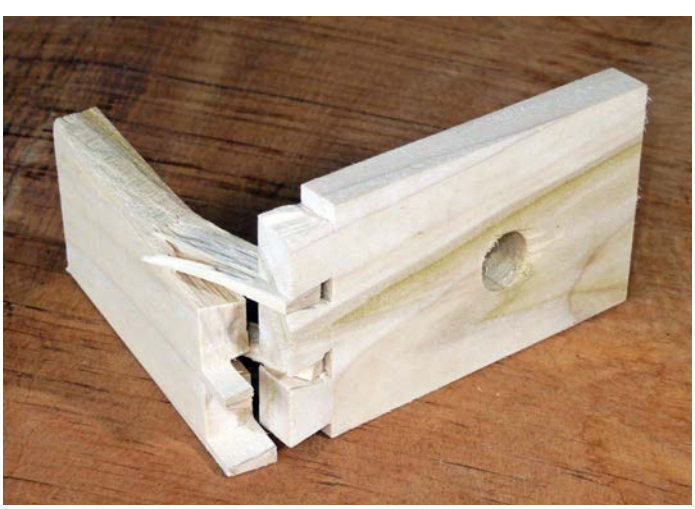
The angle is only there to achieve an interlock – less than say 1:10 and we may as well have a finger joint, more than 1:4 is excessive as it begins to actually encourage shear in the tail.

So, using around 1:6 to 1:8 we have it right of course. I think these exact angles have come about because companies can sell us pairs of marking gauges, not because the angles must be these.

A few years ago I was taken to a mothballed joinery shop, full of old Wadkin machines and a few well-used workbenches. On one of them, a strong gouged line was scribed at an angle on the front of the skirt beside the vice. This was certainly a guide to 'eyeball' when setting dovetail angles, and it looked to be about what we use. Time was money and I doubt these makers could afford to take the time marking out dovetails the way we might.



Under its normal loads, the dovetail is at risk of shear along the grain of the tail, and excess compression (hence distortion) in the pin. Compression in the pin is applying pressure into the tail and this pressure helps reduce the risk of shear. So there is a sweet spot (or range) for dovetail angle – the main variable being how soft (compressive) the wood is. Hence we think about softwoods and hardwoods, but we should think more about SOFT woods and HARD woods. After all, balsa is a 'hardwood', and current supplies of mahogany are no harder than most softwoods



Dovetails are a lot stronger than they look. In this example (poplar) the joint opens a small amount as the pins compress but then ultimate failure comes from deep fracture down the grain. In this case the whole side came away as well. The 'London-style' skinny pins would not withstand this punishment

Managing movement

We call it movement, but I can't recall problems arising in a piece of furniture because the woods were too dry. And I have never yet come across a workshop here in the UK that was too dry. I've definitely experienced the opposite, and these days I take far more care to manage moisture content before and during build. Our homes have central heating and, increasingly, air conditioning. For the vast majority of applications we are being challenged by shrinkage.

My own approach is:

- Get all the movement you can out of the wood before the build, and keep it that way up to completion. This means getting the wood's moisture to where it will be in the home, over the long term.
- Rough (over)size every component to release any stresses (often stored in a board from its time in the kiln), then acclimatise down to the target dryness.
- And then, still expect small amounts of shrinkage over the long term but do all you can now to minimise those.

The first and obvious course of action is to get the moisture down to its long-term stable level. If you have a moisture meter (and it is an important investment) you have probably been around your house testing various woods. I generally get about 6%, maybe less. The hardwoods I get from a reputable supplier are generally around 10–12% moisture content which is typical I think, but too high.

So, going back to our joints we need to get as much movement out during the build as we possibly can. I think there is an argument for slightly over-drying, partly because the amounts of movement at these low levels of moisture are very small and a tiny swelling in a joint is better than shrinkage.

> "For the vast majority of applications we are being challenged by shrinkage"

The adhesive interface

This is an extensive topic, but we are considering mechanical properties of joints here.

In the previous article I referred to the glue as a membrane or interface between the two components. We want that interface to transmit loads (stresses) through the joint as efficiently as possible – ideally as if it wasn't there. The joint may be well fitted but if the glue membrane can flex (even very slightly) then mating faces will distort. Distortion increases stress in critical areas and failure will ultimately follow.

Because stress will find the weak point, wherever that is and no matter how small it is – it is important to ensure the entire mating area is connected with glue (the bottom of a blind joint is not mating). If stress is a gremlin looking for a weakness, then a sudden discontinuity in the glue membrane is exactly the kind of place those gremlins will get to work. Stress is looking for the weakest link in our structural chain.

- Glue needs to be low viscosity to flow and penetrate (that's one advantage of hide / pearl glue, provided the wood isn't too cold).
- Cover all areas within the joint, on both components. Applying glue thoroughly to both components may take slightly longer but it's a fraction of the time it took to make the joint. This is to help avoid discontinuities in the bond membrane.

- Apply to end grain (the tenon end for example) – it won't bond usefully but it's an end-grain sealer and end grain is mostly where we get movement from.
- Give bonding faces enough clearance for the glue to do its job – I mentioned 5 thou per face but a nice slip fit is about right,
- Listen to the makers. It may be 'stronger than the wood itself' but there are terms and conditions in the small print. Working temperature is important and cold winter workshops represent a disclaimer.
- Use a brush or similar – I have a cheap brush stuck into a hole in a pot lid. Keep water in the pot and the brush will last many months (I'm from Yorkshire where these things matter).

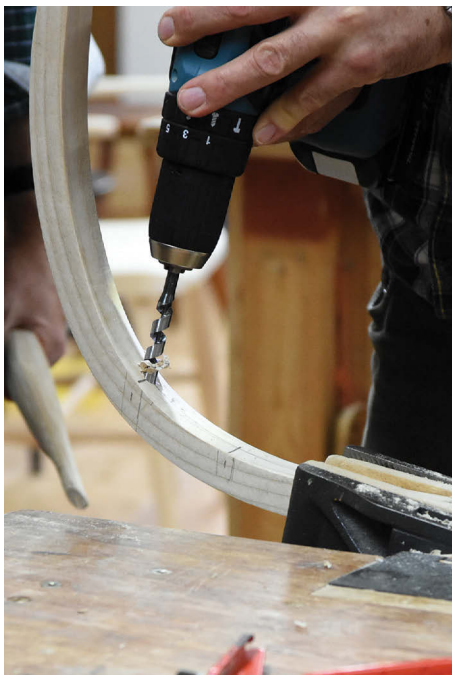
In our joinery work we are dealing with such a huge number of variables that mechanical principles can only take us a part of the way. I set out to look at joint-making from a different point of view, in the hope that it gives a broader perspective and helps inform the decisions we make in designing and building joints. I regret to inform you that the answer is not 42. F&C

Breadboard ends on tops must provide for future movement. This 100mm ash workbench top will live in a dry workshop, but it will be subject to small cyclical movements – a reminder that we have to consider the environment the piece will live in. The front corner is built using a double dovetail. A sliding tenon (tongue and groove) then locates all the way back, fixed with coach bolts into slotted holes. The big dovetails are made quite tight, requiring a once-only assembly with no dry test-fit. The bonding faces on dovetails should be rather tight-fitting. Using a short bristle brush I can scrub the adhesive into the surface of both components, aiding penetration where there is hardly any clearance for glue. A warm day and a low viscosity adhesive helps a lot here

Our correspondent: Windsor Journeyman

Glen Rundell reports from his Windsor chair-making course and considers what can be done to preserve traditional techniques

PHOTOGRAPHS BY DEREK JONES/GMC PUBLICATIONS



Some things are hard to describe in words

Back rails held in tension before fitting

The traditional English Windsor chair: shapely, functional and strong. But why? Why are the legs placed at the outermost edges of elm (*Ulmus procera*) seats? Why is there just a slight rake and splay on the front legs while the same features on the back legs are more pronounced? And how is it that the dimensions of their American counterparts are generally smaller and finer? Some of these anomalies are easily answered but others are not so clear. An insatiable thirst for knowledge has kept us innovating and creating for thousands of years and it's what brought me to England to learn from James Mursell at The Windsor Workshop, who I consider to be the foremost maker of the English Windsor chair at this time.

There's a mechanism in most of us that is fed by information. Knowledge inspires us and feeds our creative drive. Throughout history information has underpinned society through manuscripts, books, newsprint and now social media with one common thread: human contact and the desire to communicate. There's no doubt that the written word is an effective means of capturing details and sharing information but there's nothing that compares to the direct transfer of information from one being to another. We don't push pre-school age children into rooms with a pile of books and a few YouTube videos, shut the door behind them and say 'learn'. No, we give them a navigator for that knowledge in the form of a teacher. Though the level of complexity may change, the path to success remains constant in that our apprentices have Masters and our would-be scholars, professors. By definition the millions of 'how to' videos and books rarely include the hundred or more ways in which you may mess up a technique or how to fix it, but a Master is constantly overseeing their protégé's work, guiding them and investing in their future.

To satisfy my thirst for knowledge of the Windsor chair I could have sat at home in Australia and looked at pictures of English chairs or indeed viewed some dusty examples in a museum. But being time poor and not happy at the thought of wasting countless metres of timber to perfect a technique or chair, I revisited a path I've walked numerous times in my 30 years of working life; I put on my boots, became a journeyman again and headed off in search of knowledge. It's not a new idea, indeed journeymen (and women) have been doing so for centuries.

New territory

I learned a lot from my week in West Sussex with James and the five other students on the chair-making course. I make Windsor chairs for a living back in Australia so some revision was inevitable, but there is always so much more to learn from watching and listening to a Master craftsman who has perfected his trade. It's worthy of celebration too, that James and others like him share their knowledge. We've all been delighted and inspired after reading a book by a Master craftsman. But what of those craftsmen that slipped through the net and didn't have their work and ideas preserved in ink for the next generation? Think also for a moment about the times when a piece is studied and we still have no idea, at least none confirmed, of how that artifact was made and that the secret was probably taken to the grave. I know that things were different 'back then', trade secrets were your livelihood and you protected them accordingly. But consider those traditional trades and where a lot of them stand now. Protecting those secrets is almost irrelevant now, in fact for some it was the root cause of their demise.

My second Journeyman experience, (the first was travelling across Australia as a qualified plumber and gasfitter) was to travel to Tennessee to learn to make Windsor Chairs from Curtis Buchanan. The chair-making side of that journey was life changing, literally. But the 'game changer' for me was Curtis' willingness, no eagerness, to

A rare knock-down version at this point to make transportation back to Australia possible

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 like to take you on a workshop tour of the globe. This month we're handing over to Australian chair maker Glen Rundell.

share information. Knowledge, tips, tricks of the trade and as many chair-making patterns as I wanted. You see he was shown the same courtesy by Dave Sawyer years before and he understood. On that same trip a few weeks later, Master Shaker oval box maker, John Wilson did the same. And a year or two later, when I strapped on the boots again, Peter Galbert inspired me with the same thoughtfulness and generosity in his Stirling, Massachusetts workshop.

In the tradition

Last week, James followed suit. He also shared information that was given to him by Jack Hill, Mike Dunbar and, coming full circle, Dave Sawyer too, all chair makers that have taught him. But more importantly James can rest assured that the same information will be passed to the students I will teach when I return home to Kyneton, Australia.

It's powerful stuff when you think about it and although it's been going on for thousands of years there are gaps beginning to show in our knowledge and another aspect of the Fellowship that brought me to England.

In Australia we are nearing the end of the human connectivity to the golden era of traditional trades of the last century. That generation of tradesmen and women who are in their 70s and 80s now have no one and no education system with which to pass on their knowledge. Whether directly or indirectly, I have had the benefit of learning Windsor chair making from a number of experts. Similarly when that generation of tradespeople die, we do not just lose their knowledge and input, we also lose hundreds of years of experience in real spoken history, not just the stuff that was written down in books by observers interpreting the work of the craftsman.

Australia does not have a dedicated education facility that is committed to the preservation of our traditional master and apprentice type trades and techniques. We don't have a college like West Dean in West Sussex or North Bennett Street School in Boston and we desperately need one.

Just like the loss of a species of plant or mammal, it's all very well to lament their passing when they're gone, but a better use of that energy would be to preserve it before it dies and the trades are no different. It's not really a question of 'if' it should happen, but more appropriately 'when' and it's becoming more common to discover the answer is '20 years ago'. So I will return to Australia with 200 years worth of knowledge, condensed in to one week and passed on to me from James and the evidence of the success of West Dean College and similar facilities to convince the powers that be to support such an idea in Australia before it's too late. F&C

Nothing beats a live demonstration to capture a technique...

... and nothing beats putting it into practice imediately thereafter

Smiles all round for two Windsor afficinados

The fruits of their labour and the end of another sucessful week at the Windsor Workshop

To see more of Glen's work, visit: www.rundellandrundell.com.au

For a list of courses at the Windsor Workshop, visit: www.thewindsorworkshop.co.uk

For information about West Dean College, visit: www.westdean.org.uk

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Panel Sizing Saws

Forsa 8.0 & 9.0
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Forsa 4.0-P1	Inc Pro STC + TWE + TLE + scorer (as illustrated)	NA / 6.5 + 1.0	107 mm x 1600 mm	£3,300.00	£3,960.00
Forsa 4.1-P1	Inc Pro STC + TWE + TLE + scorer	NA / 6.5 + 1.0	107 mm x 2100 mm	£3,800.00	£4,560.00
Forsa 8.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 2600 mm	£5,250.00	£6,300.00
Forsa 9.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 3200 mm	£5,395.00	£6,474.00

STC = Sliding Table Carriage. TWE = Table Width Extension. TLE = Table Length Extension. **All prices effective as of the 1st January 2017.**

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Pencil case with piston fit tray

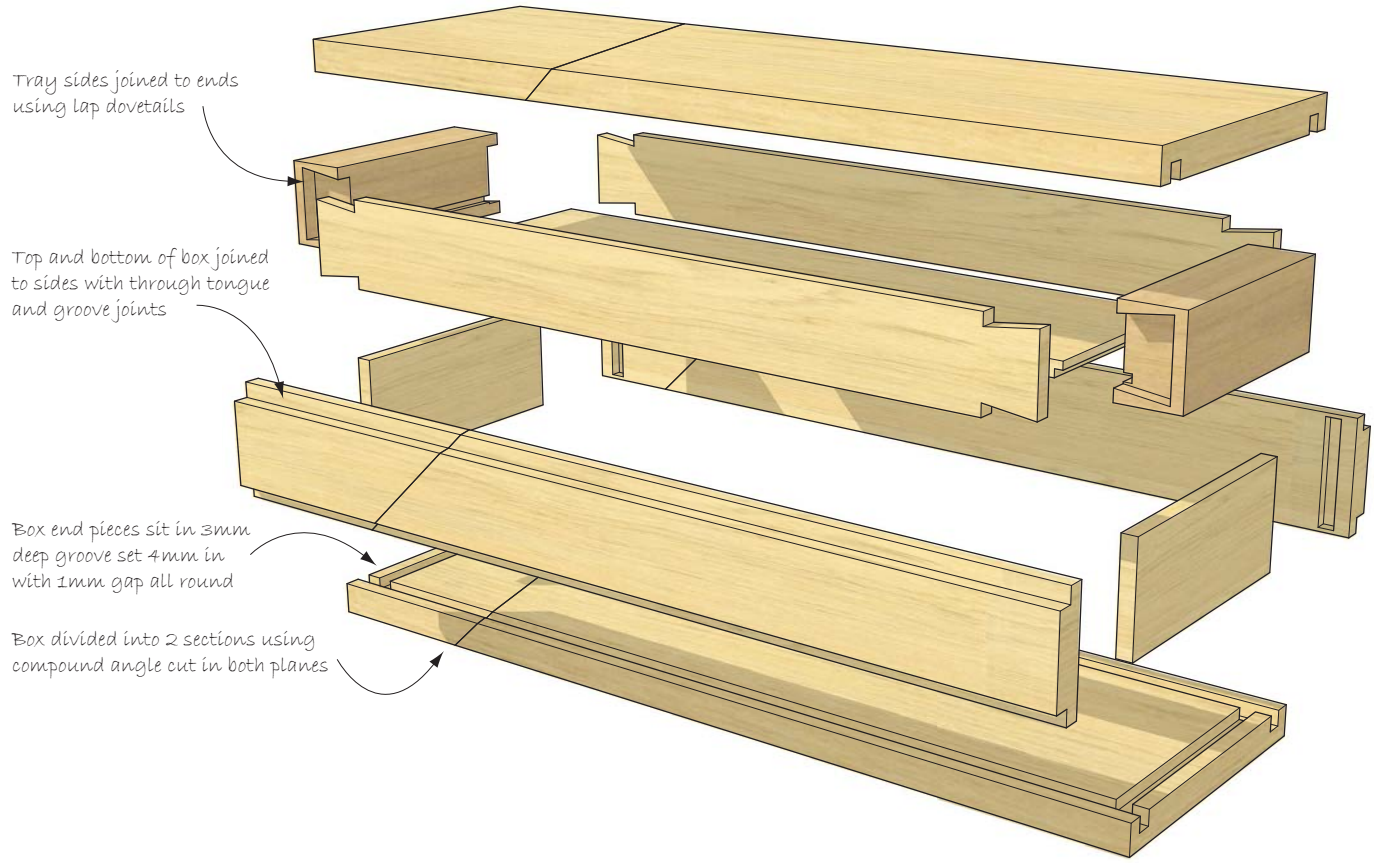
Hone your marking and measuring skills with Ian Parker's box project

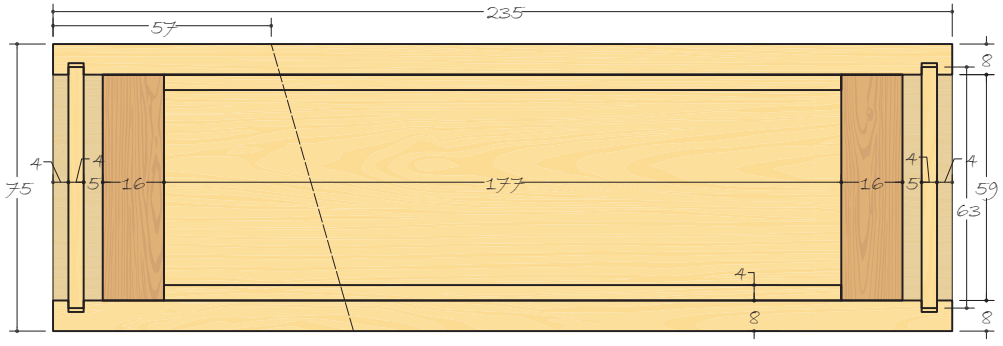
A video of the finished project can be found on Ian's website at:
www.ianparkerfurniture.co.uk

PHOTOGRAPHS BY IAN PARKER

There can be no better test of a maker's skill than the construction of one component to perfectly contain another. The highly desirable piston fit drawer is quite rightly revered among makers and an unmistakable sign of quality to the uninitiated or potential customer. Illusive they may be but unattainable they most certainly are not as Ian Parker demonstrates in one of his set piece projects to construct a box to house a perfectly fitting drawer.

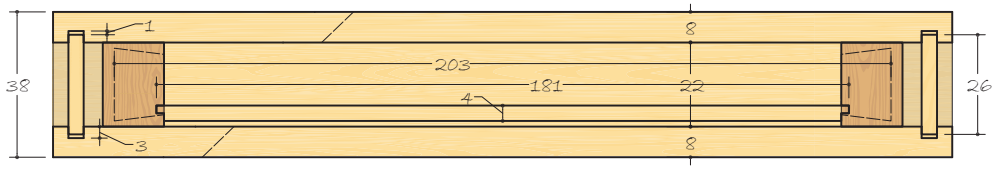
From the outside this small box appears to be a relatively straightforward exercise in very simple jointing. On the inside, however, there is a container that is made to tolerances designed to highlight any issues a student may be having with stock preparation. The box can be made over three days and is a great project for beginners looking to establish a level of accuracy in their marking out and measuring technique and set them on the right path to dimensioning with hand tools. This is the first project I teach my students as the ability to make components repeatedly square and to set dimensions is a pre-requisite to producing crisp work. This exercise highlights any errors or techniques that need improving.



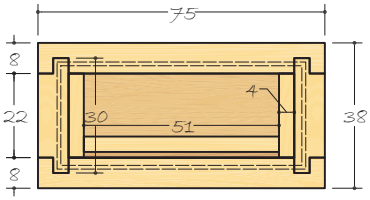


PLAN SECTION

Scale 1 in 2



LONG SECTION



CROSS SECTION

Set the plane

STEP 1 This project begins by making the case. All the stock material is planed and sanded on the face sides to the required thicknesses: 8mm for the case and 4mm for the case ends, tray sides and base. Aim to get as near to a finished surface as you can as any further work after this will change the dimensions of the components.

STEP 2 Plane a reference face on one side of each of the case sides and the top and bottom. Do this using a shooting board and ensure the plane is set to take an even cut across its width. A cambered blade, such as that used on a smoothing plane will require grinding to a straight edge.

STEP 3 This is easy to check by holding the plane body upright and carefully pulling a thin piece of test wood over the blade and looking for a uniform shaving across the width of the blade. Some lateral adjusters can be less than precise so use a small plane adjusting hammer to tap the blade and align it correctly.

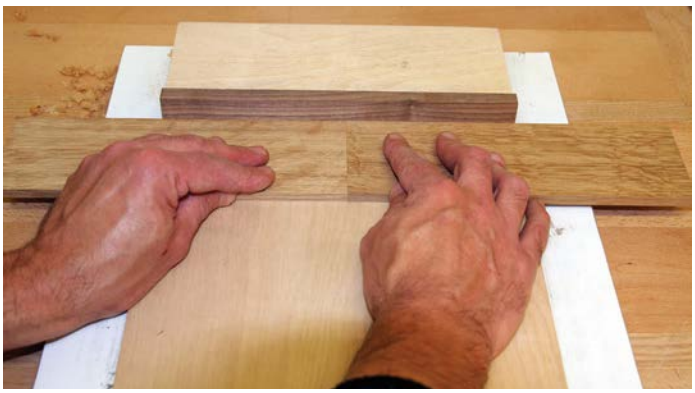
No bananas

STEP 4 Accuracy is checked at every step throughout the project as errors have a nasty habit of coming back to bite you at the end. To check that these four reference edges are actually flat and not curved, place two edges against each other and press them together at one end. A gap should not open up, if it does then check the whole batch to find the culprit and adjust accordingly. Remember it only takes one component to throw things out so adopt a methodical approach to quality testing.

PRACTICE TIP

If you are new to furniture making or would like to test your hand planing skill, then use some scrap pieces about 400mm long, 60mm wide and 10mm thick. Plane an edge flat on one side of each and check your accuracy as described in 'No bananas'. Keep practising this until you are confident that you can consistently plane edges flat.

Dimensioning



STEP 5 Set a cutting gauge to the required dimension and mark one face on one top and one side only. Plane each of these to final dimension; you can set the plane to initially take a heavy cut and gradually reduce the cut until a final wafer thin shaving is coming from the whole pass. All the time check that you are planing parallel to your marked line. The other corresponding pieces are then planed to match. Place the reference piece up against this and use your fingers to check for evenness. When you are able to turn the piece around and upside down without detecting any differences in heights, then they must be a matched and square pair.

Routing a groove

STEP 6 The pencil case is effectively a tube made with a simple tongue-and-groove joint. The joint is cut on the router table with a 4mm slotting cutter. The cutter is set to cut a depth of 4mm and set to 8mm high. Both parts of the joint are cut using this one setting. The groove is cut on the wide top and bottom sections with the tongue cut on the narrower sides.

Shooting to length

STEP 7 A block plane is used on an end grain shooting board to dimension all pieces to the same length. When complete, a slot is cut on the inside face of the tube at either end to house the end stops. The slotting cutter depth is reduced on the router table to cut a depth of just 3mm. This groove will need to be finished with a chisel on the top and bottom faces. The 4mm-thick end pieces are made to fit with a 1mm gap all around.

TOP TIP

Check if all four sides are the same length by using two pieces of scrap wood to try and pick up all four pieces at once.

Glue up

STEP 8 Use a small paintbrush to apply a thin film of glue to the grooves and tongues, take care to avoid any glue squeeze out on the inside of the case as this will prevent the tray from sliding and is difficult to remove. The two end stops are not glued in. Assuming the case is square and true then only light cramping pressure is needed.

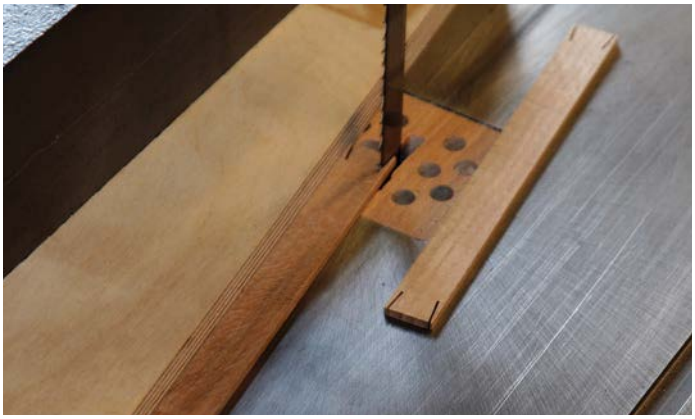
Splitting the case

STEP 9 A piece of scrap wood is cut and planed to 45° and a magnet inserted. This is then cramped to the case to help guide a fine toothed saw.

STEP 10 If you are using a backed tenon saw it is unlikely you will clear the guide and so the final part of the cut will be freehand. The freshly sawn faces are cleaned by pulling each part against abrasive paper held on a flat surface.

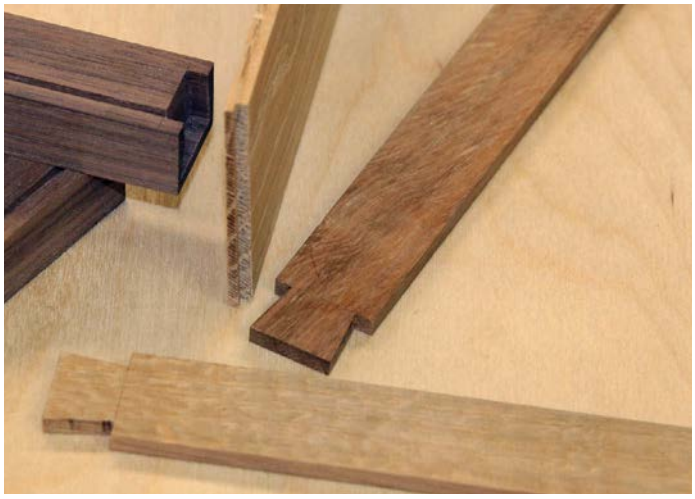
The tray

STEP 11 Now you have the case finished, the internal dimension can be taken using callipers and transferred to the tray side stock. The tray sides are planed to fit with just the smallest of gaps.



STEP 12 The bandsaw is used to cut a single dovetail on each end. This is achieved with a simple 1-in-8 jig. The dovetails can of course be cut by hand but this is a beginner project and the emphasis is placed on using a jack plane and a block plane effectively, we will conquer dovetails another day. I have a special chisel vice that students use to cut the pins on. If used correctly these ensure clean level sockets every time.

STEP 13 Finally a 2mm groove is cut in each end piece to provide a support to the tray base. I used a 2mm router bit in the router table, but a scratch stock would work just as well. The tray base is made to fit snugly and the tray glued up.



STEP 14 Here are all the tray components ready for the trial fit.

Trial fit

STEP 15 Despite all the accuracy employed throughout the making, the trays never go all the way down first time. Light sanding is all that should be needed to make the tray fit. Basically you are just flattening off any slight discrepancies on the sides and sanding off any glue squeeze out. Take your time with this stage as removing just the slightest amount will affect how slowly or quickly the tray descends. The tray should glide down on a cushion of escaping air regardless of which way around, or which end is inserted first. F&C

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The Skelton Panel Saw

Kieran Binnie puts the new saw from Skelton to the test

PHOTOGRAPHS BY KIERAN BINNIE

Of all the tools preserved in Benjamin Seaton's historic 18th-century toolchest, the nest of six saws are undoubtedly some of the most iconic, particularly the two large hand saws. These saws were from the workshop of John Kenyon & Co, successful file makers who made saws from 1757 (closing in 1930) and who have the distinction of being the earliest documented Sheffield saw manufacturer. The Kenyon hand saws are unusual to the modern eye – while most modern hand saws owe their aesthetics to the work of legendary Philadelphia saw maker Henry Disston, the Kenyon saws feature a more rounded front to the saw plate, and flat-bottomed 'London pattern' tote. However, the Kenyon hand saws would have been very familiar to 18th- and 19th-century woodworkers – the *Explanation or Key, to the various manufactories of Sheffield* published in 1816 by Joseph Smith records hand saws as being in the pattern found in the Seaton chest.

English saw maker Shane Skelton has been candid about the influence of Kenyon's saws on his work, and at the European Woodwork Show in 2015 Skelton Saws announced that they were developing a pair of Kenyon-inspired hand saws – the crosscut filed Panel Saw and the rip cut Hand Saw. A good crosscut hand saw has been a critical gap in my toolchest for some time, and so when Skelton Saws announced their latest offerings I promptly placed an order for the Panel Saw. Let's see how it performed.

THE SEATON TOOLCHEST

The Seaton Toolchest contains the most complete set of 18th-century cabinetmaker's tools in the world. Benjamin Seaton (1775–1811), a cabinetmaker from Chatham in Kent, was given the tools as a 21st birthday present from his father. Benjamin then made the chest in 1797 and made an inventory of the contents. The Toolchest now belongs to the Guildhall Museum in Rochester. For more information, see: www.medway.gov.uk

Specification

The Panel Saw has a 26in hammer-tensioned saw plate, which is 6⅝in deep at the heel, just like the Kenyon saw in the Seaton Toolchest. The saw plate is also taper ground, to reduce the risk of binding in the cut. Due to the expense and difficulty in taper grinding saw plates this is a feature that only a truly premium saw will offer. According to my callipers the saw plate is 1.2mm at the tooth line, tapering to 1.05mm at the top of the plate. Two tooth profiles are offered – a coarse 7tpi (which is on test here) as well as a fine 9tpi crosscut. The handle comes as standard in rosewood (*Dalbergia* spp.), and is sized to match the customer's hand size. Alternative timbers are available on request (and for an extra cost). The saw plate is significantly thicker than modern saw plates, and when combined with the rosewood handle, the Panel Saw has a heft that I've not encountered with any other hand saw. By way of comparison, while my 1900-era Disston D8 28in rip saw weighs 870g, the Panel Saw weighs in at an impressive 2.7kg. It is a testament to Shane's skills as a saw maker that the significantly heavier Panel Saw does not feel cumbersome in the hand.

As befits a bespoke saw maker, Skelton Saws offer a number of options to customise the Panel Saw. As an alternative to the flat-bottomed London pattern handle of the Kenyon original, a curvier dolphin bottomed handle is available, as is the option to shorten the saw plate to 24in for a more compact saw.

Out of the box

Simply unpacking a Skelton saw feels like a significant event. Inside the postal bag is a wooden box which unscrews to reveal the saw wrapped in layers of brown paper followed by rust deterrent paper, along with a letter of authenticity. As befits a company that emphasises tradition and heritage, Skelton Saws maintain a register of all their saws, which is a very classy touch.

First impressions are that the Panel Saw is very clearly in the Kenyon pattern, with the

distinctive rounded nose to the saw plate, and the 'London pattern' tote. Also present is the nib towards the front of the saw plate, which ensures that another generation of woodworkers will debate whether saw nibs are decorative or have a function (and if so, what that function is)! The Skelton Saws name is cleanly punched into the saw plate, rather than the more typical etching, and is very understated, as is the brass medallion on the middle saw-nut.

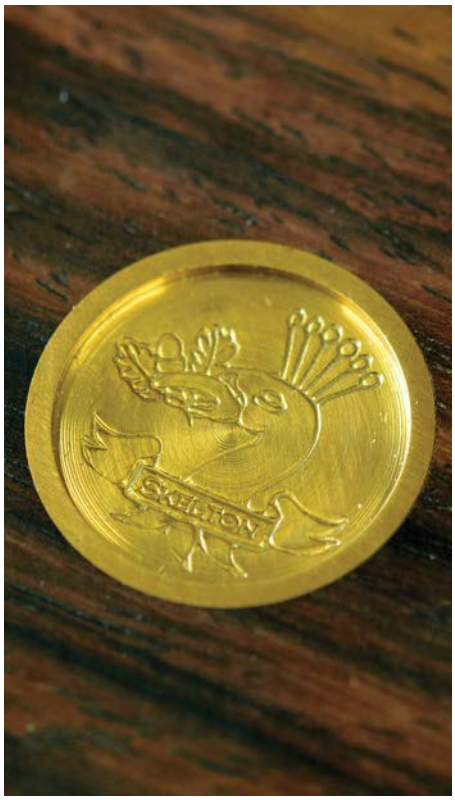
The tote is one of the most beautifully shaped handles I've had the pleasure to use – the curves flow seamlessly into each other, and the rosewood is polished to a gorgeous lustre. The attention to detail on this saw is staggering, particularly the delicate lamb's tongue carving on the underside of the tote, and also the elegant way in which the top line of the saw plate curves as it is let into the tote.

Just unpacking a Skelton Saw feels like an event

Each saw is supplied with a letter of authenticity, featuring the Skelton Saws' peacock crest

Skelton Saws stamp the plate of each saw with the company name

The Panel Saw has the same distinctive shape as the saw plate of the Kenyon saw, including the nib



The Skelton Saws medallion

The curved top of the tote is incredibly elegant, particularly given that the saw plate is also curved to match the handle

The tote is a stunning example of handwork, and feels comfortable in the hand

Despite being a coarse tooth profile, the Panel Saw leaves behind a good surface that won't take too much effort to clean up

Even on this splintery oak, the Panel Saw cut smoothly and minimised blowing out splinters on the exit side of the workpiece

The Panel Saw cut through everything I could throw at it, including this 90mm-thick yellow poplar

In use

All the custom options and eye candy in the world don't matter if a tool doesn't do the job it was designed to do, so how exactly does the new Panel Saw perform at the bench? Exactly as you'd expect given Shane Skelton's reputation as a premium saw maker. The tote is as comfortable as it is gorgeous – those flowing curves translate to a comfortable grip even for extended sawing sessions through heavy timber. The rosewood is smooth to the touch, but never slippery, and the tote has a pleasing mass that counterbalances the weight of the thick saw plate. Speaking of the saw plate, the extra weight helps push the saw through the workpiece, but I never found it to be too heavy or unwieldy. The thickness of the saw plate also means that it flexes less than with some saws, and this helps to maintain a straight kerf through the workpiece.

Shane is rightly celebrated as a master saw sharpener, and the Panel Saw sliced through any timber I could put before it with chainsaw-like efficiency. The coarser toothing gives an aggressive action that cuts rapidly without ever sacrificing control, and blow out on the far side of the work was kept to a minimum. Despite the large teeth and coarse filing the saw was easy to get started in the cut. Cutting through 50mm-square ash (*Fraxinus excelsior*) was over almost before I realised I had started sawing, as were my tests on 25mm-thick oak (*Quercus robur*) and 25mm-thick yellow pine (*Pinus* spp.) boards. The oak was a particularly splintery board left over from fitting out my toolchest two years ago, and despite the aggressive tooth profile there was minimal splintering on the exit side of the work. Having failed so far to find the limitations of the saw, I put a 255mm-wide board of 90mm-thick yellow poplar (*Liriodendron tulipifera*) on the saw bench. While this definitely took more effort, the Skelton saw still happily munched though the yellow poplar without any fuss. On thicker timber the taper ground saw plate comes into its own, and I didn't experience any binding while in the cut. The coarse tooth profile and filing means that the workpiece needs some cleanup after cutting, but definitely less than I was expecting.

Conclusion

It is tempting to view any reproduction of a historic tool as being more of a historical curio than something to be used in the workshop. This is absolutely not the case with the Skelton Panel Saw – this is a saw that will genuinely rise to any challenge you can throw at it, and I'm now looking forward to trying it out on 125mm-thick oak when I build my Roubo style bench in 2017. The Panel Saw is an expensive tool by any measure, but given that it is made by hand, and to a frankly imposing quality standard, that extra cost is easily justifiable and becomes almost irrelevant after you've spent some time using the saw. Put simply, this is traditional English craftsmanship of the highest order.

THE NUMBERS

Blade depth: 6⅝in
Plate thickness: 0.045in
Handle size: M–L (other sizes available on commission)
Crosscut: 10ppi/9tpi (fine), 8ppi/7tpi (coarse)
Weight: 2.7kg
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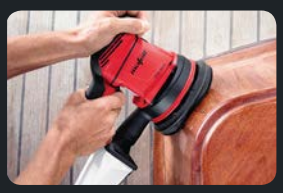

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UNDER THE HAMMER:

Chinese stool and settees

We take a look at two lots from Bonhams' Asian Decorative Arts auction

PHOTOGRAPHS COURTESY OF BONHAMS

Pair of hardwood settees inset with porcelain plaques

This small hardwood barrel-form stool is of circular section with a serpentine edge to the upper and lower spacers. The five curving uprights are cut with oval openings that join the top to the base ring. It is raised on five low feet.

The arms and back of each of these settees is built of joined latticework in squared C-scroll pattern. The rectangular soft mat seat is woven in intricate patterns, with the stout legs curving inward to horse-hoof feet. The circular porcelain plaque centring the back of each settee depicts the 'Four Accomplishments' rendered in iron red, black and gilt enamels. The 'Four Accomplishments' were the four academic and artistic skills required of the ancient Chinese scholar-gentleman. The skills that had to be mastered were the Qin musical instrument, the Qi board game, Shu calligraphy and a style of painting called Hua.

Qing dynasty

The Qing dynasty was the last imperial dynasty of China, ruling from 1644–1912. In contrast to earlier Ming-era furniture, Qing furniture is more bulky and much heavier in style. Furniture was designed to make a statement about power, at the expense of comfort. Over time, Qing period furniture became much more elaborate with its intricate carvings and inlaid decoration.

Hardwood barrel-form stool

Out & about:
The Royal Pavilion

In the first of a new feature, we take a tour of one of Brighton's most famous landmarks

If this month's Under the Hammer piqued your interest in Chinese furniture, then you might want to head to the south coast to visit one of the UK's most unique palaces – the Royal Pavilion in Brighton. Originally built as a seaside retreat for King George IV, the Pavilion is a stunning visual mix of English Regency, Indian and Chinese styles.

History

The Prince Regent lived a flamboyant lifestyle, which included a love of art, design and architecture, and he was particularly interested in art from the East. In 1815 Prince George commissioned the architect John Nash to create his dream of an oriental-style palace in England. Nash created an Indian-style exterior including domes, towers and minarets. The interior was decorated in a lavish style, combining George's love of 'chinoiserie' with his passion for French art.

In addition to the extravagant decorations, the Pavilion was at the cutting edge of domestic technology, as it was fitted with the best lighting, heating and sanitation systems. The kitchen was kitted out with the most modern equipment available at the time.

The work was completed in 1823 but George's failing health meant he actually spent little time there before his death in 1830. The Pavilion was used by William IV and also by Queen Victoria, who sold it to the people of Brighton in 1850. It has been a popular tourist attraction ever since, although during World War I it also served as a military hospital for Indian soldiers and amputees.

TAKE A VIRTUAL TOUR

If you can't make it to Brighton, you can still take a tour of the Royal Pavilion via its website. You can see 360° views of several rooms along with samples from the audio guide tour, see: brightonmuseums.org.uk/royalpavilion/visiting/virtual-tour/

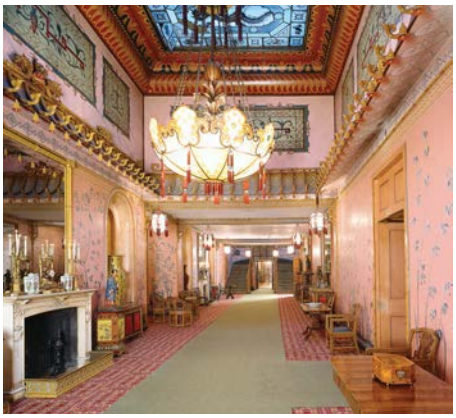
PHOTOGRAPHS COURTESY OF ROYAL PAVILION & MUSEUMS

What to see

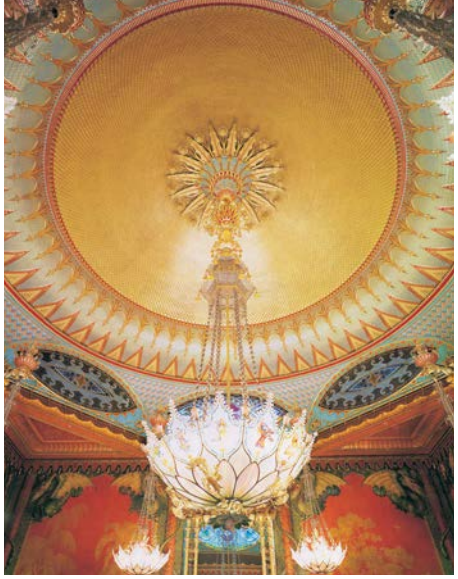
Higlights of a trip to the Pavilion include the stunning Banqueting Room, featuring a 30ft-high dragon chandelier, Chinese canvases and a satinwood sideboard decorated with carved dragons. The Music Room is also decorated in the chinoiserie style with lotus-shaped chandeliers and red and gold canvases. The Long Gallery was designed to showcase George's collection of Chinese art and is furnished with beech furniture made to look like bamboo. Although it was fitted out to be an efficient, practical space, the Great Kitchen was also designed to show off and features four cast-iron columns, decorated with copper palm leaves. The Royal Bedrooms and Reception rooms are also open to the public, as well as a gallery dedicated to the palace's time as a military hospital.

Brighton Museum & Art Gallery

There is more for furniture fans to see in the Brighton Museum & Art Gallery, which is situated in the Royal Pavilion garden. It houses a fine collection of British and European furniture from ca. 1880 to the present day. There are pieces from the major design styles of the 20th century including Aestheticism, Arts & Crafts, Art Nouveau, Art Deco, Modernism, Post-War Design and Surrealism.
Website: brightonmuseums.org.uk/brighton



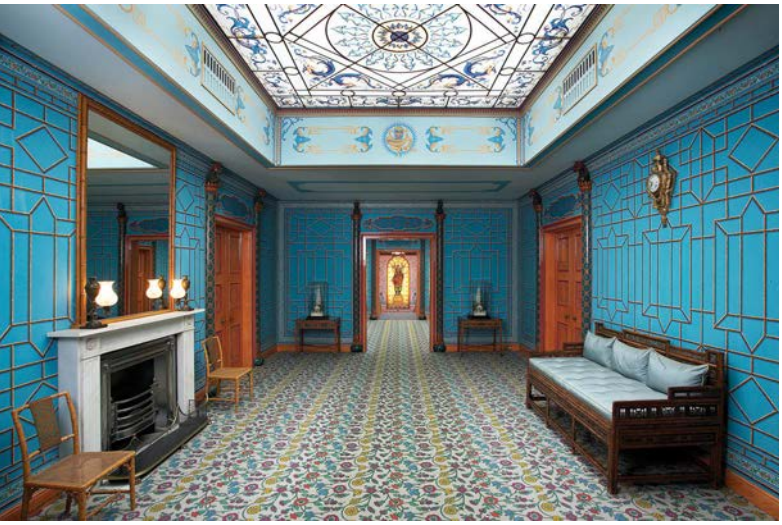
The Long Gallery, designed to resemble a bamboo grove



The Music Room's domed ceiling is made up of hundreds of plaster cockleshells

The Banqueting Room is dominated by the dragon chandelier

To satisfy Prince George's love of food, the Great Kitchen was kitted out with the best in contemporary technology



The South Gallery is decorated in a rich blue with bamboo-style furniture

Where else to see Chinese art and furniture

Asian Art Museum
San Francisco, USA
www.asianart.org

Philadelphia Museum of Art
Philadelphia, USA
www.philamuseum.org

Shanghai Museum
Shanghai, China
www.shanghaimuseum.net/en/index.jsp

Victoria & Albert Museum
London, UK
www.vam.ac.uk

Information for visiting

Address: 4/5 Pavilion Buildings, Brighton BN1 1EE
Website: brightonmuseums.org.uk/royalpavilion
Opening: Open all year, closed over Christmas
Charges: Admission charges apply, see website for latest prices
Information correct at time of publication, check the Pavilion website before making your visit

Elizabethan joined oak bedstead

We take a closer look at this remarkable piece from Bonhams' Oak Interior auction

Made in Cumbria in 1570, this bedstead is almost certainly made of Baltic-grown oak (*Quercus robur*), the tight grain of which allows for crisp and finely detailed carving. The headboard is made of three deep inset panels, each framed by dentil and egg-and-dart mouldings. The panels are spaced by fluted Corinthian columns and flanked by scroll and leaf carved ears. The central panel has a triangular pediment and finials and a cartouche carved with the date 1570. This is flanked by putto and scrolling-foliage carved spandrels, and a pair of Corinthian column end-uprights that support the cornice. The bedstock is made of heavy rails which are 1450mm wide. The headboard is 1895mm at its widest point.

Provenance

The bedstead was probably commissioned by Walter Strickland (1516–69) or his wife Alice (1520–85); Walter died a year before the bed was made, but he may have ordered it before his death. The Stricklands owned Sizergh Castle in Helsington, Cumbria, which was the first location for the bedstead. The Castle was extensively remodelled during the 1560s and 70s and the bed was likely commissioned for one of two new wings that were added at that time.

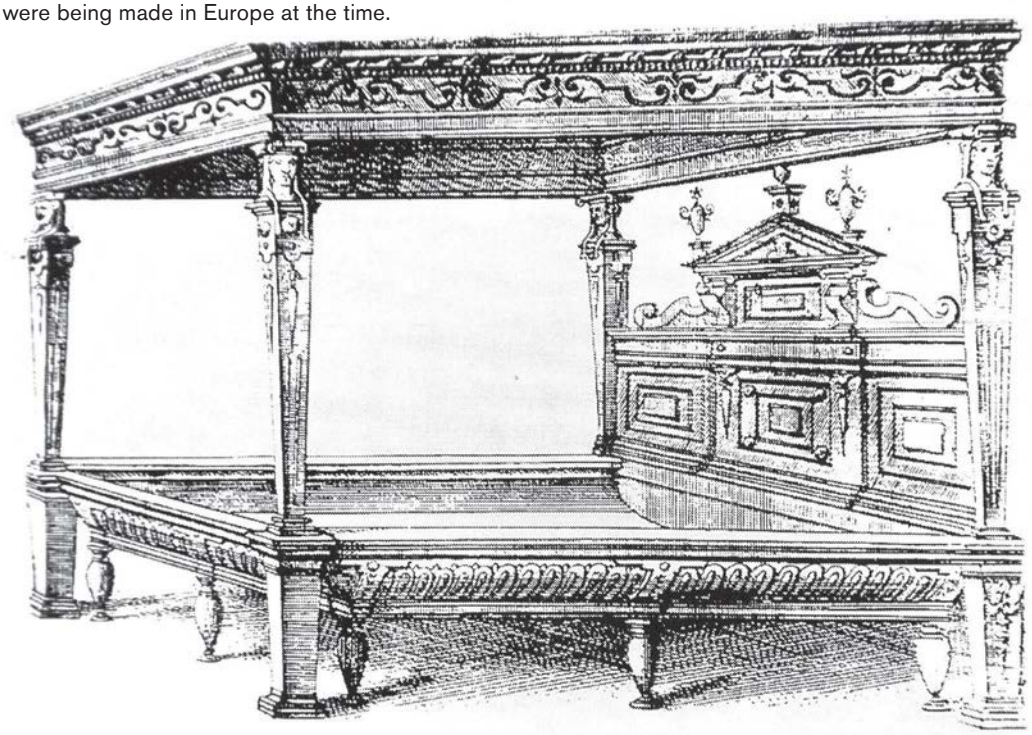
The bed was later recorded as being in Underley Hall in Cumbria, which was a Tudor-style mansion built in the 19th century for Alexander Nowell (1761–1842). The bedstead was sold at a Christie's auction in 1996 and has since been in a private collection.

PHOTOGRAPHS COURTESY OF BONHAMS, UNLESS OTHERWISE STATED

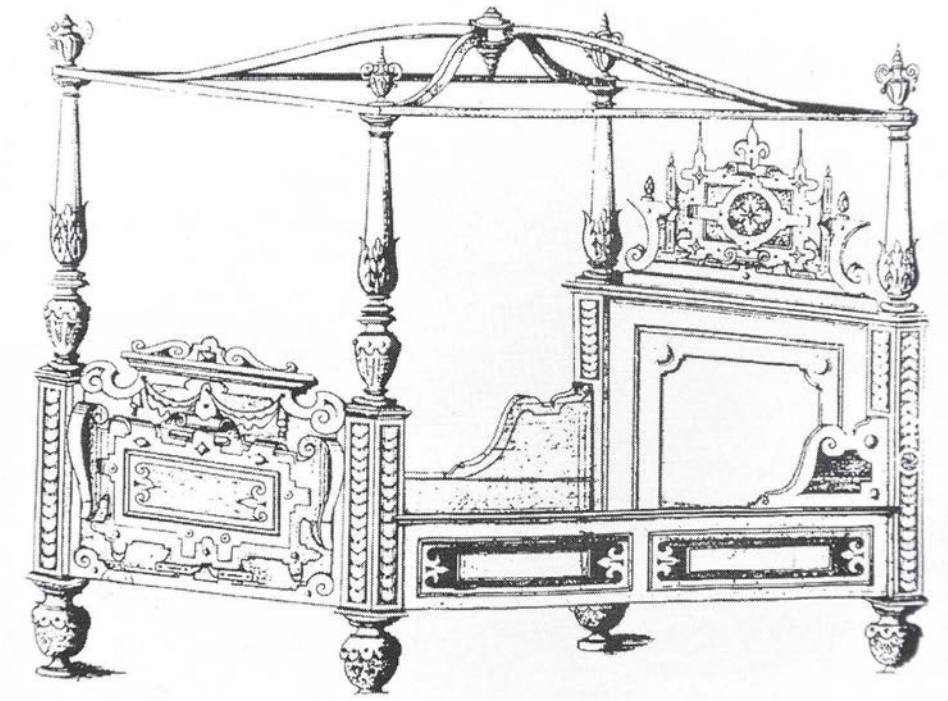
Design

Most English bedsteads of this period have a fully panelled headboard and panelled tester. However, this example has neither of those. Instead the headboard follows an architectural scheme, with the use of a triangular pediment and partly open back.
This design was likely to have been influenced by contemporary European prints, such as *Differente Pourtraicts de Menuiserie* by Hans Vredeman de Vries. This was published c.1580, so was not likely to be a direct influence but suggests that triangular-shaped headboards were being made in Europe at the time.

Unusually for an English bed design of this period, the bed appears to have been conceived without a timber panelled tester, with the likelihood that a tester-cloth, supported on an iron frame, took its place. It may have been similar to a design by Johann Jakob Ebelmann, in *Architectura*, published 1598/99. Apart from the basic form of the bed, the finely carved detail was also inspired by European printed designs, for example the work of Jacques Androuet du Cerceau.



Print of a bed with a triangular headboard from *Differente Pourtraicts de Menuiserie* by Hans Vredeman de Vries



Canopy bed design by Johann Jakob Ebelmann

Jacques Androuet du Cerceau's design for a decorative canopy

Similar works at Sizergh Castle

There are three beds still at Sizergh Castle that have similar design features, including a walnut, ash and elm tester bed made ca. 1560; an inlaid bed made for the Castle's Inlaid Chamber made ca. 1580; and a third bed with a similar headboard made ca. 1570.

Additional architectural fittings at Sizergh have similar carved elements, such as the screen in the entrance hall, which has similar columns to those on the bed's headboard. The Castle also has four overmantels that have related designs.

Who made the bedstead?

Tradition has it that the furniture at Sizergh was made by Flemish craftsmen, although there is a possibility that there was in fact a 'workshop' on site at the Castle staffed by English craftsmen. Anthony Wells-Cole believes some of the other works at Sizergh were made at a workshop in Newcastle, so that is another potential source.

The bedstead is believed to be the work of Flemish craftsmen

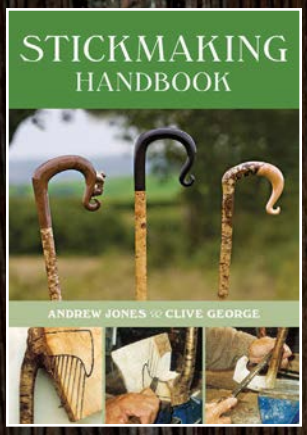
Oak Interior sales take place twice a year at Bonhams. For more details, visit: www.bonhams.com

SIZERGH CASTLE

Sizergh Castle now belongs to the National Trust. For more information about the Castle and for details about visiting, see: www.nationaltrust.org.uk/sizergh

PHOTOGRAPH © KEVIN EAVES / SHUTTERSTOCK.COM

Sizergh Castle in Cumbria is open to the public



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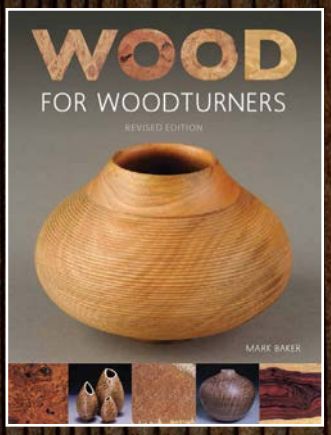

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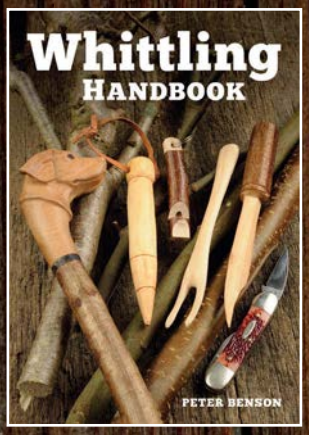

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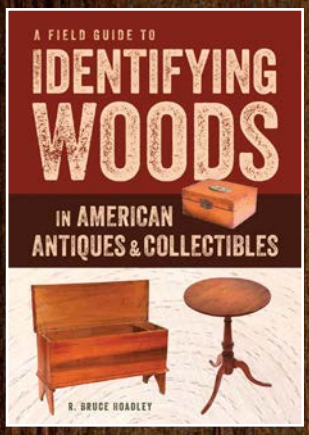

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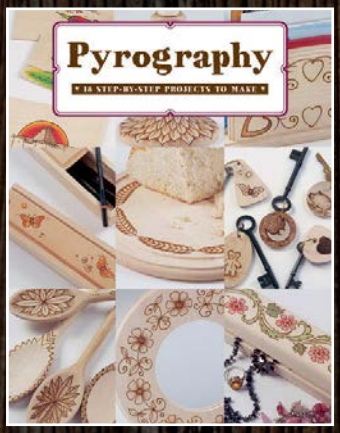

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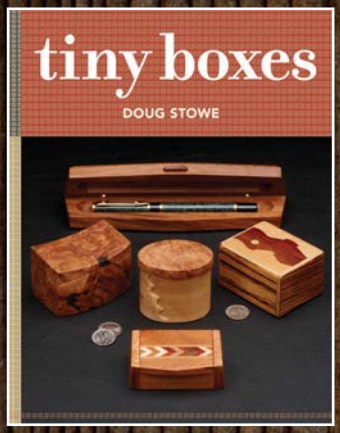

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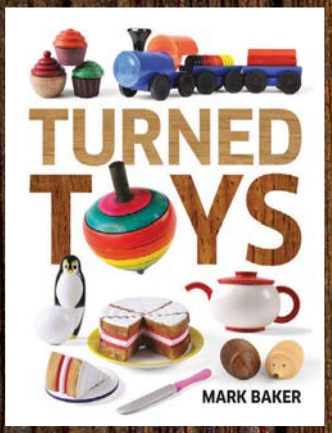

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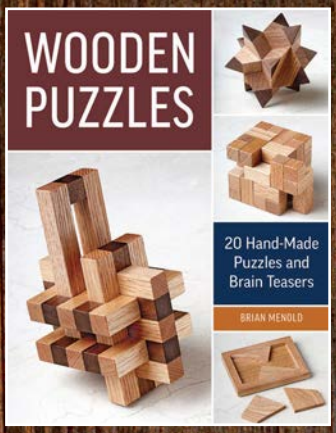

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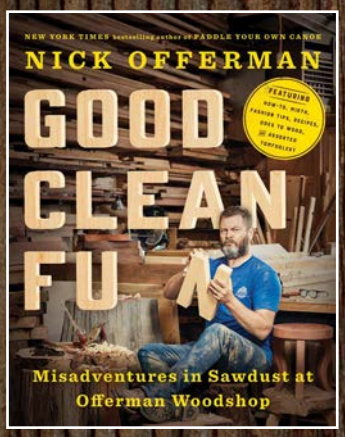

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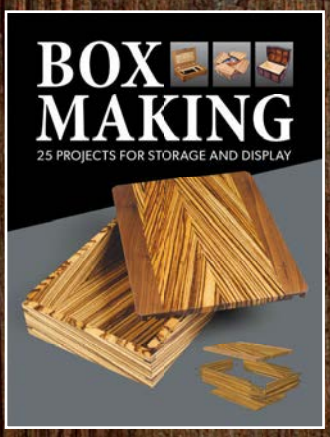

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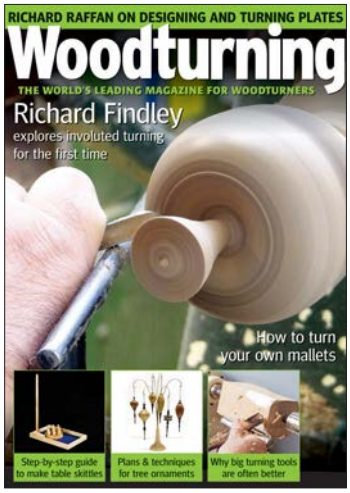

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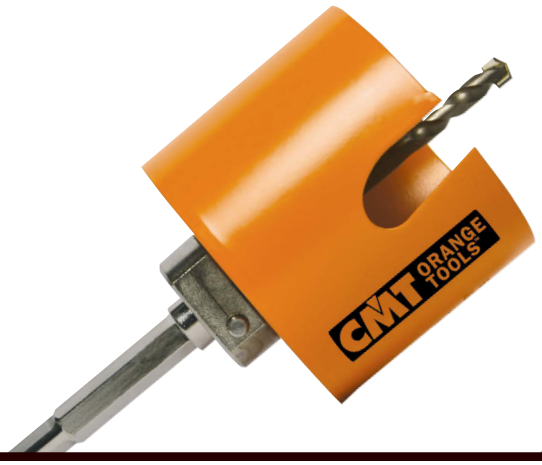

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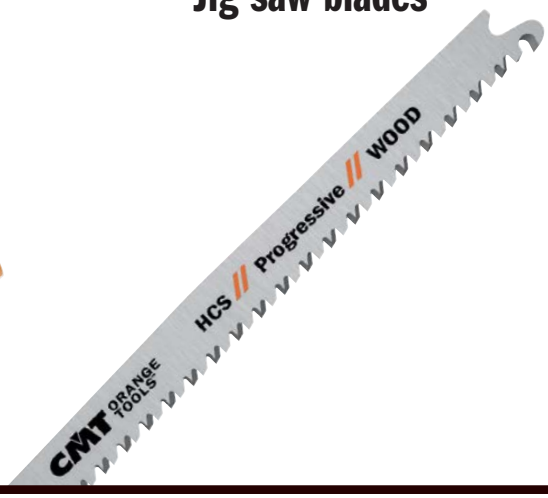

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Kit & tools

Having trouble sourcing the right tool for the job? Here's a selection of new and essential equipment for the workshop

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

Dustex

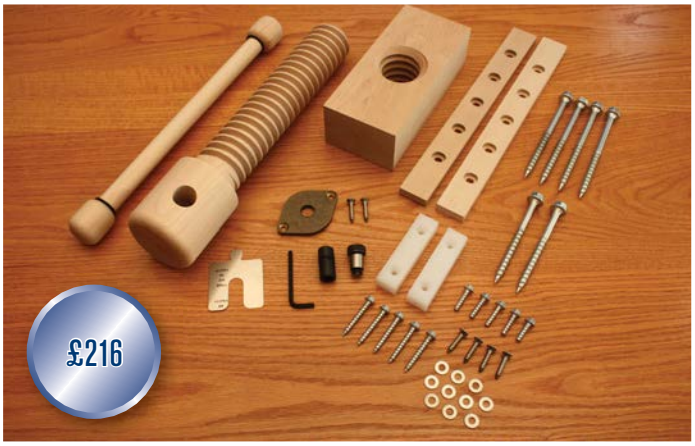
FEIN has added two new premium class, wet and dry extractors to its range. Both are powerful and for the first time are equipped with automatic filter cleaning. The Dustex 35 MX AC is an M Class approved extractor while the Dustex 35 LX AC is rated for L-classification extraction. Both machines come with a large number of special equipment features and extensive accessories making the tools suitable for multiple professional tasks on site or in the workshop. The innovative new AutoClean technology reverses the airflow every 15 seconds, blowing away any fine dust that may have settled in the filter back into the secondary deposable bag. Fitting the extractors with AutoClean allows for a consistently high suction force, meaning even large volumes of hazardous dust can be removed. Both dust extractors will work across wet and dry applications, reliably absorbing fine dusts and liquids.

From £473

Battery-powered staplers

Makita's new compact, lightweight cordless staplers offer a host of advanced technical features. The DST112 is powered by the Makita 18v Lithium-ion battery while the DST111 model is a 14.4v version, which will deliver 5000 shots from the 3.0Ah battery whereas the 18v 3.0Ah version generates 6000 shots. Both staplers have magazine capacity for 150 staples and have selectable firing modes which offer the choice between bump firing and trigger sequential control.

£194.40



£216

Lake Erie screw kits

Available from Classic Hand Tools in the UK, the Lake Erie Basic Wood Vice Screw Kit includes one hard maple wood vice screw and one hard maple wood nut. It can be used for leg vices, twin screw vices, face vices and tail vices. The Wood Wagon Vice Screw Premium Kit contains one hard maple wood wagon vice screw, one hard maple wood nut, one brass connector plate with steel screw kit, one shoulder bolt and anchor and one hard maple handle. Produced on a CNC router, the quality of these threads surpass any other wooden screw thread we've seen before. The maple billets are rested between various machine processes to minimise the effects of wood movement caused by the machining and set a new standard for wooden screw threads.

From £249.60

Clifton bench planes

Clifton bench planes are both highly attractive and functional tools that are made from the finest materials. The frog and frog seating in the body of these planes are based on the bedrock design, first seen on early Stanley planes, meaning the seating pad in the body is full face and fully machined to mate with an equivalent full face and fully machined underside of the frog. The result is absolute stability of the frog, providing a firm and solid surface for the cutting iron, which again rests on a fully machined upper side of the frog. When allied to the extra thick Clifton cutting iron and cap iron, the design probably has the most rigid and effective clamping mechanism of any Bench plane available. The accuracy of the mechanism allows for the cutting iron to be advanced to give a virtually 'zero' mouth opening, allowing the finest shavings to be taken even on the most difficult of timbers. The bedrock design uniquely allows the mouth width to be adjusted without dismantling the frog and iron assembly.

Clifton 550 concave spokeshave

Clifton's spokeshaves are made from virtually unbreakable spheridal graphite/malleable iron. The concave version may be used instead of a draw knife to apply a softer chamfer on the edge of square timber, but is more often used as a delicate tool by furniture makers to shape curves such as those on a cabriole leg or for blending in curved surfaces that are often too subtle for a machine to complete, such as posts and stair rails. The single srew adjuster and metal cap iron means the tool can either be set up to take the finest of shavings or for quick removal of material. The weight and mass of the steel body make it a very different experience to that of a wooden bodied 'shave and requires a lot less fetling over time.

Tapered dovetail spline system

The tapered dovetail spline system provides a quick and easy way to creates a unique, tapered dovetail groove that accommodates a matching tapered dovetail spline. This system, only available from Infinity Cutting Tools, is perfect for small projects like jewellery boxes to larger projects such as blanket chests and fine cabinetry. It consists of an extruded, anodised aluminium router jig for creating tapered dovetail grooves in boxes. The router jig can be used with a hand-held router or at the router table. The router is guided by a brass guide bushing between the tapered fingers of the router jig. Also included with the system is a CNC-machined, HDPE tablesaw sled. This sled is designed to cut splines at a precise taper to create a gap-free joint. The tablesaw sled includes a replaceable zero-clearance insert for chip-free cuts. The adjustable stop block allows the user to make repeatable cuts with accuracy to create perfect-fitting dovetail splines.

FlexiWork jackets

Snickers' FlexiWork jackets are designed for ultimate flexibility and freedom of movement. The range includes stretch jackets, hoodies and fleeces, plus a brand-new stretch waterproof shell jacket, which is a three-layer waterproof jacket with taped seams to give great protection from the weather. Its engineered fit comes with pre-bent sleeves and mechanical stretch that combine to ensure optimal freedom of movement.

Veritas Trammel Points

These stainless steel, narrow-bodied trammels can be set to reproduce radii as little as 15mm. The removable points score clear lines on any wood, and are also effective on aluminium, brass, bronze and mild steel. With the points removed, the trammel bodies double as square gauges, clamping onto a square to make repetitive angle marking easy. A pencil tip, available separately, can replace either of the stainless-steel points.

Tormek rotating base and mat

The Tormek RB-180 Rotating Base and RM-533 Rubber Mat have teamed up to become one kit, enabling users to carry out the easiest and cleanest sharpening with any Tormek sharpening system. The base enables you to rotate the machine easily through 180° and lock it with complete stability. It makes it effortless to alternate between sharpening and honing. The rubber mat provides a waterproof, non-slip surface.

Contacts

Battery-powered staplers
Contact: Makita
Web: www.makitauk.com

Clifton 550 concave spokeshave
Contact: Thomas Flinn & Co.
Web: www.flinn-garlick-saws.co.uk

Clifton bench planes
Contact: Thomas Flinn & Co.
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Dustex
Contact: FEIN
Web: fein.com/en_uk/

FlexiWork jackets
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Web: www.snickersworkwear.co.uk

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Web: www.classichandtools.com

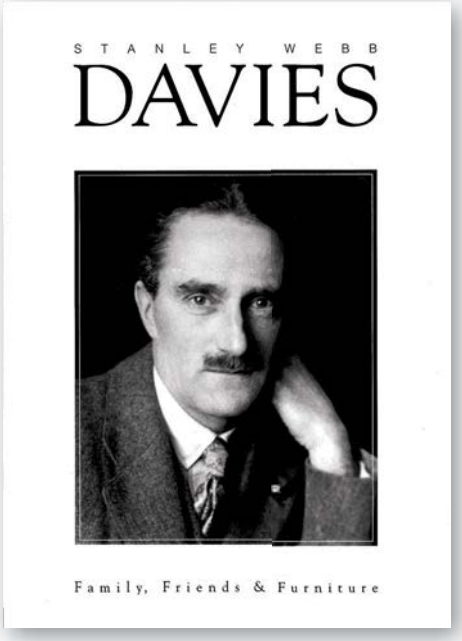
Tapered dovetail spline system
Contact: Infinity Tools
Web: www.infinitytools.com

Tormek rotating base and mat
Contact: Axminster Tools & Machinery
Web: www.axminster.co.uk

Veritas Trammel Points
Contact: Lee Valley/Veritas
Web: www.leevalley.com

Workshop library

We review two books for you: *Stanley Webb Davies* and *Laminated Wood Art Made Easy*



Stanley Webb Davies: Family, Friends & Furniture

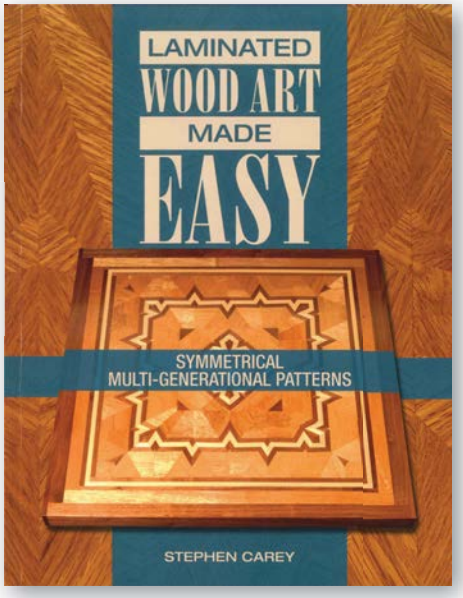
by Ian Naylor & Harold Heys

Stanley Webb Davies is not the most widely known English Arts & Crafts furniture maker. Apart from a select few such as Edward Barnsley and Ernest Gimson we tend to herd these particular craftsmen into more generic groups such as the Cotswolds and Lakes schools. Davies was from the latter community although he did not originally come from the Lake District. Highly motivated and principled there was a tradition in the family for travel and missionary work in some of the most inhospitable and often hostile places on earth at the time; Madagascar and China for example. Underpinning the family's wealth and therefore making such lifestyle choices possible were a succession of shrewd businessmen building up a small fortune from the textile industry in the north of England. While lesser men lost everything during the Great War and the years that followed, the Davies family prospered. Living and working by their Quaker principles they fostered a small army of loyal, hard working staff to produce their goods in return for a fair wage and good working conditions.

While there is information in this book alluding to Davies' expertise in woodworking, the main focus is very much on him as a man and on the personal lives of his family and friends. It's a direction that took me a while to accept as being in any way necessary but as the story unfolds it paints a vivid image of a man with principles every bit as robust as his furniture. There's no better way to understand design and craftsmanship than within the context of when it was created. If you have the slightest interest in genealogy you'll enjoy this book. I did and wish there were more like it.

Derek Jones

Published by Naylor Publishing
ISBN: 9780995465503
188 pages £15.00



Laminated Wood Art Made Easy

by Stephen Carey

Laminated wood art is the process of cutting and gluing contrasting woods numerous times to create a repeating design. It is a technique commonly used to make bandings or herringbone purfling, such as those found in fine furniture or instrument making. This is the second book in Stephen Carey's series on laminated wood art (the first title focuses on striped patterns). This book takes this concept and develops it further to explore symmetrical multi-generational patterns on a larger scale.

In the introduction Stephen states that he has written for the hobbyist, recreational woodworker and he emphasises the speed and fun of producing items using this style of woodworking. Alarm bells ring when a book includes 'made easy' in the title since any technique, however simplified, will still need to be practised and learned, and arguably will be less satisfying if it is too easy anyway. In the case of laminated wood art the process is, in essence, cut, glue, cut, repeat so the method itself is relatively easy. The challenge comes in making effective wood choices and pattern designs and then executing them with precision to ensure a crisp result.

Stephen provides details on how to produce various designs such as stars and tessellations as well as giving useful pointers on how to design from scratch. The sheer quantity of precision cuts needed for this style of woodwork lends itself to a production line mentality and there is a section on jigs and machine tools. There is also advice about combining different types of wood, grain orientation and the effects of moisture on wood.

Laminated wood art is a particular design style that seems to polarise opinion amongst woodworkers and this book is unlikely to win over those who are sceptical about the technique. However, it does provide some interesting avenues to explore for the tooled-up woodworker.

Susan Chillcott

Published by Schiffer Publishing
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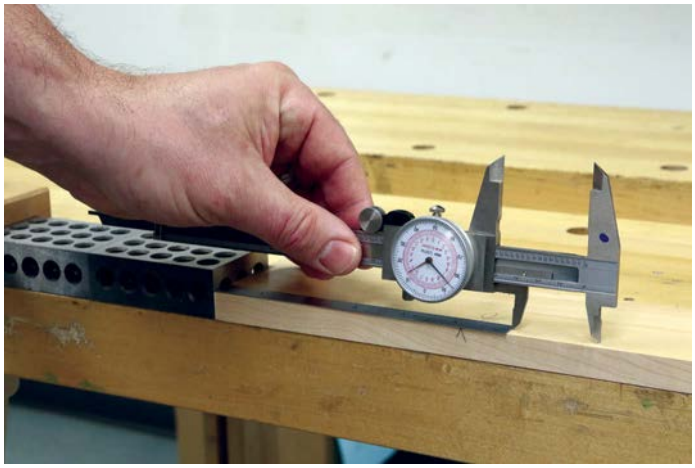
END OF AN ERA

Jim Hooker reviews the Holtey 984; the magnum opus of a legendary plane maker

TOOL TECH

Bow feather board on test



THE WOOD AWARDS

Winners list

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Breaking the mould and not tradition

PROFILE

Kevin Glen-Drake: Making tools that make a difference

FACTORING OUT THE ERRORS

A simple approach for marking, measuring and layout

Advertisers Index

Shop talk:
Nathan Day

Nathan Day trained as a cabinetmaker in England but now lives and works in Australia. His deceptively simple designs scream modernity with a respectful nod to the past

Tell us about your most memorable 'eureka' moment.
In 2003 my friend and I rocked up unannounced at John Makepeace's house in Dorset. He was kind enough to give us the full tour, and I got to see his work in real life for the first time. I asked a lot of questions and when I found out that there was steel reinforcing in a lot of his joins, which allowed him to go thin and retain strength, I guess that was the 'eureka' moment. It kind of went like this:
Me: "How do you do that?"
Makepeace: "Steel!"
Me: "Steeeel?"
Makepeace: "That's right – steel!"

What's the tool you can't do without?
My Festool OF1400 router. Most of the jigs in the workshop have been designed around this router.

What's the piece of furniture you wished you'd designed?
Mattias Pliessnig's benches. Perfect mix of contemporary design and traditional craft.

What's on your bench right now?
Same as always. Tools and furniture components, computer, job sheets and drawings.

What are you making next?
We have a very busy eight weeks leading up to Christmas. We have two Vista ST tables, a Pieman table, two custom ST1010 tables for a winery cellar door in Margaret River, an Origami table, a large oak table top and some small occasional tables for a commercial project. All of these will happen simultaneously and all need to be delivered before the end of 2016.

Suggest a museum that everyone should go to and why.
MONA in Hobart, Tasmania. Because you get to travel to Tasmania, which is as isolated and remote as it is beautiful. (Please note I haven't been to MONA, but it's on my to do list.)

Recommend a book on furniture making and why.
The latest book I bought was George Ingham's limited-edition hardcover. It's a beautiful book with great imagery. His influence is evident in many of Australia's best designer-makers. For something more technical, *Cutting Edge Cabinetmaking* by Robert Ingham. Fair to say those two have/will leave a lasting legacy.

Do you have any flat-pack in your home?
We've had some. Rubbish sets of drawers that started at home, progressed to the workshop and ended their lives at the tip.

All about Nathan

Greatest success to date.
Two most notable jobs: 33 Wonton tables for the Apple head office in Sydney in 2015, and a 7m boardroom table for Woods Bagot's Perth office in 2016. Both were a real test on the capacity of the workshop, in different ways.

Any other makers/craftsmen in the family past or present?
My grandpa was a woodworker. He made all of us kids desks, go-carts, etc. My dad was a panel beater and specialised in car restoration.

Tell us about the English/Australian connection.
I was a big Makepeace fan, so I wanted to train in England. It took years to organise, but once I got the visa, the rest was easy.

Who did you work with/under in the UK?
I did a 12-month traineeship at the Edward Barnsley workshop in 2006/2007. I was the first Australian to train there and still feel very privileged to have had the opportunity. They are still a big influence on the way I work and the level of detail I strive for in my furniture.

Tell us a little bit about your home life.
I live in Dunsborough, Western Australia, a busy coastal surf town. I met my partner Savanna in high school and we have two beautiful daughters aged three and six. We just rescued a dog from the local shelter called Maxwell, he's a Lowchen. I stay up late and rarely get to sleep in. I'd like to get better at camping, so we can see more of this beautiful state that we live in. I still consider myself to be a surfer, but couldn't remember where my wetsuit was last time I went, so maybe not.

I actually have a nice little black Ikea footstool in the workshop. It's used mainly for reaching the top of the extractor. We also have an Ikea bed, but that's it. The rest is my furniture, some vintage pieces left to me by a great aunt and then some nice new Australian-made couches.

How do you design, on paper, on screen or at the bench?
Mostly on the screen using SketchUp. It's basic and the renders are crude, but I generally use it just as a way to show an overall aesthetic. The more critical details are relayed to clients through actual mockups and samples.

What do you collect?
I used to collect things as a kid. Fossils, rocks, shells, etc. Now I seem to be collecting machinery. It's good because I can justify it to my life/business partner Savanna. "No, I need it for the business!" But to be honest, I only collect things that improve the efficiency of the workshop.

What haven't you got time for?
Doing work for myself.

What comes first, the design or the technique?
Always the design. I think woodworking in general is too much about showing off your woodworking skills. This results in very fussy, very busy pieces. I like to keep the design clean and light and let the timber speak for itself as much as possible. We have a very good pool of techniques to draw from and most of the time the simple aesthetic masks a much more technical construction. But it's not in your face and we don't advertise it.

Are you comfortable working to someone else's design?
We don't produce other people's designs. It's a rule. We only produce our own original designs. If someone comes to us with something they want specifically made, I send them elsewhere.

What else would you make if it wasn't furniture?
I honestly only ever wanted to be a furniture maker. I guess the other thing I would like to start making, if I could find the time, would be tools. Handmade planes, gauges, etc.

Do you see yourself as an artist or a craftsman?
Definitely a craftsman.

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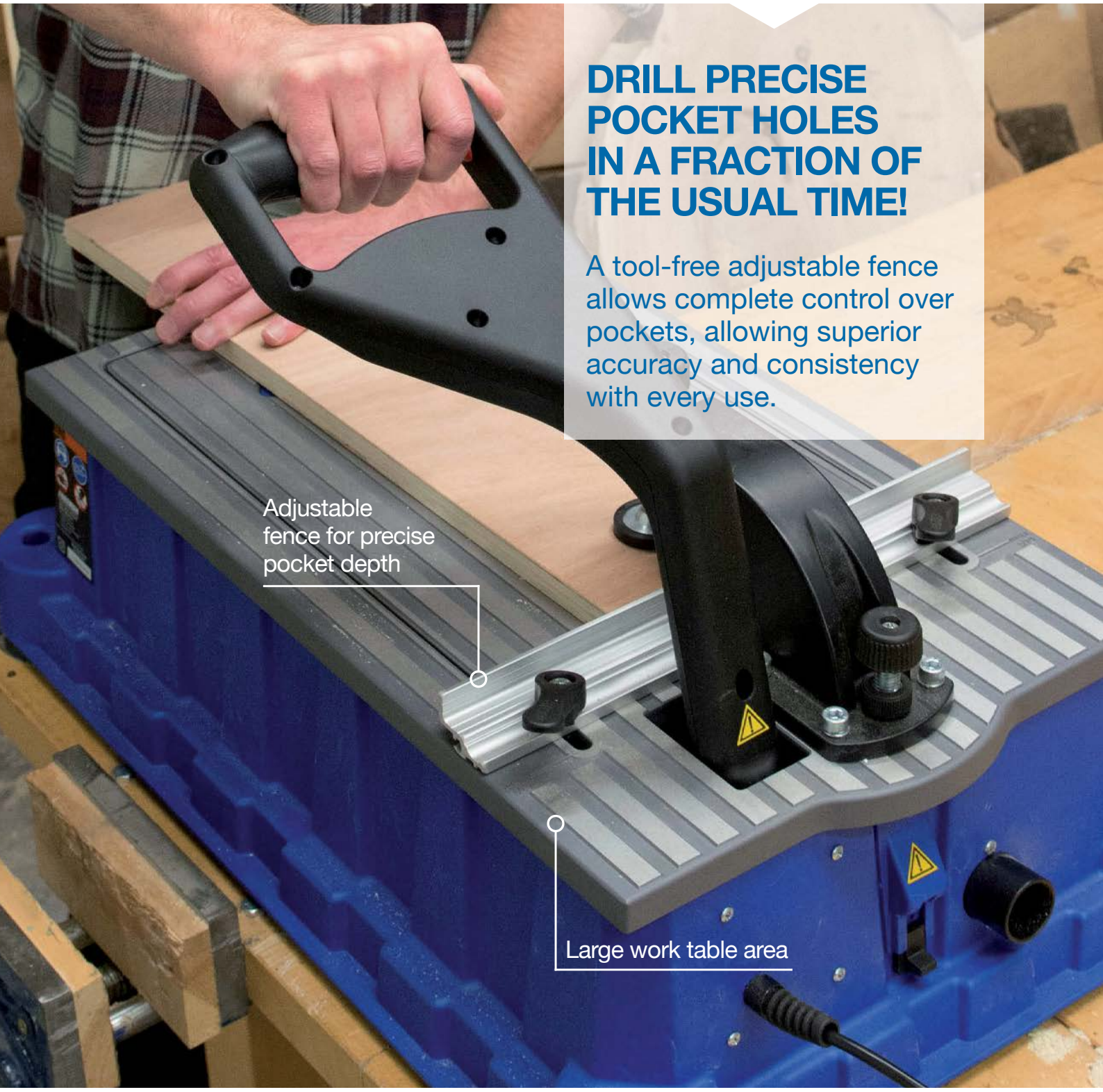

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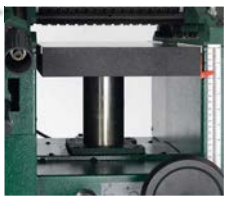
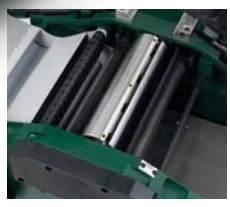


Central Column
The thicknessing table is supported by a sturdy central column for superior stability and easy rise and fall adjustment.



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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.

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"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

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