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Welcome to...

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With some of the warmest workshop temperatures I've ever experienced now just a distant memory it's time to get back to making and tackling the mountain of work that's been accumulating over the summer. Gauges, shooting boards and honing guides are all on back order thanks to a glorious July and August that made hand tool work a little heavy going at times. We're cooling things down in this issue with two very different versions of the same piece. The first is a striking take on an original hunt table by Israel Martin from Spain, the other a classic Danish modern influenced media stand by Richard Wile from Nova Scotia. Staying true to their origins in form and function, both examples are full of techniques that combine old and new methods of construction for a best of both worlds build.

Pocket hole screw joinery isn't that difficult if you have the jig to do them and as I've discovered on more than one occasion they can be a life saver. A tad expensive if they sit around gathering dust most of the time but a life saver none the less. Before there were bright orange and blue plastic jigs and dedicated screws with dedicated driver bits that need a dedicated drill bit, how did you fasten things together with a screw and not leave a trace? Or to put it another way, how would you edge joint two wide boards together using hide glue and not have to wait for the glue to dry before you can work on it? Secret slot screws that's how. I'm not sure how, when or where this technique originated from or why it's fallen out of fashion but it's about time it made a return to the repertoire of popular joints if only to prove that you can in fact have too many clamps. Learn the secret and a bunch of other stuff on page 26. In the same vein we've tracked down an extract from *Woodworking with Hand Tools* from Taunton Press (page 48) that could also prevent you and your hard earned from becoming separated prematurely with plans and advice for building four bench jigs for use with your hand planes. On page 56 Steve Cashmore is wrapping up his series on using the WoodRat to demonstrate how to cut two types of dovetail to complete his box. All in all I think it's safe to say we've saved you a small fortune this month and it's all part of the service.

Derek Jones

Derek Jones
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PHOTOGRAPH BY DEREK JONES/GMC PUBLICATIONS

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



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

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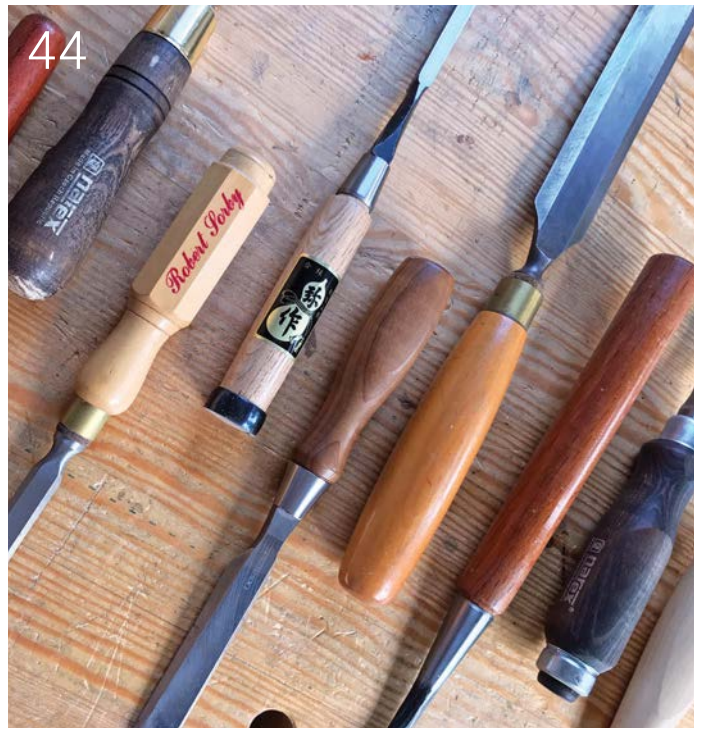
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Meet the contributors



Steve Cashmore

Steve is a radio communications engineer who graduated from Plymouth University in 1992. During his engineering apprenticeship prior to university he gained metalworking skills in the machine shop (City & Guilds). In 1997 he became interested in furniture-making and woodturning as a hobby, and has since attended various short courses with Peter Sefton, David Savage, Michael Scott, Adrian Marks, Colwin Way and West Dean College.

Instagram: @steveswoodcave

YouTube: www.youtube.com/c/StevesWoodCave



Gary Rogowski

Gary is a furniture maker, designer, teacher and author. He has been writing about woodworking since 1988 with dozens of articles, videos and several books on joinery published. *The Complete Illustrated Guide to Joinery* is in its 20th printing for Taunton Press. He was a Contributing Editor at *Fine Woodworking Magazine* for 15 years. In 1997 he founded The Northwest Woodworking Studio, A School for Woodworkers, in Portland, Oregon. In 2015 he started a non-profit to mentor high school students at the bench called WIN Oregon. His latest book is called *Handmade, Creative Focus in the Age of Distraction*, by Linden Publishing.

Web: www.northwestwoodworking.com



Israel Martin

Israel graduated as a forestry engineer in Madrid in 2000, but he decided to change his career. At first he was self-taught and then he took some classes about hand tools with a Spanish artisan and with master craftsman Garrett Hack to improve his furniture-making skills. He makes every piece of furniture using hand tools exclusively and also makes tools for his work or for other artisans. Together with other Spanish craftsmen he has been organising the Spanish woodworking event, LIGNORUM, for the past three years.

Web: www.lacabraenlaescalera.com



Richard Wile

Richard lives in Nova Scotia, Canada; he is an accomplished IT professional and has been an amateur woodworker for a lifetime. He has tried his hand at many woodworking genres throughout his years in the craft. His personal take on traditional designs is heavily influenced by his global travels and has become a trademark of his work. Using a variety of hand and machine techniques, Richard has crafted many unique furniture pieces, hand tools, turnings, miniatures, and acoustic stringed instruments from his basement workshop.

Web: richard-wile.blogspot.com

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CHERRY SIDEBOARD made with hand tools



Israel Martin describes the joinery techniques used on his sideboard

The first time I saw Garrett Hack's huntboard, I knew I wanted to make something similar. It's solid yet elegant and although large by most people's standards, is still suitable for making using only hand tools. The use of sliding dovetails is the key to making

it easy to construct as there is no need for biscuits, dowels or Dominos. In keeping with the hand tool made theme, I decided to add some Gimson-inspired details around the perimeter of the the door and drawer openings with some ebony and holly edge inlays.



PHOTOGRAPHS BY ISRAEL MARTIN

Making mitred mortises and tenons

I like to cut this joint by starting with the mortises. First I laid them out on the legs before shaping them. The aprons are set back from the face of the legs by 3mm. The mortises were positioned as close to the outside edge of each leg as possible to keep them long, therefore increasing their strength. I drilled all the mortises with a hand brace and followed on by chiselling to the knife line, checking at regular intervals with a combination square.

I completed all the mortises on one side of the leg first, and then the ones on the other side. In order to prevent splitting the wood inside the mortise, I used a small piece of wood the same size as the previous mortise when chiselling the ones on the other side. That way the two mortises intersect in the middle of the leg without any breakout.

Once that was done I started making the tenons. I marked them out and then sawed the cheeks just shy of the knife line before paring them to their finished dimension. The length of each tenon should be the same depth of the mortise. I used a small block plane to create the mitres. The aim is to get the mitres so that they almost touch inside the mortises with a clearance of just 0.5mm or so.



Mitred and haunched mortise and tenons provide a very strong joint between the legs and the aprons



Wooden screw clamps are ideal for supporting the workpiece and help to prevent splitting



Checking the mortises with the combination square



Making the mitre on the tenon using the small block plane

Tapered sliding dovetails

I used this joint to join the lower shelf with the two divisions that separate the drawers and the openings for the doors. The main benefits of using this joint are that they are incredibly strong and self-squaring if properly done. They are also fast to make and allow the material to expand or contract.

I decided the easiest way for me to make the male part was with a dovetail plane. First I marked where the shoulders would be using the combination square and a marking knife to prevent splitting fibres as I used the plane. The plane is set up with the nicker running in the knife line. Then I started passing the plane until there was only a small corner at the end. I repeated this on the other side, then did the same on the other board creating just one side of the dovetail.

In order to make the sliding dovetail tapered, I divided the length of the dovetail into four sections, then carried out passes that increase in length by a section span each time. The final pass travels through all four sections. This was done on only one side of the male part. It is important to mark the taper on the correct edge of the female part to avoid a mistake.

To mark this out, I used callipers to capture the thinnest part of the male section and transferred it onto the board that would be the shelf. Then with a square and marking knife I made lines across the board. I used a dovetail marker to capture the angle and make marks to the depth of the male part of the joint. After sawing along the knife line I removed the waste with a router plane to



A wooden dovetail plane is used to create the male part of the sliding dovetail

within about 1mm of the final depth creating a straight walled dado. I used the side rebate plane to convert the straight walls into the dovetail shape.

As a result of using this plane and given that the blade protrudes just a fraction from the side of the body, I reached the correct depth with nice crisp corners. To create the taper I repeated the same procedure of four passes of increasing length with the side rabbet plane instead. The final stage in

creating these joints was to remove the last 1mm of waste from the bottom of the dado down the middle with a small router plane.

It's useful not to achieve an exact tight fit when testing the joint dry but instead creep up to what you think will be the finished article when you finally bring the components together with glue. Concentrate on localised areas with the dovetail plane to make fine adjustments and not full length passes as this could remove too much material at one time.



Keep the male panel over width until a good fit has been established. Apply masking tape either side of the dado to prevent the router plane from marking the surface



Testing the sliding dovetail



The divisions are in their place on the shelf and adjusted for square

Ebony mouldings

Bead mouldings often make for an interesting detail on all manner of furniture components to either highlight a junction or conceal a joint. In this case I made ebony mouldings to add to the inside edge of the door frames. The mouldings were shaped using a scratch stock and then glued to the frame but not the doors.



Adding elegant details

To introduce a little finesse to the the legs I decided to taper them on all four sides, being careful not to make them too thin. Thin straight legs can cause tall pieces to wobble if you're not careful especially without stretchers or a similar undercarriage to brace them. If you're in any doubt consider just tapering the inside edges and perhaps even adding a little rake and splay for stability. I decided to add some colour to the leg ends with cocobolo sabot feet offset with a line of tiger maple inlay.

First I planed some 5mm cocobolo boards, then sawed them in two with the panel saw before reducing them further to approximately 2mm thick. I then cut the first piece (for the front) a little bit wider than the width of the leg. The two sides will be covered by the overlap and the rear piece will slot in between the side pieces in an attempt to conceal as many of the joints as possible.

The bulk of the waste was removed using a router plane, leaving a small section at the end for support, which was later removed with a chisel. After the cocobolo had been wrapped around the leg I set a sliding bevel to the angle of the taper and marked out for the maple inlay. A mini router plane was used to excavate a channel all the way round the leg.



Planing the thin cocobolo boards



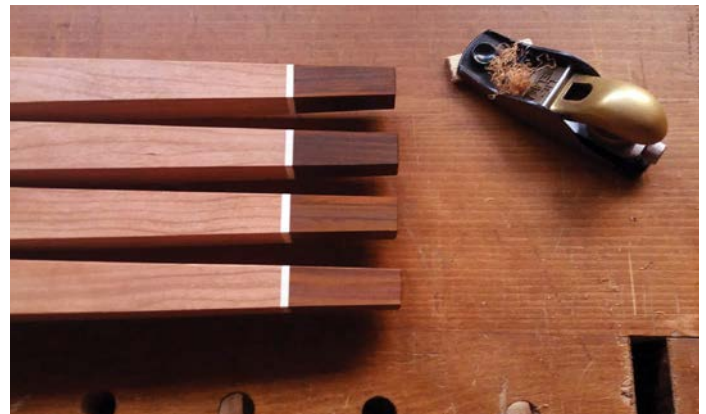
Using the router plane to make space for the cocobolo sabot feet



Ready to add the maple strip



Planing flush the 'socks' for the legs

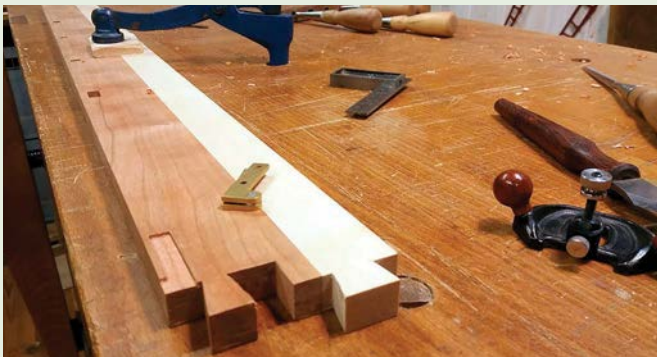


Chamfering the legs

Installing off-set hinges

The only challenge, I find, in installing off-set hinges is that you have to do it before all the pieces have been glued up. I used my Veritas dual marking gauge to mark the hinges' width and depth. Then I removed a little bit of waste with

a chisel and finished the job with a mini router to get the exact depth. To install them in the doors, the challenge is that you have to work on end grain, so your chisels and router need to be very sharp.



Installing knife hinges on the upper apron before adding the edge inlay



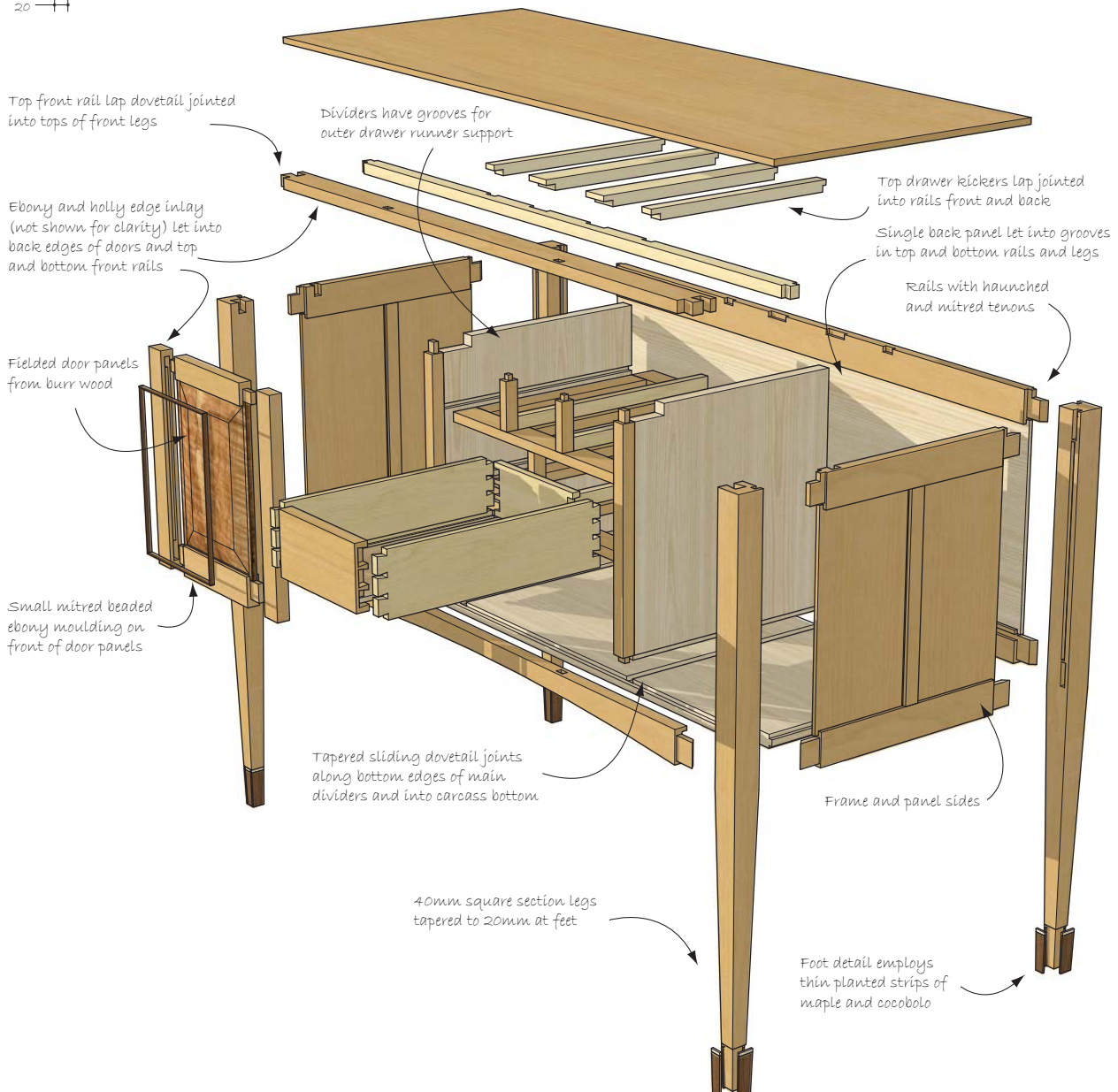
Gluing ebony and holly dots with the knife hinge fixed



Knife hinge in the lower front apron. Pre-drilling with a steel screw



Knife hinge mounted on door and apron



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News & Events

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

Jack Pawsey wins top award at Somerset Guild's 8th Annual Furniture Prize

Jack Pawsey's exceptional ATEN – Smoked Eucalyptus Credenza was selected by Judges, Tom Kealy and Martin Lane, as winner of the First Prize in the full-time category and overall winner of the Somerset Guild of Craftsmen's eighth annual Furniture Prize. This makes it the third year running that a student from David Savage's 'Rowden Atelier' School of Fine Furniture has won the top prize.

The Somerset Guild's Furniture Prize, which is sponsored by Axminster Power Tools, is an exhibition that is exclusively available to furniture-making students and/or apprentices, and this year the Exhibition attracted entries from five schools and colleges, including Cornwall College, City of Bristol College, Bridgwater & Taunton College, Williams & Cleal School of Furniture and David Savage's 'Rowden Atelier' School of Fine Furniture.

The First Prize in the part-time category was won by Marten Rostel, from City of Bristol College, with his Whisky Cabinet, and the People's Choice Prize, voted for by visitors to the Gallery, was won by Jamie Gill from Cornwall College with a magnificent Viking ship inspired chair.

The judges also selected Alex Curry's Cherry Cabinet as winner of the second prize in the full-time category, Will Appleby's Glass-fronted Bookcase for the second prize in the part-time category and two commendations, one for Ben Penfold's Webbing Easy Chair and the other for a trinket box made by Robert Searle.

The Somerset Guild's Furniture Prize is still growing and in future years is aiming to attract students from schools and colleges beyond its immediate location in the south west.

Look out for the Somerset Guild Furniture Prize gallery in next month's issue.

Contact: Somerset Guild of Craftsmen
Web: www.somersetguild.co.uk



Jack Pawsey's 'ATEN' Credenza – Overall Winner



The People's Choice – Jamie Gill's Viking ship inspired chair



First Prize in the part-time category was won by Marten Rostel with his Whisky Cabinet

PHOTOGRAPHS COURTESY OF THE SOMERSET GUILD OF CRAFTSMEN

Red Dot Design Award winners

The William chair by Mark Gabbertas was among the Product Design winners at the Red Dot Design awards in July. William was developed upon the idea that outdoor furniture can have the same elegance as interior furniture. Made from 3D-moulded teak components, its seat achieves an ergonomically well thought-out profile. Instead of screw connections, a barely visible fastening system was developed especially for this chair. The chair is manufactured by Gloster Furniture GmbH, in Lüneburg, Germany.

Other furniture pieces to receive awards include Ivini's Kona range, Gloster Furniture's Atmosphere chaise and Nardi Spa's Net Relax outdoor armchair.

Contact: Red Dot Design Awards
Web: www.red-dot.org

The William lounge
chair, designed by
Gabbertas Studio

PHOTOGRAPH COURTESY OF RED DOT DESIGN AWARDS



FIESTA announces partnership with the Apprenticeship Management Group

The Furniture and Interiors Education, Skills and Training Alliance (FIESTA) has entered into an agreement with the Apprenticeship Management Group to launch a new initiative, Furniture and Interiors Skills Plus, that will support furnishing businesses of all sizes to recruit and manage apprentices.

Furniture and Interiors Skills Plus was established in July this year and will offer businesses a specialist apprentice recruitment service, Apprentice Training Agency (ATA) and Levy Management Company.

Gary Baker, chairman of FIESTA, said: 'Furniture and Interiors Skills Plus will be a pathway for employers to

recruit and develop the skills of the next generation. Companies that sign up to Furniture and Interiors Skills Plus will receive advice and guidance on the best training that is available to the sector. Through Furniture and Interiors Skills Plus, micro and SME non-levy paying employers can outsource the apprenticeship management to obtain the best value for money and real-time monitoring from the apprentice levy digital accounts.'

John Henry, director at the Apprenticeship Management Group, said: 'Furniture and Interiors Skills Plus will enable employers to fill their skills gaps and look to establish training and progression plans both now and well into the future. Young people

entering the furniture and interiors sector and existing employees wishing to up-skill are looking for learning opportunities and career progression, which is precisely what Furniture and Interiors Skills Plus will help them achieve. We urge all companies large or small to take advantage of Furniture and Interiors Skills Plus and I am confident that they will reap the benefits in a very short time. Business leaders wish to focus on their core business opportunities and do not need to spend their valuable time and expense on seeking to access opportunities in training that we will do for them.'

Contact: FIESTA
Web: www.fiestalearning.com

Furniture designs shortlisted for the Wood Awards 2018



The Black Trine Variations by John Makepeace

Variations chairs by John Makepeace, CLEFT cabinets by Peter Marigold and Hinoki Kougei, GYC#1 cabinet by David Gates, and the Mycelium and Timber material by Sebastian Cox Ltd, were nominated for Bespoke designs; Ballot Chair by Barber & Osgerby, The Lastra Collection by Emile Jones Ltd, OVO Furniture by Foster + Partners, and Passage Table by Frank were nominated for Production Made; and Alexander Worsfold, Tom Morgan, Ellen Rose Svenningsen and Ben Smith were shortlisted for the Student Designer award. The nominated designs will be showcased at the London Design Fair from 20 to 23 September. The awards ceremony will take place on 20 November.

Contact: The Wood Awards
Web: woodawards.com

The Wood Awards 2018 shortlist was announced on 25 July. In the Furniture & Product categories, the Black Trine

Spinks Springs wins Export Award

West Yorkshire manufacturer Spinks Springs, a leading supplier of unique, micro pocket springs, has won The Furniture Makers' Company's third annual Export Award. Spinks Springs has developed a worldwide export business through its innovative Posturfil and HD micro-springs that act as a comfort layer and replace foam and other filling materials in products such as beds, footwear, upholstery and office furniture. Spinks Springs' export business has grown by 500% since 2015, with export sales in 2017/18 reaching £4.89m and now accounting for 17% of its sales.

Contact: Spinks Springs & The Furniture Makers' Company
Web: www.spinks-springs.com & www.furnituremakers.org.uk

Nordic Craft and Design

Manchester Art Gallery's new exhibition displays important and influential 20th- and 21st-century craft and design from Denmark, Finland, Norway and Sweden. Showcasing furniture, fashion, lighting, ceramics, glass, metalwork and jewellery, Nordic Craft and Design highlights the superb quality and creativity inherent in design from the region and features pieces from 1930 to the present day. Manchester Art Gallery's collection will be complemented with national and international loans from institutions, private collectors and Nordic design companies. Iconic pieces by Alvar Aalto, Eero Arnio, Nanna Ditzel, Saara Hoppea, Arne Jacobson, Vuokko Eskolin-Nurmesniemi and Verner Panton, will sit alongside contemporary work by Mathias Bengtsson, Peter Jensen, Anu Penttinen, Merete Rasmussen and Henrik Vibskov amongst others.

The exhibition employs a thematic approach that explores similarities and differences across different media and countries. Works will be grouped together around colour, line, shape and

nature. Within those themes, the influence of international art movements can be seen from Surrealism and Modernism to Pop art, as well as local influences, from traditional folk imagery to native flora and fauna and the importance of the landscape. A unifying approach can be found in the spirit of experimentation, expressed by pioneering designers from the early 20th century to those working today, particularly the democratic, practical and playful ethos inherent in their working philosophy of good design to enhance quality of life.

An accompanying events programme will include designer-maker talks and workshops, festive and mid-Summer events, as well as family activities.

When: until 7 July 2019

Where: Manchester Art Gallery, Mosley Street, Manchester M2 3JL

Web: manchesterartgallery.org



Coquille glass bowl designed by Paul Kedelv in 1958, made by Flysgfors, Sweden



Glove Cabinet designed by Finn Juhl in 1961, made by Onecollection, Denmark in 2018



PH Artichoke light designed by Poul Henningsen

Beazley Designs of the Year

Beazley Designs of the Year is the Design Museum's annual celebration of the most original and exciting products, concepts and designers in the world today. The exhibition showcases projects across six categories: Architecture, Digital, Fashion, Product, Graphics, and Transport.

When: 12 September 2018–6 January 2019

Where: Design Museum, 224–238

Kensington High Street, London W8 6AG

Web: designmuseum.org

London Design Fair

The London Design Fair is a four-day industry event that brings together 550 exhibitors from 36 countries, including independent designers, established brands, international country pavilions, features and exhibitions.

When: 20–23 September

Where: Old Truman Brewery, 91 Brick Lane, London E1 6QR

Web: www.londondesignfair.co.uk

The Marvellous Mechanical Museum

This exhibition at Compton Verney Art Gallery traces the history of early automata and androids alongside work by contemporary artists – much of which has never been exhibited publicly before or has been created especially for the show.

When: until 30 September

Where: Compton Verney Art Gallery & Park, Warwickshire CV35 9HZ

Web: www.comptonverney.org.uk

Bentley Woodfair

The Bentley Woodfair is a celebration of woodlands, forestry, timber and woodcrafts. There will be over 150 exhibitors, demonstrators and craftsmen.

When: 28–30 September

Where: Bentley Wildfowl & Motor Museum, Harveys Lane, Nr Halland, East Sussex BN8 5AF

Web: www.bentley.org.uk

W Exhibition: Joinery & Furniture Manufacturing

This event is the 'must see' show for manufacturers of all sizes working across a huge range of product sizes. Every two years the UK industry meets at the W Exhibition to experience the latest in machinery, components and materials with the emphasis on live demonstration of products and processes.

When: 30 September–3 October

Where: NEC, North Avenue, Marston Green, Birmingham B40 1NT

Web: www.wexhibition.co.uk

Minerva Furnisher's Guild Autumn Furniture Show

The Autumn Furniture Show is a two-day trade event showcasing an impressive UK and global portfolio across two halls.

When: 2–3 October

Where: NAEC, Stoneleigh, Stoneleigh Park, Warwickshire CV8 2LZ

Web: www.minervafurnishers.co.uk

The Decorative Antiques & Textiles Fair

The Decorative Antiques & Textiles Fair will feature 160 dealers, offering art and decorative objects ranging from the 17th century to the 1970s. The Foyer Stand at the entrance will have the theme of Japonisme, demonstrating the influence of Japanese art on European interiors.

When: 2–7 October

Where: Battersea Evolution, Battersea Park, London SW8 4NW

Web: www.decorativefair.com

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This four-day event sees over 150 contemporary artists showcasing textiles, jewellery, ceramics, glass, furniture and more. Tickets also include access to the whole of Kew Gardens.

When: 4–7 October

Where: Royal Botanic Gardens, Kew, Richmond TW9 3AB

Web: www.handmadeinbritain.co.uk/events/handmade-at-kew-2/

Rupert Senior awarded Christopher Claxton Stevens Prize for Excellence



The Furniture Makers' Company
the furnishing industry's charity

The Furniture Makers' Company is a City of London livery company and the furnishing industry's charity.
www.furnituremakers.org.uk

Bespoke furniture designer and maker Rupert Senior has been awarded the prestigious Christopher Claxton Stevens Prize by The Furniture Makers' Company for his Logmore Table.

The Bespoke Guild Mark, awarded by The Furniture Makers' Company, is the ultimate accolade for designer-makers, recognising excellence in design, materials, craftsmanship and function for exquisite pieces of furniture. The Christopher Claxton Stevens Prize is presented annually to the most outstanding design awarded a Bespoke Guild Mark in the livery year.

The Logmore Table (Bespoke Guild Mark 468) is a 12-seater dining table with a beautiful 5000 year-old bog oak table top supported on European oak legs with cast metal bosses in a bronze finish.

Richard Williams, Bespoke Guild Mark chairman (2015–17), said: 'It is an incredible table that has a strong visual aesthetic, but is also very practical with as much consideration given to the functionality. The choice of bog oak for the table not only gives a narrative of 5000 years of history but you also get such a depth of colours. Tans to browns to blacks are fanning out from the middle of the table. The clients were very complimentary of the piece and from their reaction Rupert has clearly exceeded their brief and expectations.'

Rupert was presented with the prize in May by the Lord Mayor of London, Charles Bowman at the Installation of The Furniture Makers' Company's new Master, Hayden Davies, at Mansion House, London.

The Master said: 'We are delighted to present this year's Christopher Claxton Stevens Prize to Rupert for the Logmore Table. Every piece put forward for a Bespoke Guild Mark is stringently vetted and examined by our Bespoke Guild Mark



The Logmore Table INSET: Rupert Senior (left) receiving the Christopher Claxton Stevens Prize from the Lord Mayor of London, Charles Bowman (right)

committee to ensure every aspect of it is well considered and represents the absolute pinnacle of British craftsmanship. Rupert's table not only met this strict criteria but was also selected as the most outstanding design of the year.'

Rupert Senior is one of the UK's foremost bespoke furniture designers and makers. His goal is to create unique furniture with a simplicity and honesty of form and proportion using outstanding British craftsmanship and superb materials.

Commissions undertaken by Rupert include individual pieces for the home such as dining tables, chairs, desks, cabinets, screens, games tables and truly original gifts to mark special occasions, from boxes to book and lamp stands. Recent prominent commissions include a 6-metre dining table for the permanent furniture collection at Knole House, and Transition, an ingenious

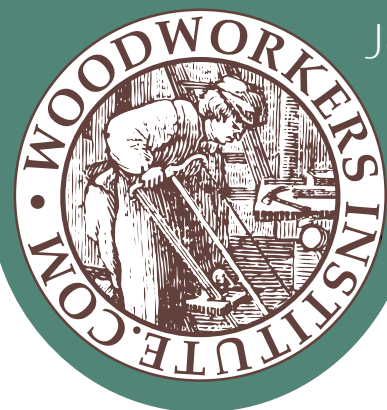


dual-function table in oak and pewter.

Rupert's interest in woodwork began at school. He trained at The Parnham School for Craftsmen in Wood before setting up in partnership as Senior and Carmichael. After a productive collaboration of some 25 years, Rupert went on to establish his own successful studio, based in Surrey.

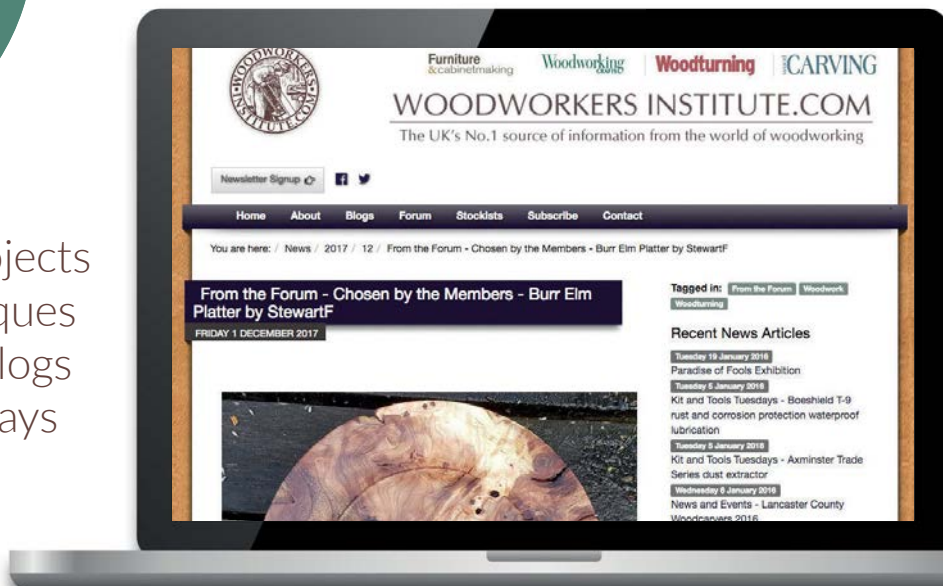
Rupert said: 'I am delighted to be the receiver of this year's Claxton Stevens Prize for the best Bespoke Guild Mark of 2018. Little did I or my wonderfully supportive and enthusiastic clients who commissioned this project know that the Logmore Table could end up being recognised nationally in this way.'

For more information about Rupert's work, visit: www.rupertsenior.co.uk



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TWDMPJ

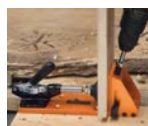
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The Peter Sefton Furniture School Exhibition

Showcasing the work of graduates from Peter Sefton's Professional Long Course

On 14 July the Peter Sefton Furniture School held an exhibition of work by graduates of the Professional Long Course, a comprehensive 35-week course in furniture making and woodworking. Here, we find out more about the students and take a closer look at some of their work. For more information about the school, visit: www.peterseftonfurnitureschool.com

Professional Long Course award winners 2017–18

Outstanding Furniture Design

sponsored by Gordon Russell Museum
Student: Roland Smith

Favourite Piece using Wood

Machining sponsored by Felder UK
Student: Neil

Best Use of Veneers

sponsored by Mundy Veneers
Student: Roland Smith

Visitor's Choice Favourite Piece

sponsored by Wood Workers Workshop, as voted for by visitors to the School's End of Year Show
Student: Tom Bradley

Unsung Hero

sponsored by The Furniture Makers' Company
Student: Reuben Joseph-Thomas

Best Student Finisher

sponsored by Fiddes & Son
Student: Dan Wall

Best Use of Solid Timber

sponsored by Whitmore's Timber
Student: Dave Taylor



Curlnut table by DAN KINGSTON-SMITH. After working as an apprentice in a furniture-making workshop, Dan joined the school to develop his hand tool skills and machining techniques to a high standard. The Curlnut table is constructed from solid American black walnut and English oak, with American black walnut crotch curl veneer and ebony stringing around the top. The design was inspired by elements of French furniture from his grandparents' house. There are two drawers on either side of a false drawer front with finger pulls on the underside to open. Dan will now be working as a cabinetmaker at Peter Hall's Furniture Workshop in Tewkesbury.

#36 occasional table by DAN WALL. A lifelong admiration for the artisan and a desire to create using his hands led Dan to join the Long Course, where he has gained a sound understanding of the principles of furniture design and construction, along with a good grounding in the science of wood. The number 36 can be found throughout #36. The dimensions are all divisible by 36. The table consists of 18 frames which stand in parallel formation and are joined together at only two positions. The parquetry tray displays a geometric *trompe l'oeil* effect based on the dissection of a decagon. Dan now plans to continue to develop his skills in the workshop of a designer-maker, while pursuing his own creations and commissions in his spare time.



Toro hallway chairs by DAVE TAYLOR. Professional carpenter Dave enrolled on the Long Course to gain the accuracy and finesse to turn to a career in fine woodworking. At the school, he has expanded his knowledge of materials and learned a 'proper design approach'. Dave's wych elm Toro chairs are inspired by the shapes of horns, tusks and antlers. They are entirely hand carved. The rear leg is one consecutive section through to the backslat. After graduation, Dave will be looking for a job with a high-end fine furniture maker in Oxfordshire while working towards being in a position to take commissions.





Roubo cabinetmaker's workbench by NEIL. This workbench is constructed from hard maple and walnut. The design is based on Andre Roubo's original French 18th-century cabinetmaker's workbench. The bench weighs in excess of 200kg and should provide many years of solid service.

Porphura and Sycómorum tables by REUBEN JOSEPH-THOMAS. After working in a workshop for a year, Reuben joined the school to get the professional training needed to achieve the quality and techniques required to produce fine furniture. His purpleheart and sycamore tables are based on a central polygon with five legs and a glazed tabletop. Reuben was fascinated by the idea that the structure of a piece of furniture could also be displayed and enjoyed while being functional. He was inspired by the Wilkins G-Plan Astro Spider table and created a design to incorporate this. The central polygon supports the piece; the hub of five legs creating a pentagonal pyramid viewed from above through the glazed tabletop. The pentagon creates a symmetry and balance between the tabletop and the supporting legs. Reuben will now work with a high-end furniture maker in Cardiff, with the long-term goal of being a furniture designer and maker with his own workshop.



DESIGN & INSPIRATION

Peter Sefton Furniture School



Wave bedside cabinets by ROLAND SMITH. A self-taught woodworker, Roland enrolled on the Long Course to fill the gaps in his knowledge and gain experience with the professional-standard equipment. His Wave cabinets gave him the opportunity to use several techniques he had not used before; primarily laminating, veneering and joining curved pieces into complex shapes. The cabinets are made in North American cherry with fumed oak details. The shape is inspired by an ocean wave as it breaks on the shore, this is reflected in the choice of wave pattern in the veneers. Roland had thought the main challenge was going to be the precise laminations of the curved drawers but he was not expecting it to be almost as difficult to drill the holes for the pivot mechanism; if it had been out by more than 0.1mm the bearings would not align and it would be impossible to fit the central rod. He is now looking forward to joining a high-end workshop or starting his own cabinetmaking business.



Envelope dining table by TOM BRADLEY. Tom signed up for the course after finishing his A-levels in July 2017. His Envelope table is a square table for everyday use – with a twist. When you turn the top and open the leaves the table expands from a six-seat dining table to a 10-seat dining table. It was made using walnut, sycamore and cherry veneers on a solid walnut frame. Tom will now be taking up a cabinetmaking apprenticeship with Matthew Burt's Splinter Group in Salisbury.



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Secret screw joinery

Derek Jones takes a look at the ultimate pocket hole screw for clamp free edge joints

One of the most fascinating aspects of studying period artefacts comes from unravelling the various techniques used to make them. Form and function are obviously important things to consider when it comes to determining where, when and how a piece was made but are often limited in what they can tell us about the maker. When face to face with a period piece keen observers will typically remove a drawer a few inches from its opening to inspect the dovetails and for a split second maybe even experience a connection with the maker. And while a neat and tidy example will indicate the maker was an accomplished woodworker, it also tells us that such details were of importance when the piece was made. Joints made with less finesse, on the other hand, might suggest otherwise. Venture a little further, however, and you'll invariably be rewarded with clues about the tools used during construction and how they were employed.

Throughout the centuries we've seen a noticeable difference in the way we treat non-show surfaces such as the underneath of chair seats, for example, or the back face of a door panel. For the most part the finishes to these surfaces were created using hand tools and as such often have the scars to prove it. Rough saw marks and undulating surfaces are not hard to find on pieces as late the mid-19th century and, along with the choice of timber used to make these components, can also be an indicator of age and location.

As far back as the 17th century, Holland was a major source of good quality oak for French and English cabinetmakers. As one of the region's most prolific and successful trading nations, they did an excellent trade converting logs sourced from Eastern European forests into planks using wind-powered sawmills. The uniform pattern of parallel saw marks survives on the non-show faces of some boards making these timbers easily recognisable.

Looking for clues

There are some interesting details about the construction of this drawer from a late 18th-century chest that indicate not only how it was made but also in which order some of the processes were carried out. The half-lap dovetails between the sides and front for example are reasonably delicate and what are often referred to as a London pattern; a descriptive term like Windsor and French polish that refers more to a process than a specific location. The drawer front is made from pine with a mahogany veneer applied to the front face, which features a cocked



A George III mahogany chest of drawers

PHOTOGRAPHS BY DEREK JONES/SCMP PUBLICATIONS

bead moulding applied around the edge. This style of moulding became popular at the beginning of the 18th century where previously the style was to add moulding to the aperture of a drawer opening in the form of half-round or double D cross-grain moulding. Since its inception as a popular material for cabinetmakers from around 1730, mahogany has been associated with quality. Sourced initially from Jamaica for ship building and later from Spanish colonies in Central America, the supply chain suffered interruptions from war and taxes driving the cost up, thus cementing its status as a luxury item. The availability of wide boards, something unattainable before, meant that early examples

of mahogany furniture often featured a lot of solid components. The convenience of which must have made the production of some parts relatively efficient if plane boards were used, reserving the finest figured ones for conversion into veneer.

It was common practice throughout the 18th and 19th centuries to disguise the use of secondary timbers and cabinetmakers would often colour the visible faces of these woods with a stain or paint that matched the colour of the mahogany, typically a much redder tone than we're used to seeing now. The pigments used in these paints would have been earth pigments, which, unlike wood, do not fade on exposure to sunlight so one could assume

that the original colour of the mahogany was of a similar tone. What's interesting about this drawer is that the inside face of the pine drawer back has been treated to the same colour wash as the inside face of the drawer front, while the back of the drawer back and bottom boards are left bare. Having used paints and stains myself I know how hard it is to attain a clean edge between finished and unfinished surfaces without a trace of paint appearing on any of the adjacent components. The lack of which on this drawer suggests to me that these parts were pre-finished before final assembly of the drawer. On the subject of finishing, also note that the ends of the pins where they protrude through the drawer side are not polished.



Fine single kerf or London pattern dovetails



The inside of the drawer fronts have been painted to resemble mahogany



The inside face of the back of the drawer has also been painted

Digging a little deeper

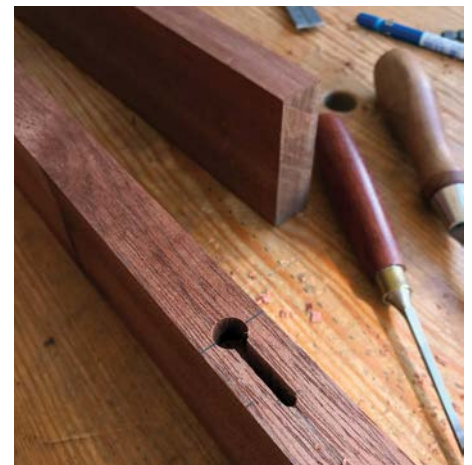
As well as the things you can see on period artefacts there are a host of other details that generally only ever reveal themselves to the restorer. This next detail is one that I have only come across a few times and I can think of only two reasons why that should be the case. The first because it's an uncommon practice, and the second because it's incredibly effective and therefore rarely seen. The secret screw joint, or slot screw joint as I've also known it, challenges a number of the basic fine woodworking principles; namely we don't generally recognise mechanical fixings between mating components as good practice; I'm thinking pocket hole screws and L brackets. But consider this, suppose you hadn't been influenced by the last few decades of woodworking snobbery and approached construction as a series of problems that need solving. You'd probably consider this technique as viable and for a number of good reasons. Before we get stuck into recreating the joint let's go back to those wide boards of mahogany for a moment and consider how you might edge joint a couple of them to make something like a dining table

leaf or counter top. Technically speaking, shooting the edges shouldn't be much more of a problem than shooting those of narrower boards but clamping the two halves together afterwards could prove difficult. Personally I've never agreed with the idea that you can never have too many clamps. For me it suggests that you might not have thought through the construction process thoroughly if you get to the glue-up stage and things are going wrong because you don't have enough clamps. Better to have a system in place that matches your level of equipment. This joint, by the way, does not require clamps to hold it in place while the glue dries, which I'm sure must have been part of the attraction. Sure, you can rely on a rubbed joint to make the connection but as long or wide boards are harder to handle you might struggle to get an invisible seam along the entire length. Long boards are also much harder to get straight in the first place and then keep them that way, so just as you might consider a dowel or two to help with alignment a hidden screw will do the same job.

The mechanics

The traditional version of this joint works by using the basic principle of a wedge. The wedge in this case being the head on a standard countersunk wood screw. The screw is driven into the edge of one board with around a quarter of its length left above the surface. A typical length for a screw in this application will be somewhere in the region of 40mm (1½in) long so all that's left above ground will be the part of the screw without a thread. At a corresponding location on the second board a hole is drilled to match the diameter of the screw head, or a fraction bigger, to a depth equal or slightly deeper than the amount of screw that is above ground on the first piece. To one side of this hole a series of smaller holes are drilled to the same depth to enable a

slot to be cut wide enough to accept the shank of the screw. Once cleaned out with a small chisel the opening should resemble a keyhole. When the boards are brought together the keyhole is positioned over the screw and the boards allowed to touch as if attempting a rubbed joint. A hammer or mallet is used to tap the boards into horizontal alignment and in so doing causes the screw head to bite into wood above and around the slot and hold the two pieces together. For the final glue-up you take the boards apart by tapping the top board back the other way. Then tighten the screws a little, about a quarter of a turn but this will depend on the pitch of the thread and the timber, and add glue to the mating surfaces before joining the boards together for the rest of eternity.



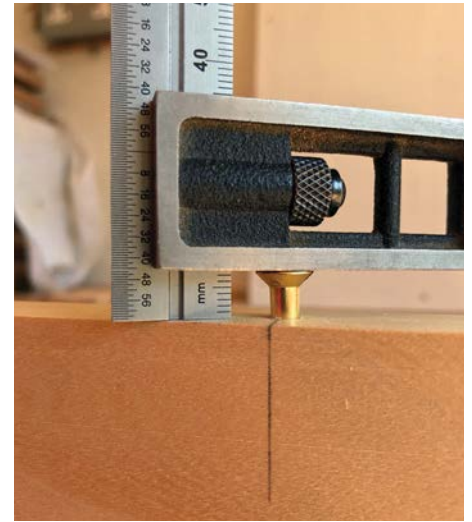
The keyhole slot



Notice where the screw head has gouged a path along the slot



Secure the bottom board and tap the top one into position



Set the screws at a uniform depth

Assembling the joint

Accurate drilling is the key to success for this joint as the screws need to be 90° to the face of the board. There's a little leeway in the other plane (along the edge) by a degree or two but ideally dead straight is best. You could pre-drill a block of wood, attach a fence to one side and use that as a guide perhaps. Or if your drill press has the capacity for wide boards that works too. Marking out is pretty straightforward, just place one board on top of the other and mark the common face with a couple of pencil strokes across the joint. Then roll the top board away and clamp the boards together back to back. Space the screws evenly and make a series of corresponding lines on the face and edge of both boards. In the current configuration you'll only be able to mark and work from the common face. To avoid any confusion later don't introduce marks to the other faces. Don't even be tempted to write 'back' on them, it'll only make you want to write 'front' on the other side. Set a marking gauge to half the thickness of the board or thereabouts and put a centre line for the screw on one board and the keyhole slots on the other. The same gauge setting works

on both boards as long as they are still clamped together.

For multiple fixings you may want to consider using a plunge router. If you're using straight cutters this method will require two separate operations, one to bore a hole for the screw head and another to cut a slot. An easier method would be to use a keyhole or T-slot cutter. Keyhole cutters are designed so that they can bore a hole (plunge) and then be moved sideways to create a T-slot. T-slot cutters on the other hand are generally not designed to bore holes as they are used to cut long T-shaped slots after the bulk of material has been removed with a grooving or straight two-flute cutter. As these cutters perform very similar tasks they're usually grouped together in most tool catalogues so be careful when making your selection. The technique for using a keyhole cutter is to plunge, move the required distance to create the slot and then reverse back to your original plunge location to exit the cut by allowing the cutter to rise up through the original bore hole. If you're jointing thin boards you might need some help to keep the router upright. You can attach a second fence to the rails or just fix an extension to your single one.



For convenience, position the square once and just mark both sides of the rule...



...one for the screw and the other for the end of the slot



Clamp the boards back to back and set your gauge to half the thickness of the board



Both centre lines can be marked with a single setting from either side of the stack



Create a slot with a series of holes along the centre line



Use a thin chisel to clear the waste and create the slot

Keyhole cutters

These cutters are available in various sizes and are made to suit screw sizes 8 to 12 and require only one operation to cut the hole for the screw head and slot. The slot is undercut to create a T-shaped hollow where the screw head will locate when the two pieces are brought together. There seems to be quite a difference in price for what are pretty much the same cutters. The list below is by no means exhaustive but is a good place to start.

See www.wealdentool.com Part No. T1550 (£11.83) and T1552 (£12.40)
www.routercutter.co.uk Part No. 3048 (£14.21) and 3052 (£17.36)
www.trend-uk.com Part No. 35/0X1/4TC (£40.88)



A typical keyhole cutter for use in a plunge router



This cutter undercuts the slot so you must reverse back to the original point of entry

Choice of glue

On a warm day you could get away with using hide glue straight from the cauldron as long as you're confident the glue won't start to gel before you can hammer the boards into place. Running a hot iron over the edges or giving them a blast with a hot air gun before application will give you some extra open time. If you do make your own hide glue from pearls you can improve the workability by substituting approximately one half of the water content for a strong beer. The alcohol works as a wetting agent by reducing the surface tension of the water allowing the glue to flow more easily into the pores of the wood without altering the viscosity of the adhesive. The sugar in the alcohol is also a

natural preservative making your glue last longer. The addition of a little salt or urea will render the glue liquid at room temperature. Alternatively, one of the room temperature liquid hide glues such as Titebond Liquid Hide Glue or Old Brown Glue (see *F&C* 270) will suffice. You can extend the open time of these glues as well using the above methods or you may find that just warming them in a cup of hot water before you start does the trick. PVA and yellow glues with a low viscosity will also work but choose one with an extended open time if you can. Anything that says fast grab on the label might cause problems. I'd probably steer clear of foaming or expanding glues like polyurethane.



Beer is good for glue



RIGHT: These hide glues are liquid at room temperature so have a longer open time

Which screws to use

For a period-correct recreation of this joint you'll need to use old-fashioned steel slotted screws as they work best. The edge of the heads on old style screws are usually quite sharp so they are able to cut into the wood either side of the slot and grip tight when the boards are brought together. Modern wood screws, though easier to find, aren't nearly as nice and tend to have soft edges around the perimeter of the head making them less efficient at cutting a path into the wood. As they are more likely to be the screws you have to hand it's worth considering taking a file to the head or passing them over a

grinder to sharpen the edge. Just be careful not to obliterate the slot. Pozi, Phillips or square head screws are quite acceptable and there's no need to clock. Ideally the grain at the edge of the board with the keyhole needs to be running as parallel to the joint as possible to avoid the screw from either following the direction of the grain and lifting it away from the joint or splitting the wood altogether. If this is the case consider undercutting the slot with a small chisel to help steer the screw head in the right direction and tighten the screw by $\frac{1}{16}$ th of a turn at a time until a good fit is achieved.

Yes, it might take a few dry runs to get the perfect fit but it'll be worth the extra effort. If you have used a keyhole cutter to create a T-slot, modern screws won't cause you any problems but the bite will be significantly less. An alternative would be to use pan head screws with a flat underside to the head or better still round head screws that incorporate a washer. Self-drilling screws or those where the shank is the same thickness as the screw body between threads are likely to bend if the projection is too high. They can also be very brittle and more likely to snap under load on hard timbers.

Why choose a low-tack adhesive?

Rub joints, i.e. those that come together without the use of clamps, benefit from the use of high-tack adhesives, with hot hide glue being the best. In a rub joint you'll want to be able to move at least one of the components back and forth until the adhesive takes hold and offers sufficient resistance to pulling them apart. Although there's a little lateral movement required to bond the components together our lock screw joint is effectively a joint formed under pressure created by the screws, which relies on excess glue being dispersed from the joint to complete the bond. As the amount of travel is limited by the length of the slot and in one direction only, it's possible for the glue to gel (or tack up) before the screws have had a chance to pull the joint up tight.



Pan head screws will require the use of the T-slot or keyhole cutter



The thicker the shank above the thread the better



Screws with an integrated washer are a halfway house solution and work in soft timbers

Pros and cons

As far as cons, it should go without saying that burying metal into wood where it can't be seen and won't be expected has its flaws, if not for the installer then most certainly for someone else in the future. Wherever possible consider marking the panel in such a way as to identify the position of the screws.

I noticed a couple of important things while investigating this joint that are worth mentioning. The first is to make the slot longer than you think it needs to be and to stop hitting the top board before it registers at the end of the slot. Use the lines on the face of the boards to determine the correct amount of ravel. I had a couple of dry runs where the screws bent under the pressure and one

incidence where the head sheared off. If you bend a screw on the first dry run and then give it a quarter turn to lower it, it will either be leaning towards or away from the face of the board. In this scenario when the boards are assembled the glue line will be open along one edge and therefore not coming together flat. Secondly, you need to plane perfectly flat mating edges, that means no sprung joints.

And as for the pros, a definite advantage of using this joint is that you won't need clamps to hold the parts together while the glue dries. In some instances you may even find that the panel is ready to work on straight away or that the joint doesn't require glue at all. *F&C*



The squeeze-out indicates the pull from the screws is sufficient to pull the joint closed



After cleaning up there's a faint glue line visible



Planed flat there's no trace of a join



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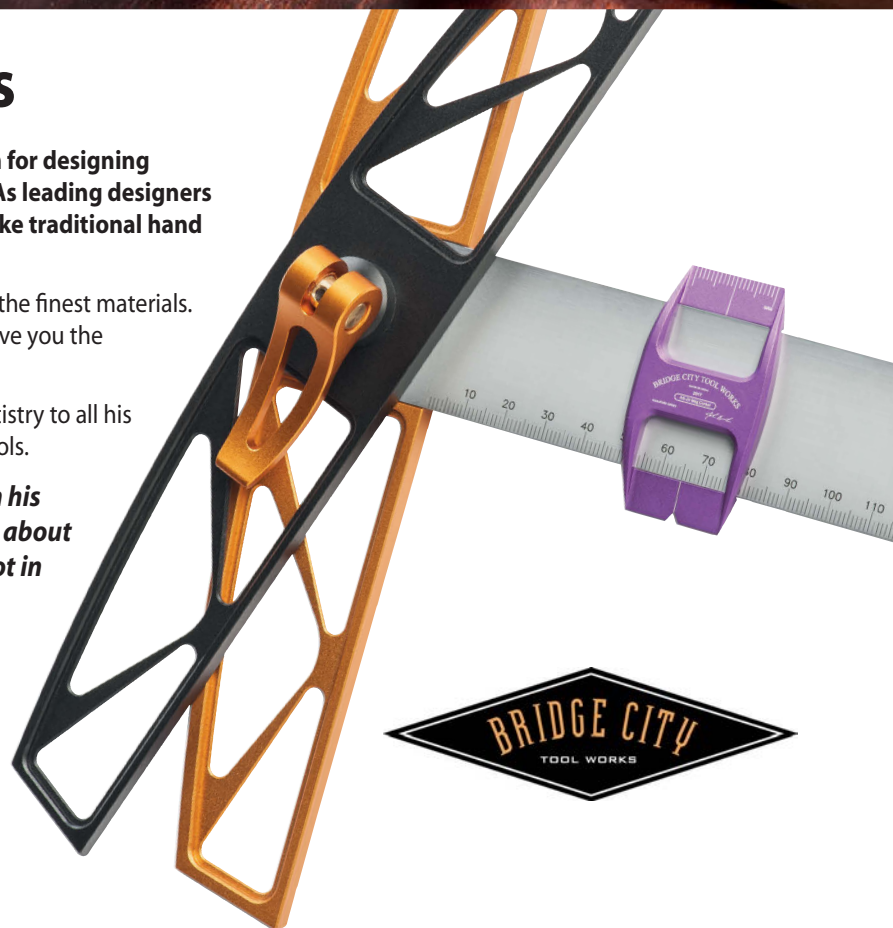
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UNDER THE HAMMER: Fine Japanese and Chinese furniture

We look at some of the best lots from Bonhams' recent auctions of Asian art

Bonhams' Fine Japanese Art and Fine Chinese Art auctions were held at the London salerooms in May. Each auction included a range of fine art, such as netsuke carvings, silk screen prints, ceramics, textiles and bronzes. Here we take a closer look at some of the furniture that went under the hammer.

£3500

A lacquered wood, ivory and inlaid Shibayama four-panel folding screen made in the late 19th/early 20th century during the Meiji era (1868–1912). It is boldly decorated on each panel with a figure, depicting respectively a Chinese dignitary holding a *tama* (wish-granting jewel), a seated warrior with a statue of a goddess, another warrior reading a scroll and a standing archer, each applied in high relief and inlaid in typical Shibayama style. The hardwood frame is pierced and carved with various species of birds and flowers along the top and spring and summer flowers along the bottom. The reverse is lacquered and decorated with a bird flying among foliage.



£4000

A black-lacquer *bundai* (writing desk) made in the early 20th century during either the Meiji (1868–1912) or Taisho (1912–26) era. The *bundai* is of standard form with *fudegaeshi* (raised sections to left and right), decorated in gold and silver *hiramaki-e*, *takamaki-e*, *togidashi maki-e* and *e-nashiji* with a moonlit scene of windswept bush clover growing along the banks of a winding stream, possibly alluding to Noji no Tamagawa (the Jewel River in Noji) in Omi Province. One of the sides is mounted with fittings of gilt copper.



£1125

A black-lacquer *bundai* (writing desk) made in the 19th century during the Edo period (1615–1868). The *roiro* ground is decorated in gold *hiramaki-e* and *e-nashiji* with *omodaka* (three-leaf arrowheads) on a shallow meandering stream. The whole desk is raised on two straight-sided feet with scalloped inner edges, and the sides are applied with brass metal mounts.



£1500

A black-lacquer *katana-kake* (sword stand) made by Umezawa Ryushin (1874–1953), in ca 1900–20 during the Meiji (1868–1912) or Taisho (1912–26) era. The lower storage section has a removable door and supports a rack for two swords. The stand is entirely covered in black *roiro* lacquer and is decorated with large scattered butterflies in gold, silver and coloured *takamaki-e*, *tetsusabi-nuri* and other textures, including shell and coral.

£308,750

A fine *hongmu* 'dragon' throne made during the Qing Dynasty. The wide seat is of generous proportions and is framed by an ornately openwork carved three-stepped throne-back extending down towards the armrests. It is set on a bulging apron and four cabriole legs terminating with dragon-clawed feet. The panels are finely carved with writhing dragons in pursuit of flaming pearls amidst whirling clouds. The wood has a dark-chocolate tone.



Huanghuali

'Huanghuali' means 'yellow flowering pear wood'. It is a member of the rosewood family and its botanical name is *Dalbergia odorifera*. Its colour ranges from reddish-brown to golden-yellow, antique pieces made from this wood have generally mellowed to a yellowish tone. It is characterised by a shimmering surface, figured patterns and a sweet fragrance.

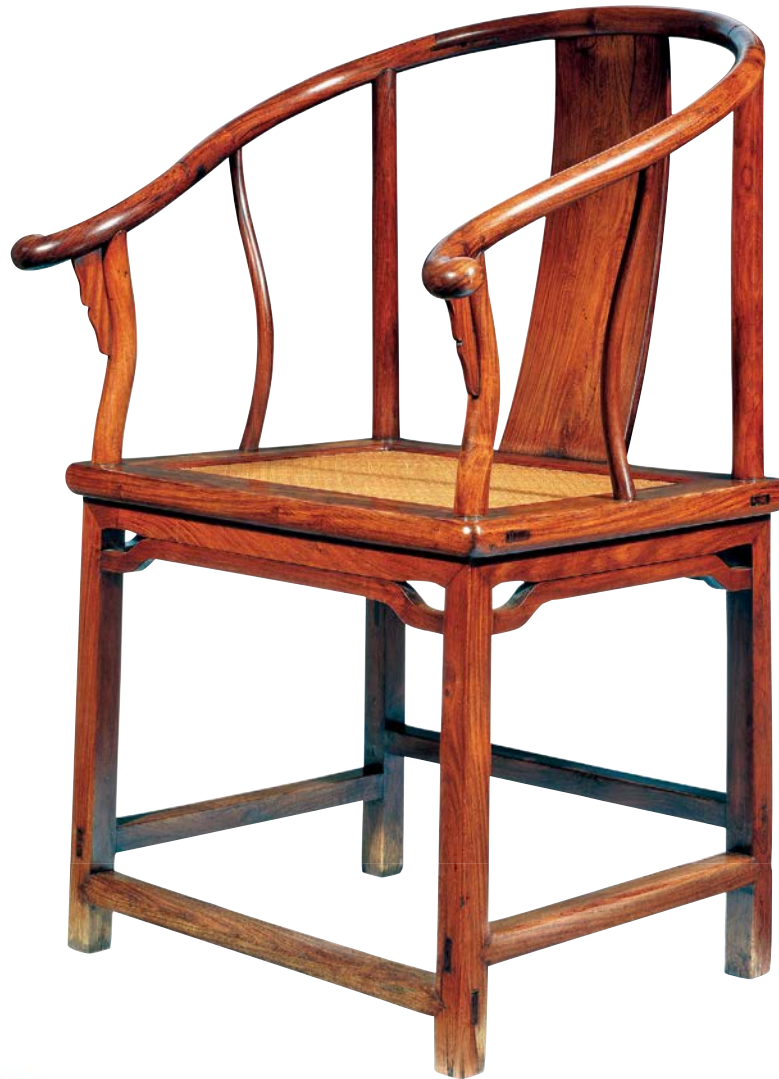
£37,500

A 17th- or 18th-century *huanghuali* throne-shaped mirror stand. The back is in three sections, high in the centre flanked by two lower curving panels, each with extending protruding crest rails terminating in carved scroll leaf shapes, enclosing openwork panels with birds amidst a floral meander of leafy blossoms. There are railings on the sides and front, the centre is left open. The platform is set with six drawers, carved on the front with floral scrolls.



£52,500

A rare huanghuali horseshoe back armchair, made in the 16th or 17th century. The elegantly curving crestrail is set on two straight back posts and S-shaped front and side posts. There is a shaped spandrel beneath each out-scolled and rounded terminal, with a curved rectangular back splat. The posts are of circular section continuing through the matte seat frame forming the square-section legs secured by hump-back aprons and four stretchers. The wood has a warm honey-brown tone.



£10,000

A two-part huanghuali campaign desk. The top section has a drop-down desk front with a felt writing pad over two drawers. The interior of the desk has five deep drawers made of softwood and one locking compartment framed with an ivory border. The lower section has two wide drawers with ivory borders and a softwood interior, flanked by two pairs of lifting handles.



£6250

A huanghuali stool made during the mid-Qing Dynasty. The seat has a rectangular form with a woven bamboo seat added later. It is framed by mitred sections each softened away at the corners to reveal a curved triangular corner section. The top panel is supported on curved S-frame brackets and supported on four straight legs similarly joined to the bottom struts and raised on four low bracket feet.

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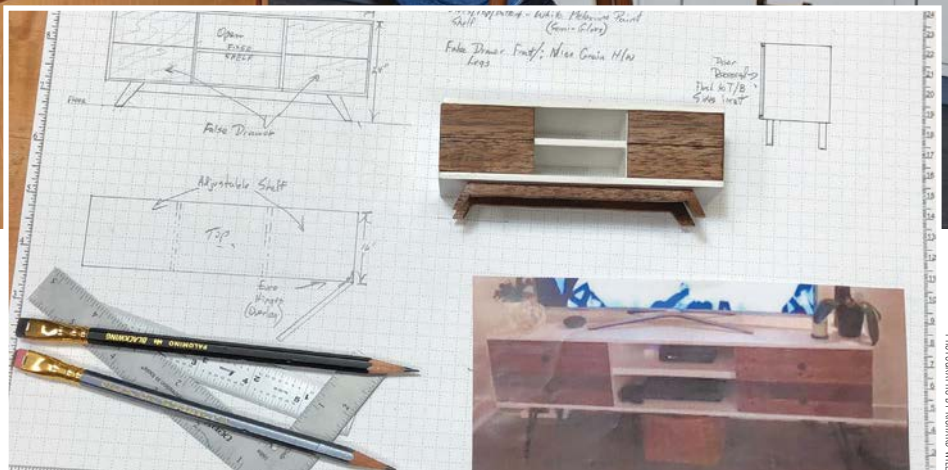
Danish Modern TV stand

Richard Wile makes a TV stand inspired by mid-century Scandinavian design



During the past few years I have been fortunate enough to live and work in Copenhagen, which is one of the great cities of the world for furniture and design. During my time there I spent many hours at the Designmuseum Danmark, as well as wandering through furniture stores soaking in the Danish design language and aesthetic. Perhaps it is unsurprising that the Danish design ethos has crept into many of my recent works. To me it is the elegant simplicity, as well as the use of modern mixes of materials that is the essence of this design school. Besides, it takes some serious skill to turn vacuum-formed plywood into fine furniture.

For this project, the client sent me a photo from an acquaintance's house and said 'this is what I want, except not with metal legs'. This is how many projects start for me – an idea, or photo and a vague description that needs interpretation to be realised in 3D form. It is for this reason that once I have sketched up the design by hand, I usually build a scale model, or maquette, to get the final design approved before construction. This approach also allows me to work out any joinery or construction issues I may have in advance.

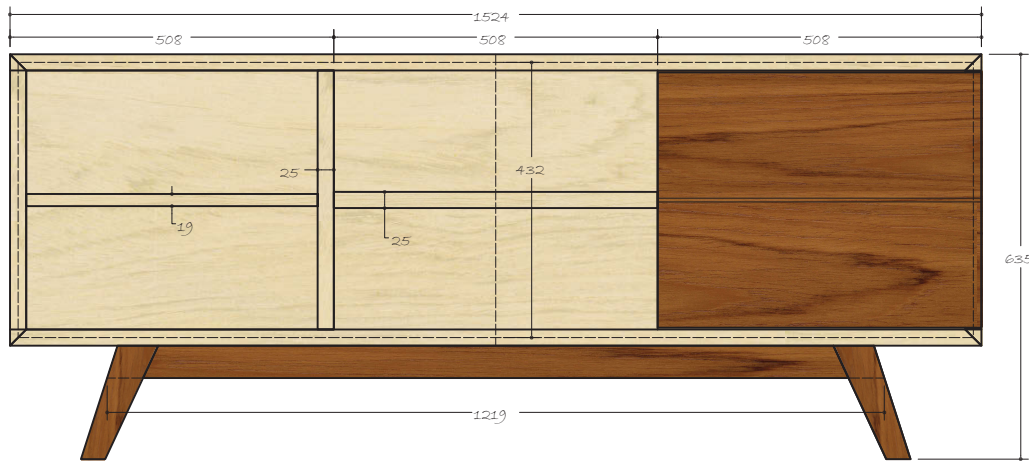


The build

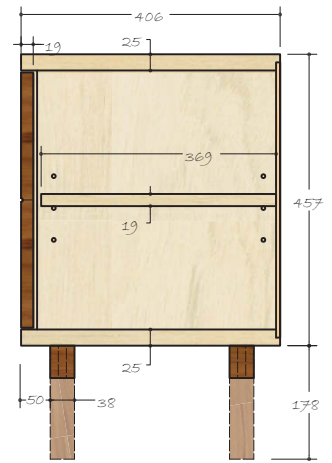
With most mid-century pieces, less is more, so the carcass needed to be clean and simple. The corners would be mitred to eliminate any butt-joints being telegraphed through the paint, and the sides needed to be smooth. To achieve the edge profile and proportion I wanted, the material was dimensioned to 25mm thick, and to keep the weight down I used a lightweight close-grained hardwood for the painted parts – poplar was my choice in this case.

Work started by gluing up the large panels for the sides of the carcass; my approach is to machine plane the boards to near-final thickness and be diligent with aligning the joints during glue-up. This minimises the surfacing necessary, but the large surfaces

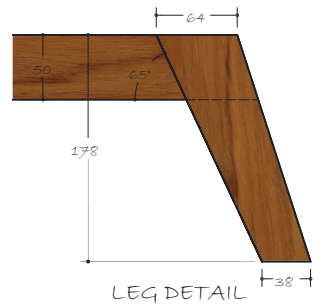
still need to be hand-planed and surface sanded to their final thickness before the next steps. The panels were then stickered for a few days to let everything settle down. The panels remained oversize during the surfacing process to avoid rounding over any edges while sanding. This prep stage is critical, as any defects in the wood will show through the paint on the finished project. No need to finish sand just yet, working to 120 grit is fine for now – plenty of time for sanding later. With the panels finished up, it is time for some joinery. This starts by ripping the panels to finish width, either on the tablesaw or tracksaw; initially cut just oversize and hand-planed to clean up the edges.



SPLIT FRONT ELEVATION, DOOR OMITTED ONE SIDE
Scale 1 to 12



SECTION



LEG DETAIL

Mitre offcuts glued to all four corners to infill gap between top and bottom pieces and sides, created by difference in depth

Central "H" frame glued and screwed together and to carcass, screws hidden using poplar plugs. Adjustable shelves either side

6mm plywood back panel screwed into rebate in carcass sides, top and bottom. Openings for cables cut in ply to suit.

Two piece door with joint hidden by false kerf, a groove worked across the middle of the door

Poplar carcass mitred at corner joints and strengthened with dominos

Carcass supported on legs joined in pairs by stretcher rails, with angled bridle joints at each end. Legs and rails are 38mm thick, joined to carcass using roundhead screws with washers recessed 8mm. Bridle joints strengthened by two screws per joint through back face.

Cutting those big mitres

Cutting an accurate mitre on thick and wide material safely is a challenge. For the small shop a creative approach is required; the tracksaw is ideally suited for this task. Setup and practice is key if you are not accustomed to making these cuts as you have very little margin for error; in the 45° setup the tracksaw is unbalanced with much of the weight of the saw unsupported during the cut. I left enough material on the wide sections to allow me a few test cuts to dial things in perfectly. Of primary importance is getting the angle to exactly 45°, start at the 45° mark on the guide and make test cuts on the track and adjust as necessary until you have a perfect mitre cut. Tighten the knobs on the saw and avoid bumping it and losing this setting. Next the cut must be perpendicular to the edges, a carpenter square on the long edge ensures the track is in the right place. In a mitred cabinet, much like a picture frame, the length of the opposing sides must be exactly the same. My solution to this is to cut both

pieces at the same time, clamping them together in the middle and setting up the cut on the two at once. This will guarantee they are exactly the same length, and ensure we have a true rectangle when assembly time comes. A quick double check is to measure both ends of the saw track from the cut ends, if both of these are exactly the same and square to the sides, you are good to go.

I also found that the actual cut was quite a load on the saw and had some burning to deal with, so my first cut was a couple of millimetres longer than I needed and then a final skim pass went much smoother. The other key thing to pay attention to is your pressure on the saw during the cut, holding the saw's bed tightly on the track and making the cut in one smooth motion, avoids any saw marks or defects in the cut. To improve the gluing surface I also fashioned a 45° shooting board setup to plane the mitred edges to remove any saw and burn marks.



Cutting the mitres RIGHT: Cleaning up the mitres



Corner joinery

The mitred corners provide plenty of gluing surface to ensure a strong box, however gluing up this mass is a challenge, so a few Dominoes would keep things aligned and reduce any panics during the glue-up. A cut using the offcuts showed me quickly that an 8 x 40mm was going to be too long. Even with the Domino inserted as close to the inside corner as I dared, it was coming dangerously close to the outside of the carcass. My solution here was to cut the Dominoes to 30mm, this allowed me to stay with the beefier 8mm size for strength but not compromise the surface of the carcass. Because the panels are different widths, everything was to be aligned at the back, the rearmost Domino was cut the width of the Domino, while the centre and front ones will



The corner joinery

be fit into elongated holes (on one face), again to ease assembly. With the rabbet cut for the back plywood panel I was ready for a test



Dry run for the glue-up

clamp-up. This dry run/rehearsal served many purposes; not the least of which was learning an order of things for the glue-up later on.

Shelf module

With the carcass squared and clamped-up, the final height of the shelf module could be confirmed, as well as the exact size for the rear panel. I found I had lost a millimetre or two in the length and height getting the opposing sides the same length, so this was a chance to confirm the exact sizes of these captured elements. The shelf module would now be assembled and dry-fitted to eliminate any gaps, being sure to mark where the finished shelf assembly contacts the top and bottom of the carcass; this allows masking these areas off for glue later on. Measure for shelf pin holes, so they can be drilled before final assembly. The 'H' of the shelf module was assembled with butt-joints and screws, using plugs made from the same material as

the module itself. This is important as when the wood moves, the plugs will move the same as the surrounding wood and eliminate any telegraphing through the paint. The plugs should be inserted with minimal glue and left to dry for at least a couple of days to ensure they have stabilised in their holes. Square joints are critical here, the large butt joints should help, but ensure this component has 90° corners, otherwise assembly later on will go badly.

I finish-sanded to 220 grit and painted all the inside surfaces and back panel before any glue was applied, staying away from glue surfaces. The finish in this case was melamine white paint, the client wanted the slightly dull sheen and texture this finish

provides. Gloss white would be a perfectly acceptable choice as well.



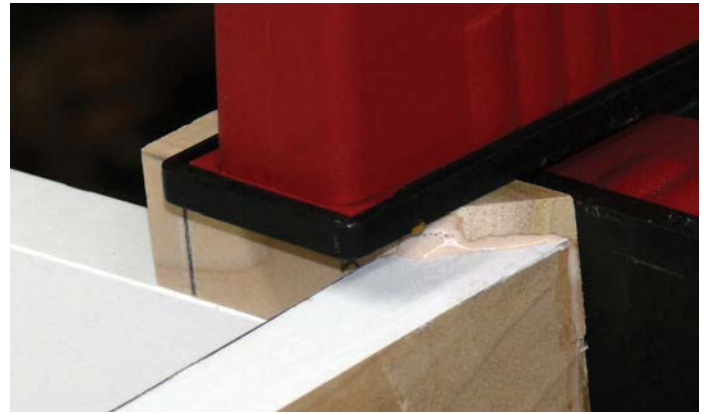
Shelf assembly

Carcass assembly

With the paint cured and the process rehearsed, glue-up time has arrived. With the back edges of all the pieces against the flat assembly surface, keeping things aligned would be easier; tape ensures pieces will not be glued to the assembly table. In order to have the shelf assembly properly aligned front to back, place a couple of strips of 6mm plywood under it to raise it so it will align with the rabbet for the back panel. Lots of Titebond on all the surfaces and speedy work gets this together, earlier rehearsals really pay off here. Confirm the shelf assembly is exactly centred before locking the clamps down for the final time. Measuring the diagonals will ensure the entire assembly is square, if not adjust the opposing clamps before anything sets up.

Exterior squeeze-out is less of an issue, as it can be removed later and paint will cover any blotching of the wood. Interior squeeze-out is easily removed before the glue sets up. Letting this cook in the clamps for at least 24 hours ensures things will be stable and solid when the pressure is removed. The screws and plugs to fix the shelf assembly can be installed at this time, leaving the plugs a couple of days to stabilise before flush-cutting them will eliminate surprises later on.

Once the clamps are removed, glue the small mitre offcuts to the four front corners. Clean up any squeeze-out on the joint with



Corner mitre glue-up

a chisel to ensure your piece has a solid surface to attach on both the surfaces to be glued. I started with a piece slightly oversized to make clamping easier and removed the excess with a flush-cut saw; be sure to restrict the glue to the part you want glued, to minimise the cleanup.

The doors

The doors are teak panels glued up using epoxy after cleaning up the joints with solvent to remove the oils in the wood. Walnut would also be an acceptable material for the doors and base. My material was wide enough that I could hide the joint under the false kerf I would cut later in the door. Cutting the doors to width after assembly allows the exact door width to be tuned to the final dimension of the opening, allowing 3mm or so above and below for clearance.

Hardware for the doors was a challenge, as one would normally use 35mm Euro-style hinges, however I was unable to locate overlay style hinges that would work on 1in-thick sides, so I went with a 50mm butt hinge that was installed flush with the side. This gave the clean 'hingeless' look from the front – relieve the back edge of each door with a chamfer to allow it to swing freely.



The door hinges

The base

The legs and support are made from 1½in thick teak and use an angled bridle joint reinforced with screws for strength. This provides maximum surface for the epoxy and provides a very strong joint for this key component. With the base pieces cut to size, and all faces marked for cutting, a piece of scrap wood supports the saw for the angled shoulder cuts on the stretchers, these cuts were stopped just short of the cheek marks. Cheek cuts were started on the bandsaw and finished by hand with the tenon saw. The faces were cleaned up with a joinery float and the mortise for the leg pieces were marked from the final tenons cut on the

stretchers. I chose this order of operations in case I needed a do-over, I would only need another short piece for a leg, rather than a new stretcher. Once everything fit snugly together, the joints were cleaned with solvent and epoxied together with lots of clamps to keep everything aligned and tight. My preference is to use slow-cure epoxy, which takes a day to cure, however provides plenty of time for adjusting things before it sets up. This is quite helpful in an assembly like this that is tough to clamp. Sanding and a round-over of all surfaces (except the top edge) finish the base.



Final joint fitting



Test cuts for the bridle joint

Final assembly

The teak is finished with a few coats of Danish oil applied over the surface, which was cleaned with solvent. The base pieces are attached with the leg screws facing rearward, using 4 #10-265mm round head screws with washers for each stretcher. The hinges are mortised into the cabinet sides and doors and are installed.

A rare-earth magnet keeps the doors closed and no handles ensures the clean and simple look we are after is achieved. The shelves are installed inside, the back screwed on and your Danish Modern TV Stand is complete, ready to use. This simple, but bold piece is surely to become the centre of attention in any room it occupies. *F&C*



The finished stand

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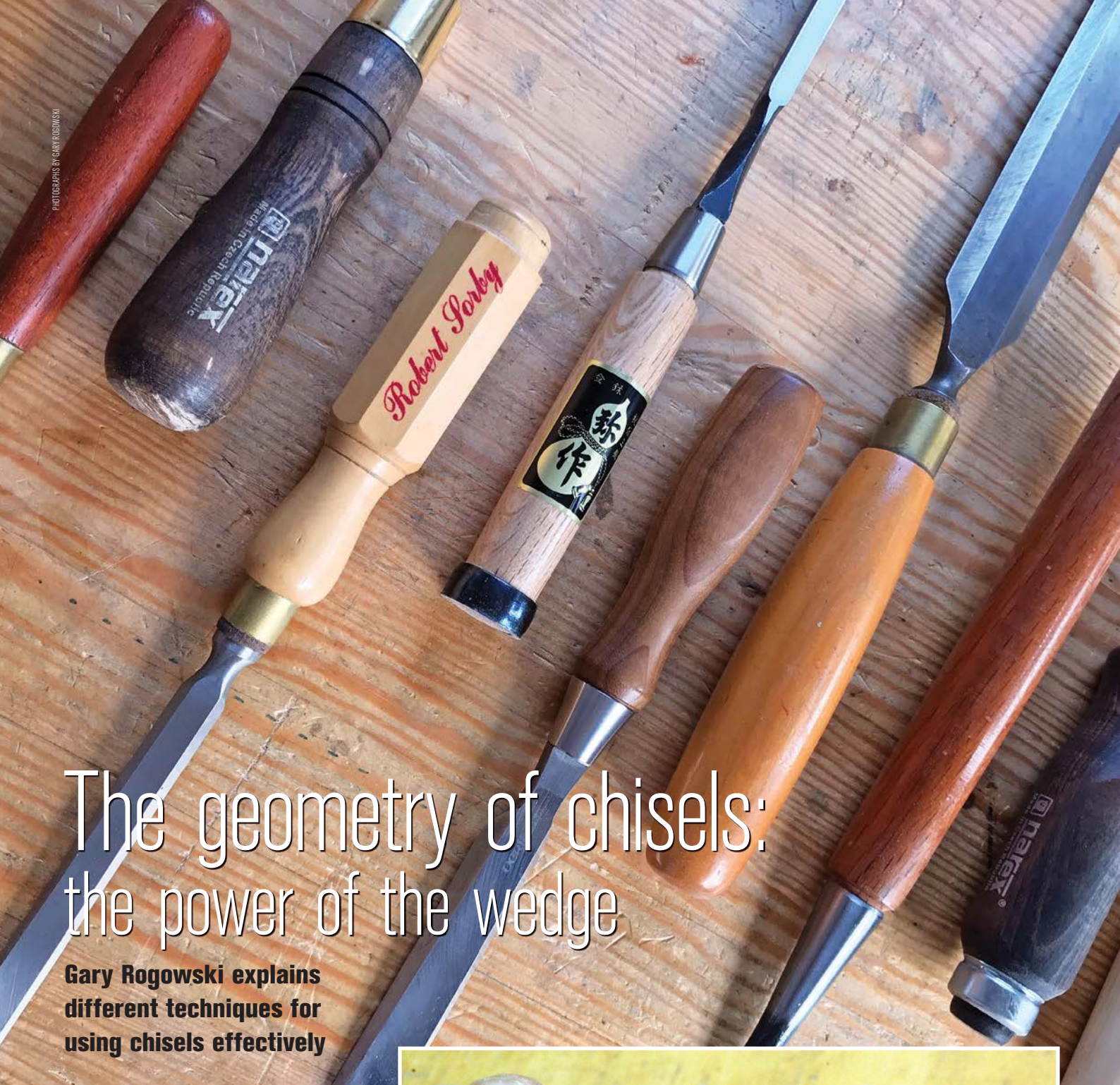
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The geometry of chisels: the power of the wedge

**Gary Rogowski explains
different techniques for
using chisels effectively**

Did Archimedes love the wedge as much as he did the lever? He should have, as the power of the wedge enables every tool in an artisan's wood shop save the hammer and a few measuring tools. Think on it: saw blades, hand saws, planer and jointer knives, drill bits, even sandpaper with its random chunks of sharp-edged grit all share this triangular shape in one form or another. Plane irons, scrapers, marking gauges and, in its purest form, the chisel, all exhibit the particular power of the wedge to slice, to separate, to cut things in twain.

Consider the wedge as chisel then. Faster and more accurate than sandpaper, a properly sharpened chisel is the first tool to grab when a nick of wood needs to be removed, a mortise chopped square, an edge chamfered or a shape faired.



The wedge acts as a persuader in this ship carpenter's mortising chisel

Chisel types

The chisel is our most basic hand tool in the shop. Consider the array of chisels available for us. From solid mortising chisels to delicate and thin paring ones, these tools can both chop and slice and, depending upon the wood, can do so with relative ease or pounded assurance.



An array of chisels showing the diverse shapes, lengths and thicknesses of this most useful cutting tool

Using the wedge

The wedge works with more force the longer it is, compared to its width. Its Mechanical Advantage = Length/Width. But tool steel needs to work within a fairly small range to be effective as a wedge and continue to hold its sharp edge. We sharpen then somewhere between a 25° and 30° angle. This gives us a good compromise between toughness and sharpness for an edge. The lower 25° angle will make the paring or slicing easier but would be too fragile for working in a hard wood like



This angle gauge allows one to roughly see the angle of the bevel of a chisel

Chamfering

When chamfering, put the chisel bevel side down to get the chisel handle up off the work and out of your way. This also makes the wedge shape, which the chisel possesses, try to push the tool out of the cut. It's simple then to put a little hand pressure on it to keep it in a cut when chamfering an edge. The reverse situation with the bevel side up can lead one into trouble if care is not taken. This is because the wedge now wants to push the chisel edge down and into the wood as the cut is made. The chisel will feed itself into the wood unless one is cautious in the depth of cut. This is especially true when using a bevel side up bullnose plane with the nose removed turning it into a chisel plane. These planes are notorious for trying to dive into a cut simply because of the wedge doing its natural job. Keep good hand pressure on the rear of the plane to prevent this.

Which to choose then? Any woodworker worth his or her salt knows that one set of chisels isn't enough for all the jobs one might run into. One group of them, the mortising and firmer chisels are better for heavy chopping work while bevel-edged ones, bench chisels, can get into the tight corners of a dovetail joint.



Firmer chisel (left) vs Blue Spruce bevel edge (centre) vs paring chisel (right)

oak. While the 30° angle will allow the chisel edge to stand up longer to the punishment of chopping harder woods, it will perhaps be harder work pushing it through for a paring cut on end grain.

Some of the tasks I accomplish with my chisels include chamfering, cleaning, shaping, paring and chopping. If one understands how to use the wedge of a chisel shape to his advantage, so much of this hand work becomes simpler.



The Wixey digital angle gauge gives an accurate representation of an angled reality



Chamfering bevel side down. With the bevel side down to the cut, the wedge tries to push the chisel up and out of the cut. It's easy then with slight hand pressure to keep it in the cut



Chamfering bevel side up. With the bevel of the chisel up in the cut, the wedge of the tool tries to pull the chisel down and into the cut. Care must be taken to keep the cuts light to avoid this

Cleaning



Cleaning the fibres out of a router cut

See how well the chisel works when cleaning the protruding fuzz off a router cut. By putting good pressure down on the handle, the chisel and bevel stay up on the surface of the wood and slice off just the offending fibres.

Shaping

Shaping inlay is another job suited to a sharp paring chisel. Care again must be taken to pare into supporting fibres. Square plugs inlaid into a board with end grain showing must be pared



Paring end grain square plugs. I use an old credit card to protect the surface of the wood as I pare up and off towards the end grain of the plug

Paring

Paring work with a chisel is one of its best attributes as few other tools can do as clean and accurate a job. Remember to always pare towards the supported fibres in a paring cut. This way the long fibres will support the shorter fibres being cut. You can see how when I pare off the end grain with unsupported fibres I get bits or huge chunks of tear-out.



Paring off towards the supported fibres. Pare off towards the long supporting fibres or towards the end grain when paring off at the end of a board



Paring off end grain. Paring off the end grain yields tear-out as the fibres being cut are unsupported

up and off towards the end grain to support the cut. Long grain plugs that are inlaid into a board cannot be pared in this same fashion otherwise there would be tear-out. They must

be carefully pared moving across the edges of the inlay. Notice how on the end grain of this stick, I work towards the high end of the cut. Those longer fibres help support the cut.



Paring long grain square plugs. Long grain plugs cannot be pared by carving up. This would result in tear-out. Pare across their edges but carefully so as not to nick the surrounding wood



When shaping end grain, work towards the longer fibres to help support the cut

Chopping

Chopping work really shows how the wedge can be used for or against your efforts. I used to chop with very light cuts right on a gauge line when cleaning up dovetails. This was to prevent too heavy a pass from moving my chisel off my line and into the precious good wood. But this was a slow method and prone to error. Now when I clean out a joint, I start by chopping well off the line and I can do so with impunity.



Chopping off from a gauge line. By starting well off the gauge line and close to the end of the wood, the wedge simply pushes away the waste



Chopping on the gauge line. After removing most of the waste the chisel can be placed right on the gauge line to finish up chopping at the gauge line



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Four bench jigs for handplanes

In this abridged extract from *Woodworking with Hand Tools*, Norman Pirollo describes his techniques for efficient handplaning



PHOTOGRAPHS BY MARK SCHIFFELD. ILLUSTRATIONS BY CHRISTOPHER MILLS

Like many woodworkers, I began with hand tools but quickly progressed to using machines for almost every aspect of my work. A few years ago, as I developed my woodworking business, I decided there must be a less dusty and more peaceful way to make furniture. I took courses at a woodworking school whose philosophy was all about hand tools. This experience opened my eyes; you might say I became a born-again woodworker. Safety was also a factor in

my transformation. For example, it can be dangerous to machine small parts on a tablesaw or bandsaw.

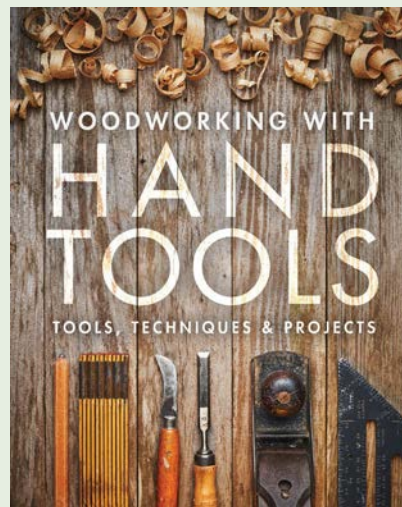
Now, instead of hearing the drone and whine of machines and breathing dust all day, I listen to classical music and sweep up shavings at the end of the day.

While I do use machinery sparingly, productivity remains the key to any business, so I've had to make my handplaning efficient without sacrificing quality. I use a series of

jigs for different planing situations. The jigs have $\frac{3}{4}$ in.-dia. dowels that fit into dog holes in my workbench. If your bench doesn't have dog holes already, you need to drill only two or three because all the jigs are interchangeable. The jigs and techniques I'll describe are by no means new—handplanes have been used for centuries—but I've added my own modifications. One of these is that I'm left-handed, so you'll need to flip the plans if you're a righty.

Woodworking with Hand Tools

By the Editors of *Fine Woodworking*, published by Taunton (£21.99, available from www.thegmcgroup.com)



1 Planing stop

For face-planing boards at least ½ in. thick, I use a simple stop that is attached to the bench with a single dowel. To prevent the jig from pivoting in use, a cleat registers against the front edge of the bench.

After cutting out the two parts, clamp them together and place them on the workbench, centered over a dog hole. Insert a ¾ in.-dia. Forstner bit into the hole from the underside of the bench and use the spur to mark the location on the bottom of the jig base. Use the same bit to drill the hole on the drill press, and then use a ¾ in.-dia. brad-point bit to drill three holes for the dowels that will connect the cleat.

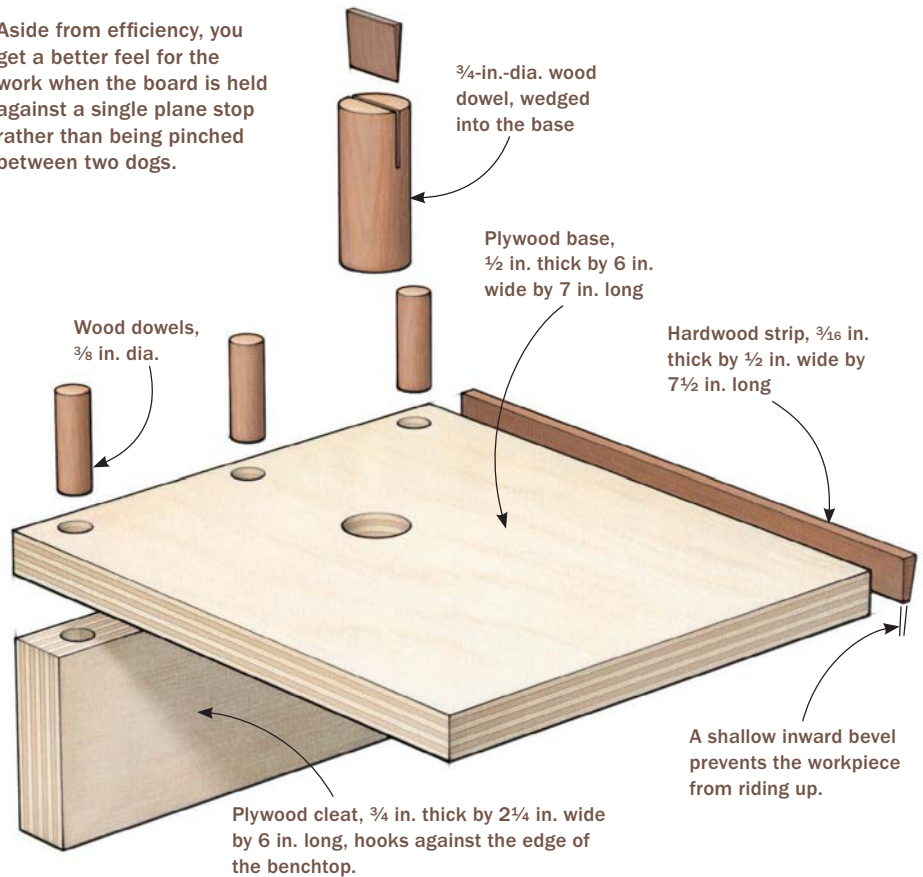
Dowel stock varies fractionally in diameter; a slightly loose fit is fine in the dog hole, but you need a tight fit into the base of the jig. To ensure a good fit, I saw a kerf into the top of the ¾ in. dowel. I apply glue and insert the dowel, then compress a hardwood wedge into the kerf using the jaws of a vise, which locks the dowel in place.

When the glue is dry, insert the base into the dog hole, clamp on the cleat, square the base to the edge of the bench, and extend the ¾ in.-dia. holes into the cleat. Glue in the dowels and, when dry, plane everything flush with the base.

On the working edge of the stop, I glue a strip of hardwood with a shallow inward bevel on its face to keep boards from slipping upward. I apply a single coat of oil finish to my jigs for looks and protection, but this is optional.

Use a Stop to Go Faster

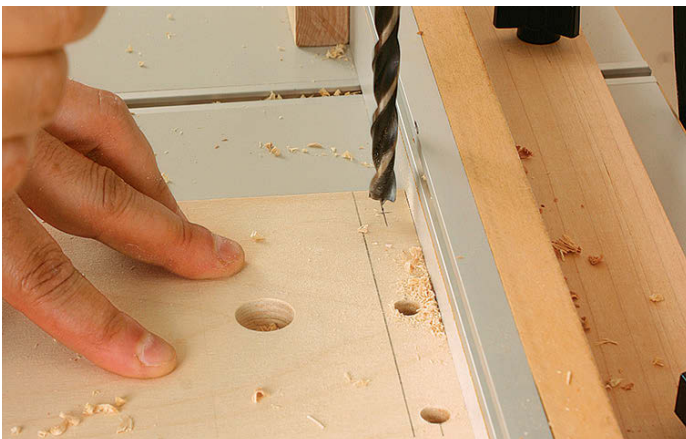
Aside from efficiency, you get a better feel for the work when the board is held against a single plane stop rather than being pinched between two dogs.



A simple stop is useful for face-planing boards



Locate the big dowel. Center the base over a dog hole. Use a ¾ in. Forstner bit to nick the underside of the base where you will drill



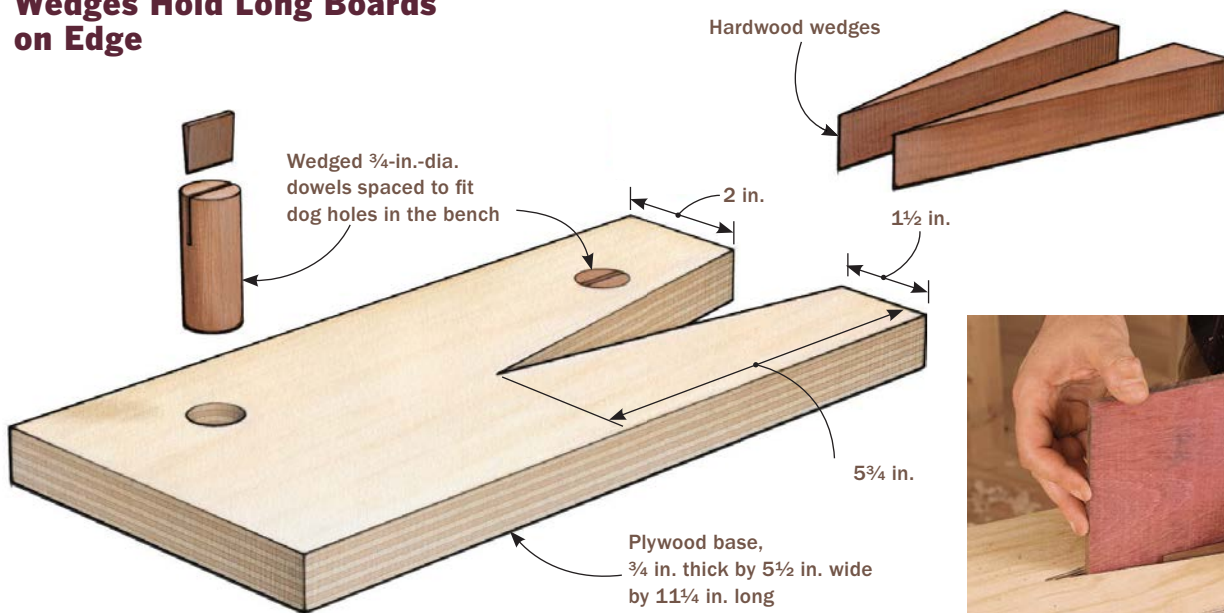
Drill for the others. With a 3/8 in. brad-point bit, drill three holes at the front of the base for dowels that connect the cleat



Attach the cleat. Insert the big dowel, ensure the base is square to the bench, then clamp on the cleat and extend the 3/8 in. dowel holes

2 Bird's-mouth stop

Wedges Hold Long Boards on Edge



When edge-planing long boards, I employ a bird's-mouth stop. This attachment works remarkably well for holding a board on edge and is much faster than using a front vise, with or without a board jack.

Attached to the bench via two adjacent dog holes, this jig takes a bit more time to make than the last one, but the top two dowels give great rigidity and eliminate any tendency for rotation. Any board up to about 1 1/2 in. thick can be inserted into the V-shaped slot in the jig and held in place with a small hardwood wedge on either side. The easiest way to make the wedges is to use the opening in the base as a template, cut the wedges on the bandsaw, and then clean them up with a handplane while holding them in a vise.



Edge-planing made easy. A bird's-mouth jig allows you to rest the whole length of a board on the bench while you edge-plane it. If held in a vise, only a part of the board is supported

3 Planing board

I reach for my planing board when working shorter or other-wise difficult workpieces. It combines a flat base with smaller versions of the first two jigs in this chapter. The planing board has two advantages. It guarantees a flat surface to plane on, even if the benchtop isn't flat. Also, it allows me to plane thin, narrow stock. I add a base of 1/8-in.-thick Masonite to plane stock less than 1/4 in. thick instead of installing a thinner plane stop.

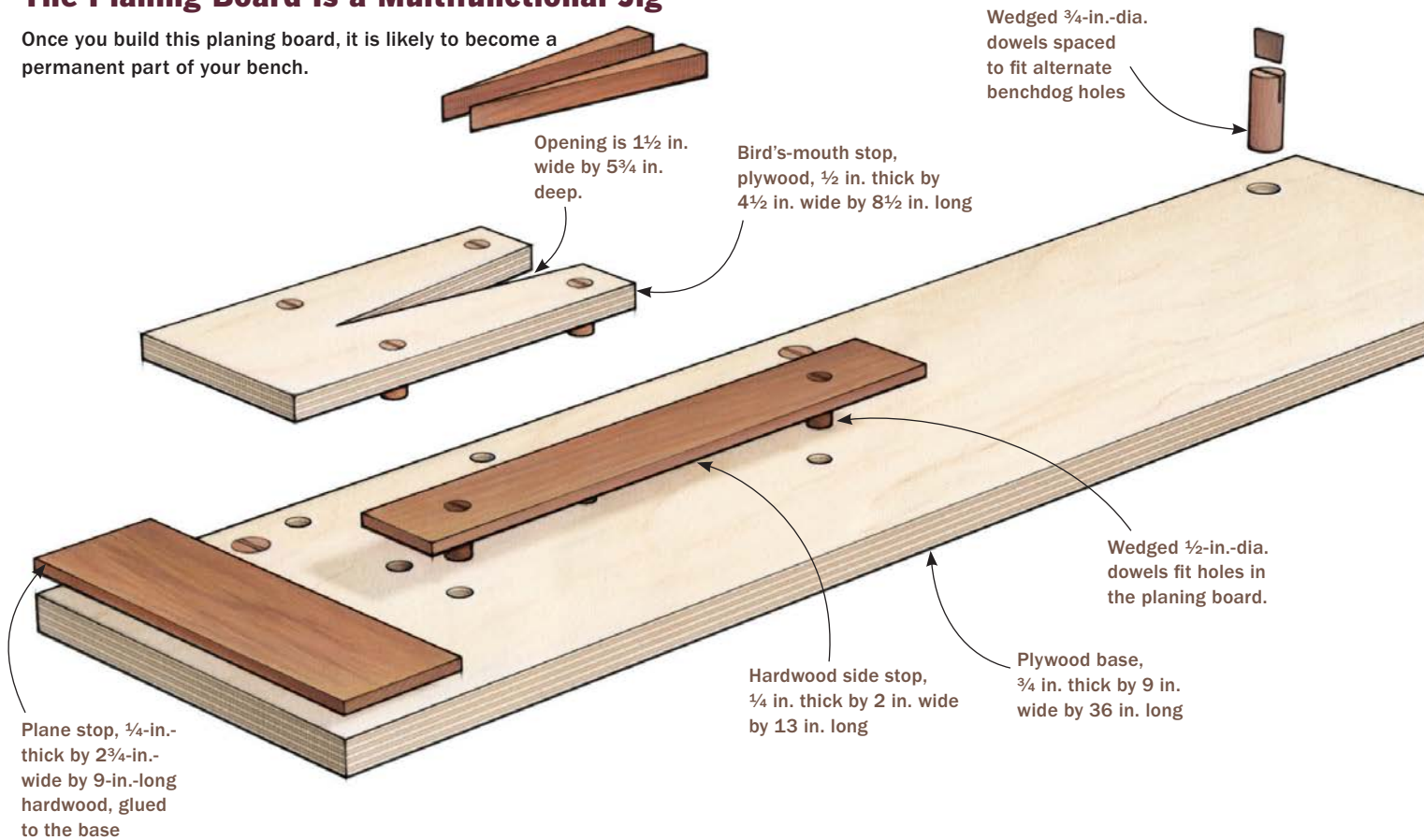
If I need to skew the plane slightly to lower the cutting angle and slice through difficult grain, I add a removable side stop that plugs into the planing board using two 1/2-in.-dia. dowels. This provides lateral support.

For jointing the edges of boards, I attach a smaller version of the bird's-mouth stop. In this way I can plane the face and the edge grain of a short workpiece without removing the planing board.



The Planing Board Is a Multifunctional Jig

Once you build this planing board, it is likely to become a permanent part of your bench.



Thin stock, no problem. When planing stock less than 1/4 in. thick, add an auxiliary base of 1/8-in.-thick Masonite so the plane will clear the stop



Side support. When you need to skew the plane or plane across the board, use the side stop to support the workpiece laterally



There's more. Once you've planed the face of the board, use the bird's-mouth attachment to plane the board's edge

4 Shooting board

When it comes to trimming the ends of boards, especially small ones, I turn to my shooting board. The jig, which hooks over the edge of the benchtop, consists of a base, a fence, and a runway for a handplane to glide along. The plane removes shavings in fine increments, leaving the board the correct length and the ends square and smooth, ready to be used in joinery.

The two-part fence, which supports the work and prevents tearout, must be exactly 90° to the runway and flush with the edge of the top base. The main fence is glued and screwed to the base, while the front face is screwed to the main fence so that it can be shimmed if needed. The best plane to use is a low-angle jack plane whose 37° cutting angle, long body, and large mass make it ideal for shaving end grain. Push the plane downward and toward the end of the workpiece with one hand, and use the other to secure the workpiece against the fence. This movement takes a little getting used to but soon becomes second nature.



Square and true. Place the board against the fence with the end fractionally beyond the end of the fence. Slide the plane past it, taking thin shavings until the end of the board is clean and perfectly square

Basic Shooting Board Planes Ends Square

Main hardwood fence, 1 in. thick by 1 in. wide by 11 in. long, glued and screwed to the upper base

Hole for mounting accessories

10½ in.

Hardwood cleat, 1 in. thick by 1 in. wide by 14 in. long, screwed to the base

5¼ in.

Upper plywood base, ¾ in. thick by 11 in. wide by 18 in. long, screwed to the lower base

3½ in.

Lower plywood base, ¾ in. thick by 14 in. wide by 18 in. long

⅝-in.-dia. T-nut embedded inside the lower base

Runway, 3 in. wide, with optional hardwood facing for wear resistance

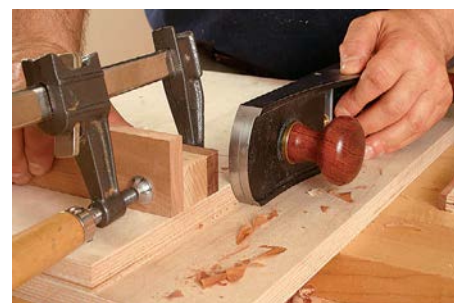
Front hardwood face, ½ in. thick by 1 in. wide by 11 in. long, screwed to the rear fence



Make a runway for the plane. The 3-in.-wide runway is formed by screwing the upper base to the lower base



A square fence is critical. If the front face of the fence isn't 90° to the runway, you can shim it



Trim the end. Before use, trim the fence flush with the edge of the top base. Clamp a piece of scrap to the fence to prevent tearout

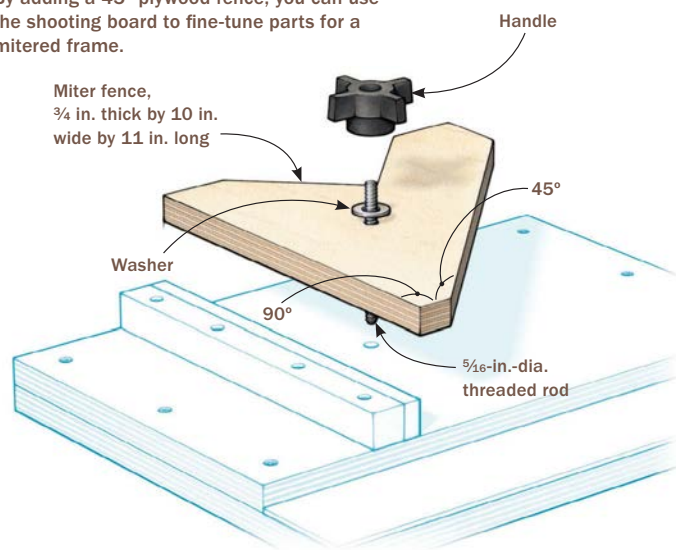
Two accessories for perfect miters

I recommend two easily installed attachments for this shooting board. The first is a triangular-shaped piece of plywood used to tune a flat, or frame, miter; the second is a larger block of wood with a face angled at 45°, used to trim a standing, or carcase, miter. Both

attachments are held to the base using threaded rod that is screwed into a T-nut embedded in the underside of the jig. This group of easily constructed jigs leaves joints that surpass those left by a machine, and does it quicker. *F&C*

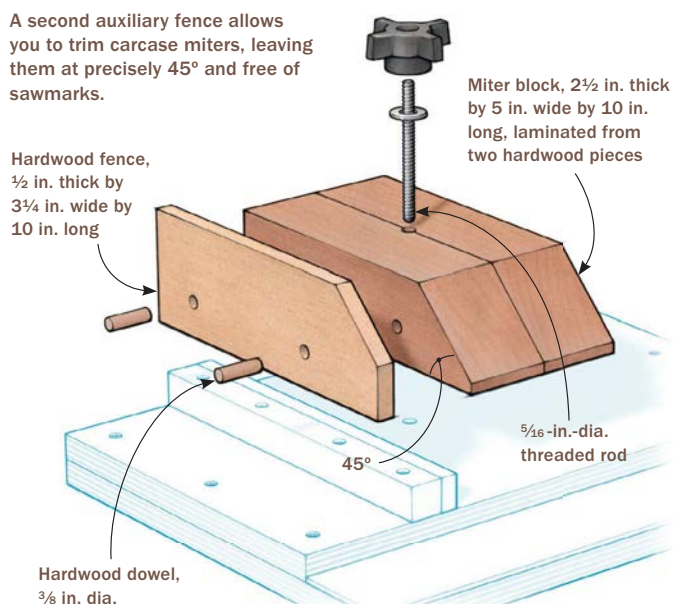
Frame Miters

By adding a 45° plywood fence, you can use the shooting board to fine-tune parts for a mitered frame.



Carcase Miters

A second auxiliary fence allows you to trim carcase miters, leaving them at precisely 45° and free of sawmarks.





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Maximum planing Capacity	:	310 x 220 mm
Maximum cutting depth	:	5 mm
Feed speed	:	6 m/min
Packing size	:	1,1670 x 680 x 1040 mm
Net/gross weight	:	292 / 357 kgs

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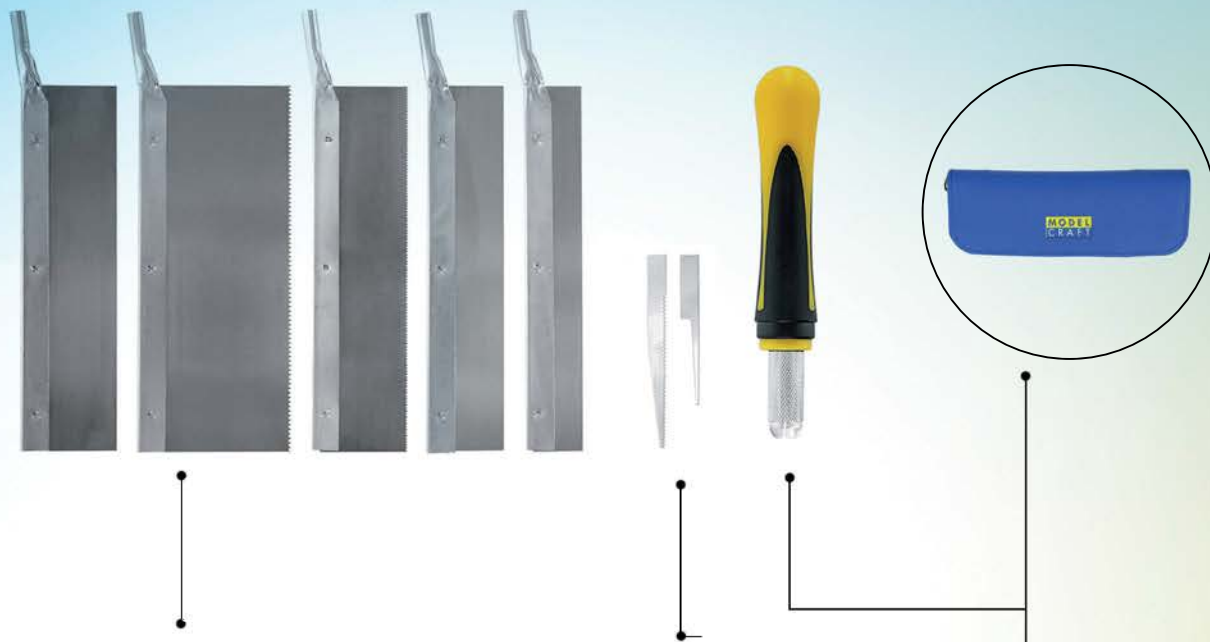
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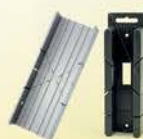
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Advanced WoodRat techniques – part 4

In the last of his series of articles, Steve Cashmore describes some advanced techniques using the WoodRat

PHOTOGRAPHS BY STEVE CASHMORE



Note

It should be noted that some of the techniques in these articles were learned many years ago on a course taught by Mike Humphrey, which has influenced my woodworking using this machine.

This month we are going to see how to make two different types of dovetail joint: a through-dovetail joint and a half-blind dovetail joint for the remaining two corners of the box started in the previous articles. Let's look at the joinery for the through dovetail first.

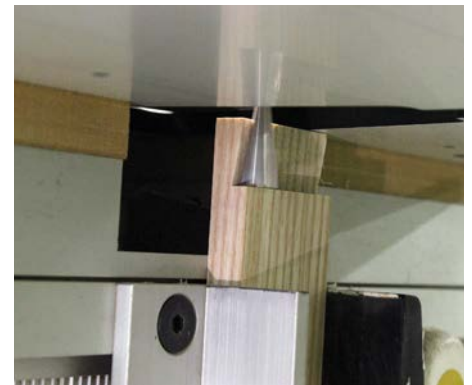
Through dovetail joint

The WoodRat is able to make dovetails of all kinds having any size or spacing and style that come to mind. You have the freedom to move the router bit or cutter into the wood anywhere you like. WoodRat sell high speed steel (HSS) dovetail bits with slopes or ratios which are the same as handmade dovetails. Tungsten carbide (TC) bits do not typically have the same finesse, many of them having

aesthetically unpleasing slopes and usually having quite a thick 'neck diameter' (top part of the cutting edge near the shaft of the bit). However, in some circumstances the HSS cutters can be too weak and break, especially when cutting into end grain, so selection of the right cutter for the size and species of wood you are cutting may be critical.

To make a through dovetail on the Rat we will use a straight cutter to cut the pins and a dovetail cutter to cut the tails. Place the dovetail cutter in your router, place some scrap in the cutter position, zero the cutter on top of the scrap and use one of the ash boards to set the depth of cut. If your scrap is, say, 20mm thick, I would make a dovetail-shaped rebate on the front face first. You must do this before cutting the cutter profile template (CPT), as this will mess up all the positions on the Rat. Next, pull the dovetail bit through from back to front (anywhere across the width of the scrap but somewhere near the middle) to make the CPT. Without moving the handle on the Rat, remove the

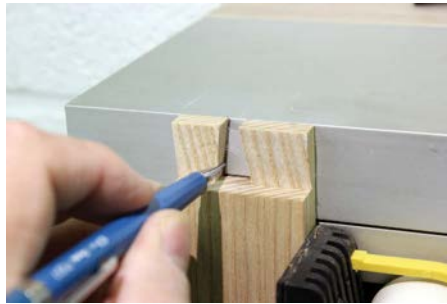
CPT and place it in the marker position with the same face facing you. You MUST place the top of the CPT (end grain) so it is flush with the top of the Rat body. Now trace the outline of the CPT onto the front face of the Rat body with a pencil. To mark out the tails I used a 'measuring jig', for a more detailed description of this jig, see my YouTube video at: <https://youtu.be/GUMZOL4X-qY>.



Making the scrap thinner before cutting the CPT

Before we use this jig we need to create a cutter centre line (CCL) on the top face of the Rat body. Use a V-groove or engraver router bit (e.g. Trend 11/5 X 1/4TC 60° V-Groove Cutter) in your router and pull it forward into a scrap piece in the cutter position. The router bit needs to be set no more than 1mm deep so that a very shallow straight groove is made in the scrap. Remove the scrap keeping it in the same orientation and place it in the marker position. Then using an engineer's scribe, transfer the bottom of this groove onto the top face of the Rat body. This is then reinforced with the scribe against a square a few times to permanently mark the body. This CCL is extremely useful and is used for jigs or whenever you need to know where the centre of any router bit is in the marker position.

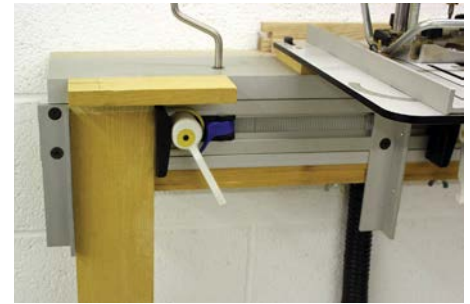
The dovetail cutter I chose for this is the WoodRat 8-7-24-12 HSS bit. It has a base diameter of 12mm, is 24mm long, and has a slope of 1:7. Now place the walnut board in the cutter position. Align the left-hand edge of the jig with the CCL. This will cut a shoulder of half the cutter diameter (6mm). Rotate the workpiece 180° and cut the



Tracing the cutter profile using the CPT

other shoulder. Now align the first mark (3mm) on the jig shelf with the CCL. Make another cut to increase the width of the shoulder, then again rotate it 180° and cut the other shoulder. Next align the second mark (36.5mm) on the jig shelf with the CCL. Make a cut, if you think it's not quite central, turn the workpiece round 180° and make another cut. You should now have two shoulders and a central dovetail socket cut.

Now this is where the fun starts! I used an 8mm straight cutter to create the pins in the ash board, as I had worked out that it would pass through the tails cut in the above steps.



Measuring Jig in the Marker Position

We will be using the centreplate and spiral cams, which come with the Rat, and the guiderails will be removed. The centreplate has a button with an orange hex bolt to secure it; this creates a pivot point for the router plate. First we need to calculate the settings for the button and cams for both cutters used.

For the button setting we need the slope angle of the dovetail cutter. My WoodRat cutter is 1:7 (a 'slope value' of 7). If you are using a TC cutter the angles are given as degrees instead. The equivalent slope value for TC cutters is given in this table.

Degrees	Slope Value
6	9.51
7	8.14
8	7.12
9	6.31
10	5.67
11	5.14
12	4.70
13	4.33
14	4.01

Now use the formula to calculate the button setting (BS)...

$$BS = \left(\frac{\text{DovetailDiameter} + \text{StraightCutterDiameter}}{2} \right) \times \text{SlopeValue}$$

In my case my button setting is $((12+8)/2) \times 7 = 70$.



Cutting the half socket shoulder

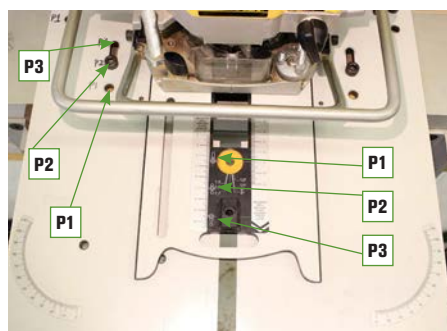


Completed tail board

Remove the guiderails and place the centreplate into the router plate. Ensure the base plate is attached to the body using the P2 holes and the router plate is pushed back against the orange backstop at the rear of the base plate. There are three P-settings for the base plate and centreplate, which are for different sized dovetail cutter diameters, from 3mm to 27mm or so. P1 is for very small diameter cutters and P3 is for very large cutters. Align the P2 datum line of the centreplate with the left hand button setting scale at the 70 mark. This corresponds to the button setting calculated above. Now tighten the button hex bolt.

Place some scrap into the cutter position to make a test pin. Fit the straight cutter (8mm in my case) in the router. Set the depth to the thickness of the tail board or thicker if you want – it's not important, the goal here is to get a good fit for the angled cuts. We must now set up the cams to match the angle of the dovetail cutter. Using a sliding bevel against the CPT drawn on the Rat

body, set the angle to match as closely as possible. Use the sliding bevel on the base plate to set the angle of the router plate and add the right-hand cam, twisting it round until it cannot move any further, then tighten the cam. Note the value on the cam scale and add the left-hand cam using the same setting. Now rotate the router plate so it slides against one of the cams and make the first cut while ensuring that the cam is



Centreplate fitted to router plate

constantly in contact with the router plate. Now repeat for the other cam. You should now have a single pin cut on the end of the scrap. Remove the scrap and cut off any waste either side of the test pin, then check the fit of the pin with the central cut made in the walnut board. You can measure the widest part of the pin with some Vernier callipers to check if it's the right size, in my case my dovetail bit is 12mm diameter at its



Closeup of centreplate showing button (orange)

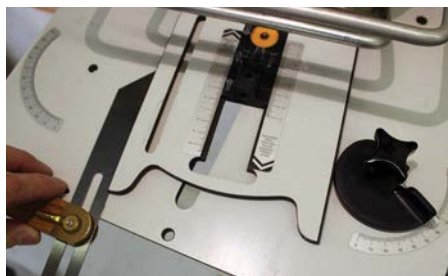
widest. If the cut pin is say 10mm wide then it's 2mm too thin and you need to adjust the cams. The cam scale has divisions where each one is $\frac{1}{10}$ th of a millimetre. To increase the test pin size we need to add 1mm to each cam (2mm total), which is 10 divisions. So if your cam setting was 60, now you need

to make it 70. If your test pin was too wide, say 14mm, then you need to decrease your cam settings by 10 divisions (1mm each/cam) from 60 to 50. You may have to cut a few test pins before getting a satisfactory fit, but once you have it make a note of which router bits you have used together

and keep a note of the cam and button settings for future use as these numbers won't change for the two selected cutters (unless either cutter is sharpened or changed for a different cutter. You know you have a good fit when the test pin holds the tail board by itself.



Setting sliding bevel to the dovetail angle



Setting router plate and cam spiral



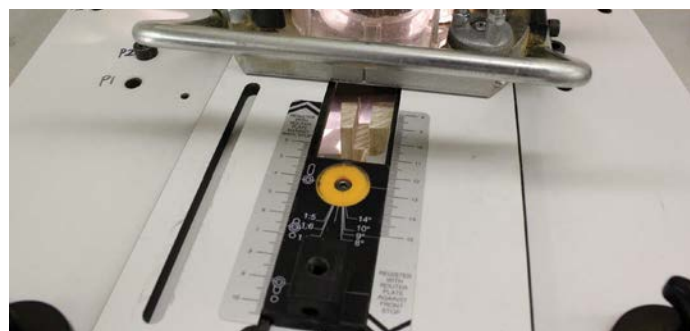
Final test pin with a good fit

Now put the ash board in the cutter position and the walnut board you cut the tails in earlier in the marker position with the top of this board flush with the top of the Rat body and align the left-hand shoulder up to the right of the CPT. For each alignment the CPT pencil line must be just showing. Now make the cut with the router plate sliding against the left-hand cam. Do not cut using the right-hand cam! Move the walnut board to align the CPT with the central cut in the walnut. To make this pin we need to make two cuts, one against the left cam and one against the right cam. But the router

plate must be kept against the cam while sliding the router plate during each cut. You should now have a middle pin. Now align the right-hand shoulder of the walnut board with the CPT and make the final cut against the right-hand cam. You will notice that some bits of the ash board are remaining and need to be cut so carefully remove them by cutting them freehand by eye. The waste parts will always be the parts that point towards the back of the router, the parts you want to keep will point towards you. You should now have a completed ash board. The final fit is spot-on!



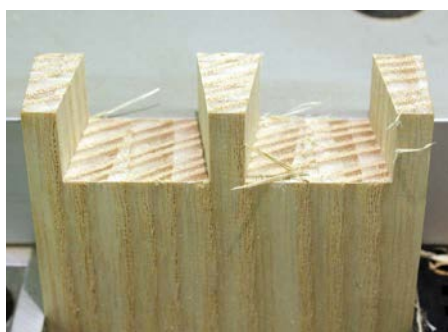
Aligning tailboard with cutter profile in the Marker Position



First half pin now cut



Closeup of central full pin



Final pin board



Pinboard and tailboard married together

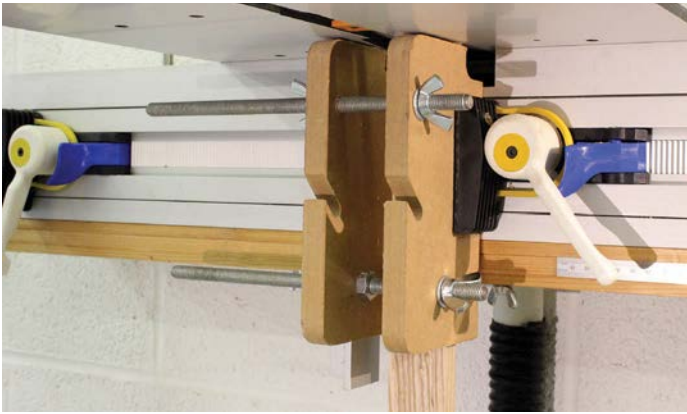
Half-blind dovetail joint

First we need to use the mitre box, which came with my Rat. You can also make your own. It's two manmade boards connected with two studding, some washers and nuts (M8/M10). The aluminium camclamp fence is drilled so you can screw one of the boards to it and the other one is screwed to the camclamp. The bottom studding and associated nuts are set to the width of the workpiece.

If the aluminium guiderails are not fitted, you need to refit them to the base plate. A CPT is made as described earlier using the dovetail

bit of your choice and marked on the body in the marker position. However, the depth of cut for the CPT is important here because it's a half-blind dovetail the depth will be less than the thickness of the workpiece. My ash board is 20mm thick and I decided to cut the tails at 15mm depth in the walnut board. Also, because we have introduced the mitre box we have to account for the thickness of one of the boards of the box, in this case it was about 15mm. I planed up a piece of ash to use as a spacer in the marker position. The

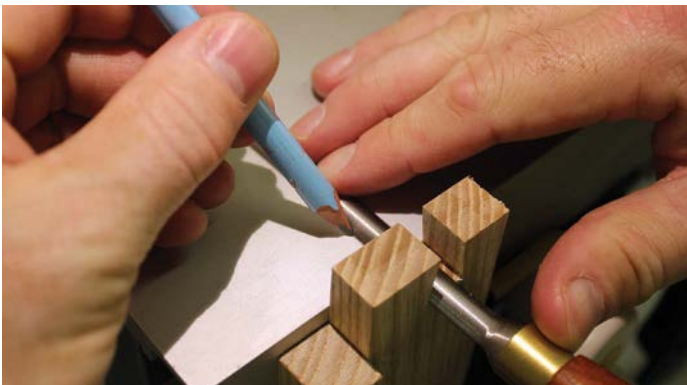
spacer must be used for everything that is placed in the marker position while the mitre box is being used. I set the height of the CPT such that the base of the cut dovetail profile is flush with the top of the Rat body and I used a dovetail chisel (you could also use a small square) that gets right into the corners of the dovetail profile so that this is accurately pencilled onto the top surface of the body. Do this for both corners of the dovetail profile so you end up with two straight lines either side of the CCL.



Mitre box



Set base of cutter profile flush with top surface of Rat body



Marking base diameter of cutter profile onto top of Rat body



Alignment of measuring jig for cutting the half socket shoulders

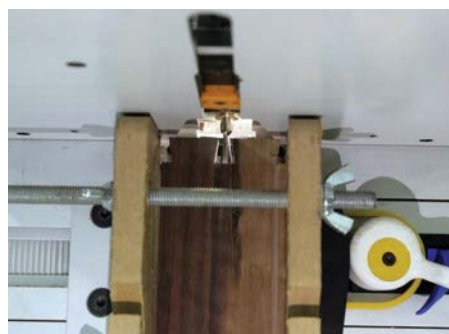
Set the measuring jig up in the marker position, and align the left-hand edge with the CCL, this will cut half the width of the dovetail bit for each shoulder. Place the walnut board in the cutter position in the mitre box in a vertical orientation. Cut the first shoulder then turn the walnut board around 180° and cut the other shoulder. Now draw a line at 36.5mm from the left hand edge of the measuring jig, which sets the halfway mark for this walnut board (73mm width), and align this mark with the CCL. Now make the middle cut. This completes the walnut board.

Set your marking gauge to the thickness of the walnut board

(15mm) and scribe this along the inside face of the ash board with the gauge fence referencing off the end grain of the ash. Now place the ash board in the mitre box, but in a horizontal orientation with the freshly marked face pointing to the ceiling. The end of the ash board to be cut is closest to the router. Set the widest part of the dovetail bit to just touch the scribed mark on the ash board. Now place the centreplate in the router plate and tighten the button bolt. The centreplate now acts as a stop by adding a hex key fixed with a star knob. The bent end of the hex key touches the front of the router body so that it cannot be pulled forward any further.



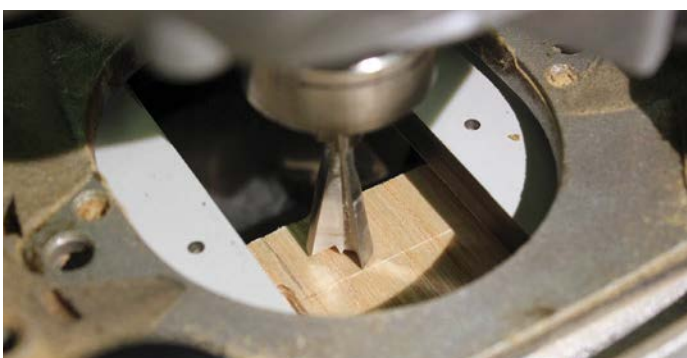
Alignment of the measuring jig



Cutting the central dovetail socket



Ash board in mitre box for cutting the pins



Alignment of cutter against scribed line on ash pinboard

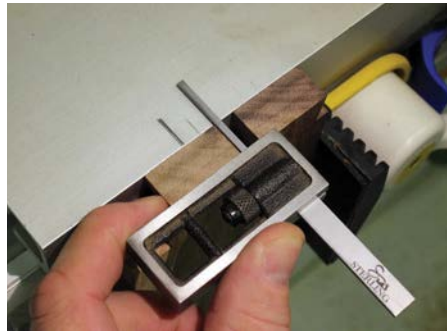


Setting the centreplate as a stop



Aligning tailboard to cut pinboard waste

Now the depth of cut is set on the router to the thickness of the walnut board. Place the walnut board in the marker position. The end grain must protrude above the top of the body by about 0.5mm. Align the board with both pencil lines between a tail. Make a cut into the ash board. This will remove a portion of the waste between the eventual pins. Now



Aligning tailboard to cover the pencil line

align the walnut board and use a square so that the right-hand pencil line is just covered. Now cut the left-hand side of the middle pin. Do the same using a square against the left-hand side of the left tail and align to cover the left-hand pencil mark, then make the cut. You should now have a large section of waste removed from the end grain of the ash board,



Paring the waste back to the scribed line

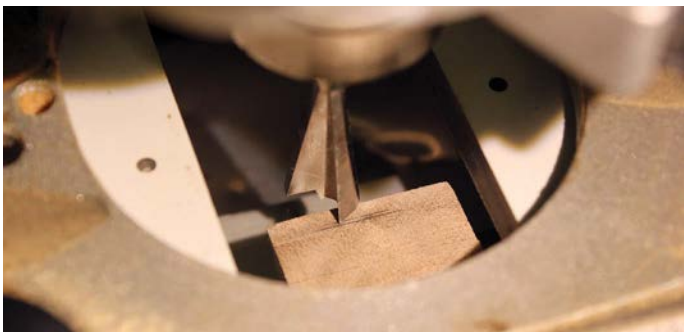
the left-hand end pin formed and half of the middle pin formed. Now repeat the method for the right hand tail of the walnut board. You should now have a mostly completed pin board, but you will notice that the tail board will not go all the way in. The remaining waste can be pared back to the gauged scribe line by hand with a sharp chisel.



Pencil denoting the difference between scribed line and waste



Transferring the difference to the tailboard with a pencil



Setting the cutter to the difference pencil line

Alternatively, a rebate can be cut along the back edge of the walnut board so that it fits into the pin board. The amount to remove for the rebate is equal to the amount of wood left between the pin board waste area and the scribed line. Remove the centreplate, if still fitted. Place the tail board vertically in the cutter position and bring it forward until the widest part of the cutter reaches the pencil



Finished tailboard after rounding over with a rasp

line. You now need to tighten the star knob to prevent the router moving in the B/F direction. Plunge the cutter to the same depth of cut used before. Now make the cut along the entire back face of the workpiece. You will need to round over the tails with a rasp to fit the rounded profile of the pins. The walnut board should now fit the pin board perfectly.

In conclusion

The completed box was glued-up and finished with Osmo raw, but I omitted to fill any holes or make any other 'fixes' to make the joints appear seamless in order to let you see the resultant joint accuracy from the WoodRat. So you may see a few 'issues' in the finished article. Of course the box is not going to win any design awards and was devised purely for these articles to show how to make several different joints! *F&C*



Completed half blind dovetail



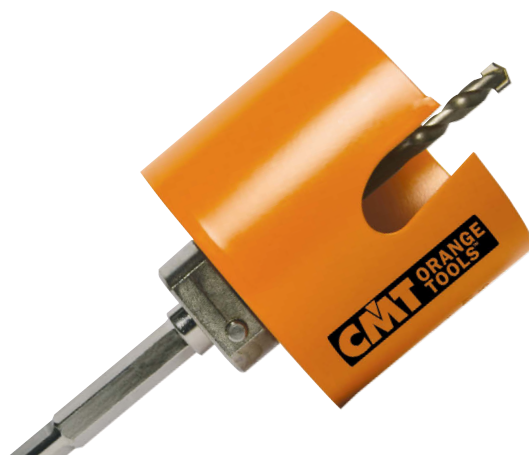
Completed through dovetail



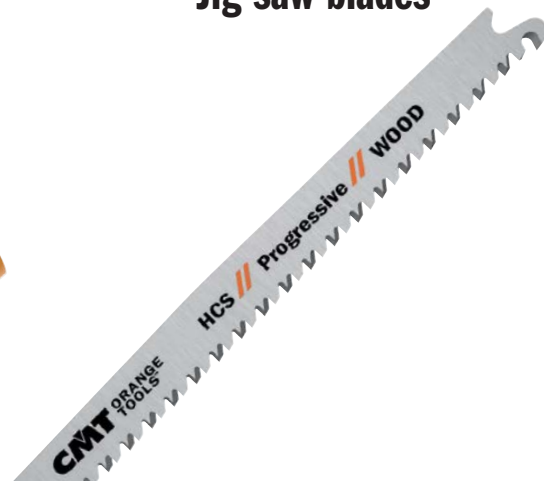
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KIT & TOOLS

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TOP ROW LEFT: Beautifully presented in a tidy little box with instructions
MIDDLE: Saddle squares on display
RIGHT: The sliding bevel locks down with a cam lock lever

BOTTOM ROW LEFT: Flat and definitely pocket size
RIGHT: 90° saddle

MINI TEST Bridge City Tool Works MT-2 Pocket Multi-tool

The fact that I spend a considerable amount of time surrounded by antique furniture and the tools that made them might suggest I'm content to live life in an industry that's in the autumn of its years, and to the casual onlooker that's probably what it looks like. But look closer and what you see is an industry in a constant state of renewal and development. Fashions come and go so it's always interesting to see how new collectors interact with styles that are new to them. Hand tools and the way we use them are no different. What's new to one person is invariably old hat to someone else and so it goes. Part of the attraction of making things is acquiring a set of tools that enhance the pleasure of creative work through their use regardless of when they were made.

Bridge City Tool Works has a worldwide reputation for designing tools at the very cutting edge of sophistication in both performance and looks. In the words of their founder John Economaki, 'Nothing is more important to a woodworker than his tools. They are as much about design as they are about function. A tool should be as compelling when not in use as it is when serving its intended purpose'. Often brightly coloured and skeletal in form, the Bridge City brand has been challenging our perception of what a woodworking tool should look like and to some extent even behave like for the last 35 years. Forget price points for a moment, that's a red herring as far as judging the true value of a tool, and instead consider the importance of connecting with tools rather than just using them. Maybe it's a tenuous link but I think it's one worth pursuing if you're intent on improving your game. While the Bridge City MT-2 Pocket Multi-tool won't appeal to everyone's aesthetic it is, as pocket size multi tools go, very useful. It comes with both a 1:6 and 1:8 saddle square for marking dovetails and a regular 90° saddle square all of which fold down neatly onto the stock of a sliding bevel. There's no denying this tool is made to very exacting standards from excellent materials chosen for their ability to perform for several life times. The sliding T square is bead blasted stainless steel and the stock is aircraft grade aluminium. But what about performance, what can it do that my individual squares and bevels can't? The answer is of course nothing unless you count folding into a pocket size slab for convenience and transportation. So is the MT-2 Pocket Multi-tool a workshop essential? Hardly. Is it a thing of beauty designed and made to the exacting standards of a fine craftsman? Undoubtedly. And that's the point.

From: www.axminster.co.uk
Price: £89.95

Makita Intelligent Job Site Speaker with Bluetooth

Makita's DMR202 Job Site Speaker with Bluetooth offers an extensive range of playback options. Powered by the Lithium-ion range of Makita 18v LXT and 10.8v to 12v CXT slide-type batteries, as well as AC power supply, this compact and lightweight speaker delivers 10.0 watts of output from the two-way speaker system. This model also features a 101.6mm woofer and 36mm tweeter. This updated version of the speaker features several new benefits including an LCD panel that displays song titles as well as the name of the singer or band. It can play music in USB Flash Memory overcoming the need to run via a mobile phone, and it has a repeat function that allows the entire playlist to repeat, or to be song-specific. Additionally, a play at random function can be selected. It is also equipped with Bluetooth Class 2 to wirelessly connect to your mobile device for playing music with a range of up to 10 metres. There is never a fear of losing signal or running your device battery down as the DMR202 can charge your device and play at the same time, offering convenience, versatility and greater safety.

Other features include AUX-IN jack; LED indicators to show power supply, maximum



From
£110

volume, and Bluetooth pairing/connectivity; an IP64 protection rating against dust and light rain fall, and a flat-top, anti-slip surface for the portable device. Within the speaker there is an integral compartment to store your portable device so it can also be charged while stored within the speaker for. Elastomer bumpers and a comfortable carrying handle complete this body-only model allowing you to use the existing batteries from Makita power tools.

From: www.makita.co.uk

FEIN celebrates 30 years in the UK

TOOL NEWS



This year power tool manufacturer FEIN is celebrating 30 years serving the British market. The family-owned business was first founded by Wilhelm Emil Fein in 1876, specialising in manufacturing physical and electrical equipment. Based in Germany, the company steadily grew and grew until 1895, when Wilhelm's son invented the world's very first electric hand drill. The motor powered drill was a world first and cemented FEIN's reputation as a pioneer in engineering.

Since then, they have gone from local innovators to worldwide champions of engineering innovation. With over 50 offices around the world, including in the UK, USA, and France, FEIN offer solutions for metal, interior, automotive, and more industries. The UK branch was first set up over 30 years ago, with FEIN knowledgeable of and prouder than ever to serve the UK power tools market.

One of FEIN's most recent innovations was the Starlock mounting system for oscillating, which was launched in 2016. The Starlock mounting system is the result of a joint development between FEIN and Bosch, and is the world's leading mounting system



for all oscillators. The technology renders a range of different oscillators capable of delivering various applications using accessories for accurately and efficiently sawing, sanding, cutting, filing, scraping off material, cleaning, polishing and power cutting, helping end-users cut down on time, labour and costs. The patented mounting system boasts high power and low vibration, and due to its unique star-shaped grip, it allows for multiple places with which to grip the accessory. The recessed, three-dimensional mount has been shown to enable a 45% increase in work speed.

Now, FEIN is shifting their focus to providing yet more cordless applications. FEIN produced the world's most versatile cordless magnetic core drill, the newest addition to their range of 16 drills. Compact, powerful and highly flexible, FEIN's cordless drills operate on a battery system and are the first in a new line of cordless devices. This year, FEIN has also unveiled their cordless grinders, hammer drills and much more.

Contact: FEIN
Web: fein.com/en_uk/

Handmade: Creative Focus in the Age of Distraction

By Gary Rogowski, published by Linden Publishing, INC

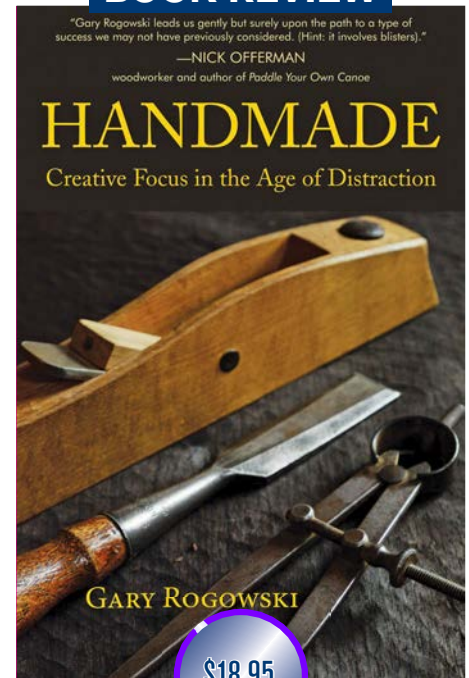
For the benefit of readers searching for the next compendium of tips and tricks to get them through their next build I should point out that *Handmade* is not a book about woodworking per se. Although it gets mentioned quite a bit, the discussions surrounding it are used to illustrate the virtues of mastering other skills. Complementary skills like patience, humility and persistence. Under the publisher's category heading Self-Help/Creativity, *Handmade* sits comfortably in the genre of books by other well known woodworkers such as James Krenov, Alan Peters, George Nakashima and Nancy Hiller, in that choosing to pursue a life as a maker is not only the easiest decision you'll ever make but also the hardest to live up to. Especially if you value your principles.

Gary succeeds in running at least two separate dialogues at any one time

recounting his exploits on various hiking expeditions in an autobiographical style. Though it makes for uncomfortable reading at times the outcome is always positive. No pain no gain. Those of us who have trod a similar rocky path through life will find plenty to laugh about though. I mean who hasn't lost a couple of full sheets of ply from their roof rack on the way home from the timber yard? And who hasn't found the solution to an impossibly complicated problem the moment you stop trying to solve it? For Gary these moments of clarity happen when he's out on the trail walking. 'What I see at this pace is easier to hold onto than when flying in a plane or riding in a car or on a bicycle,' he says, and I suspect that's the same for a lot of us if only we'd take the time to find out.

From: www.woodworkerslibrary.com/linden-publishing.php

BOOK REVIEW



Triton Pocket-hole Jigs

Triton's new range of pocket-hole jigs includes the Single Mini Pocket-Hole Jig, Double Mini Pocket-Hole Jig, Adjustable Jig and Pocket-Hole Jig sets. Perfect for use on materials 12mm thick or over, the new jigs create strong joints in a fraction of the time compared to more traditional methods. Various joints can be constructed, including frame corner joints, square corner joints, T-joints, mitre framed corner joints, plinths and angle joints. The jigs increase the speed and ease of making items such as fencing, kitchen cabinets, benches and tables, while improving profitability and producing a more professional finish.

The Single Mini Pocket-Hole Jig is perfect when the smallest, most compact jig is required. The jig is clamped to the workpiece and the drill bit is fed through the guide-hole and into the wood. The pocket-hole screw can then be driven in, followed by plugging the hole with a real-wood plug, resulting in a perfect angled, concealed joint. The Double Mini Pocket-Hole Jig is the easiest and fastest way to create two concealed joints side-by-side, and the Adjustable Jig is the optimum jig when concealed joints are required at various spacings up to 80mm apart. The adjustable ruler slide makes it easy to accurately determine where two holes should go.

From: www.tritontools.com



Peter Sefton DVD giveaway

This month we're giving away a complete set of Peter Sefton's Ultimate Jointer Series worth £39.98

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Giveaway 2: Peter Sefton's Ultimate Jointer series

The first DVD in the Ultimate Jointer series covers commissioning and tuning up a machine as well as maintenance and sharpening and setting blades. The second DVD covers a range of safe techniques.

In *A-Z of Jointer Set Up & Maintenance*, Peter demonstrates and demystifies setting up traditional HSS knives, quick change Cobalt knives and the TCT spiral block. He explains different cutting actions and the interaction between the cutter block and beds, for perfect cuts avoiding dangerous snipe and taper cuts.

Learn how to maintain your jointer in tip-top condition, set up beds for accurate work, recognise when blades are becoming blunt, how to sharpen blades without removal, and how to achieve flat, square and clean timber with a great finish.

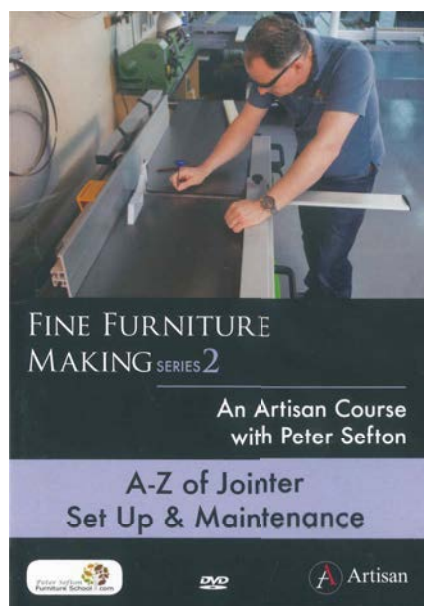
Make your jointer a pleasure to use and save yourself a whole lot of hard handwork.

In *Practical & Safe Jointer Techniques*, Peter shares his 35 years of jointer experience ranging from safely planing large twisted timbers through to edging fine delicate veneers.

He demonstrates hand pressure techniques, using push blocks, how to keep a constant feed speed and pressure for excellent results, all while using guards and safe planing techniques.

Learn how to reduce cutter wear, select grain direction and deal with interlocking timbers to produce the perfect finish. Remove both twist and cup from boards and get accurate face side and square face edges, producing boards to finished width and edging manufactured boards.

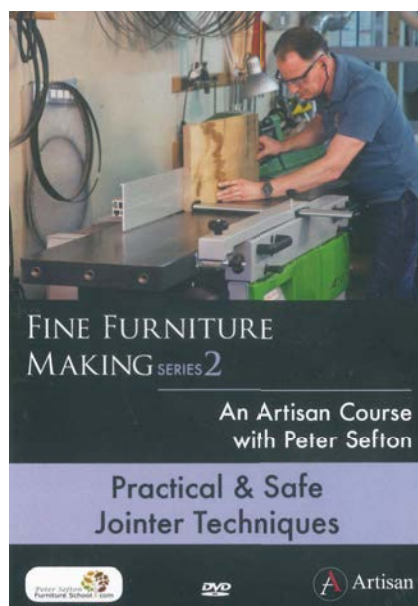
A must see for jointer owners.



A-Z of Jointer Set Up & Maintenance

DVD Contents:

- Choosing a jointer
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- Bed height & cutter block
- Different cutters & blocks
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- Thin timber
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- Using push blocks
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To enter the competition and see full terms and conditions go to:

WWW.WOODWORKERSINSTITUTE.COM/C/DVDGIVEAWAY2

Password: 2FCDVD Closing date for entries is 30th September 2018 Limited stock available

Out & about: The Palace of Versailles



This month we visit one of Europe's most popular attractions

One of the grandest palaces in the world, the Palace of Versailles is a French Historical Monument and a UNESCO World Heritage Site. Once the home of kings and queens, it is now one of the most popular tourist attractions in Europe and holds an outstanding collection of art and decorative objects.

History

Versailles' history as a royal residence began in the early 17th century when Louis XIII purchased land to build a hunting lodge. Between 1631 and 1634 this modest lodge was redeveloped into a much grander chateau in the classical style. At this point, Versailles was a place of retreat for the king, and he rarely invited guests there. This all changed with the reign of Louis XIV who personally oversaw a range of extensions and building projects that continued throughout his life. In 1682 the palace's role changed as it became the main residence of the French Court and government. After a period of neglect during the reign of Louis XV, Versailles returned to importance with Louis XVI, who chose to spend much of his time there and embarked on several projects on the palace's interiors. Versailles' time as a royal residence ended on 5–6 October 1789 when the demonstrators who took part in the Women's March on Versailles compelled the king and his family to return with them to Paris.

Although the furniture and many of the works of art were removed during the



The Hall of Mirrors

revolution, the palace continued to be an attraction, with guided tours still being organised. The palace really came back to life in the 1830s when it was inaugurated by Louis-Philippe as a museum 'dedicated to the glories of France'.

In the 20th century generous donations by

the American billionaire John D. Rockefeller paid for extensive restorations. The palace's curators dedicated themselves to refurbishing the rooms, and sought out the furnishings that had been scattered during the revolution. Their work continues to this day with ongoing restoration projects.



The Green Room



The Marie Antoinette Room

What to see

Containing over 60,000 works, the collections of the Palace of Versailles span a very broad period. The collections reflect the dual identity of Versailles, as both a palace occupied by the kings of France and the royal court, and later as Louis-Philippe's museum of French history. Masterpieces in the furniture collection include works by Martin Carlin, Jean-François Oeben, Jean-Henri Riesener, André-Charles Boulle and Jacob-Desmalter.

As well as the main palace, the rest of the estate includes the famous gardens, the park and the Trianon estate. The Queen's House

recently reopened to the public following extensive restoration work. The house is in the heart of the English-style hamlet that was built for Marie-Antoinette in the 1780s. The project involved cleaning and full restoration of the stonework, framework and roofing, using descriptions in the 18th-century work logbooks as a guide. The refurbishing of the house was based on inventories from 1810, when the Queen's House was used by Empress Josephine. At that time Napoleon commissioned Jacob-Desmalter to supply the furniture and several of these items will now be on display.

WHERE ELSE TO SEE... European palaces

Buckingham Palace

London, UK
www.royalcollection.org.uk

Neuschwanstein Castle

Schwangau, Germany
www.neuschwanstein.de/englisch/palace/

Palazzo Pitti

Florence, Italy
www.uffizi.it/en/pitti-palace

Royal Palace of Madrid

Madrid, Spain
entradas.patrimonionacional.es

Schönbrunn Palace

Vienna, Austria
www.schoenbrunn.at/en/



ABOVE: The Empress' Apartment at the Grand Trianon
LEFT: The King's Bureau made by Jean-François Oeben and Jean-Henri Riesener in 1760-69



Information for visiting

Address: Place d'Armes, 78000 Versailles, France

Website: en.chateauversailles.fr

Opening hours: Open every day except Mondays

Charges: €20 for access to the whole estate

Information correct at time of publication, check the palace's website before making your visit

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Social media dashboard

Bringing you a round-up of the best from the online world, plus a selection of the latest projects that have caught our eye

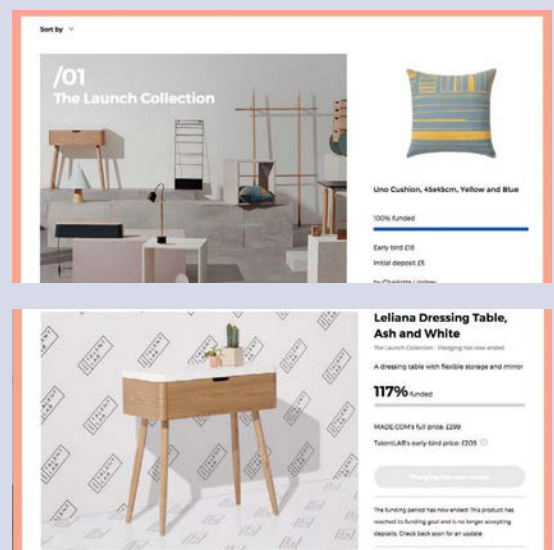
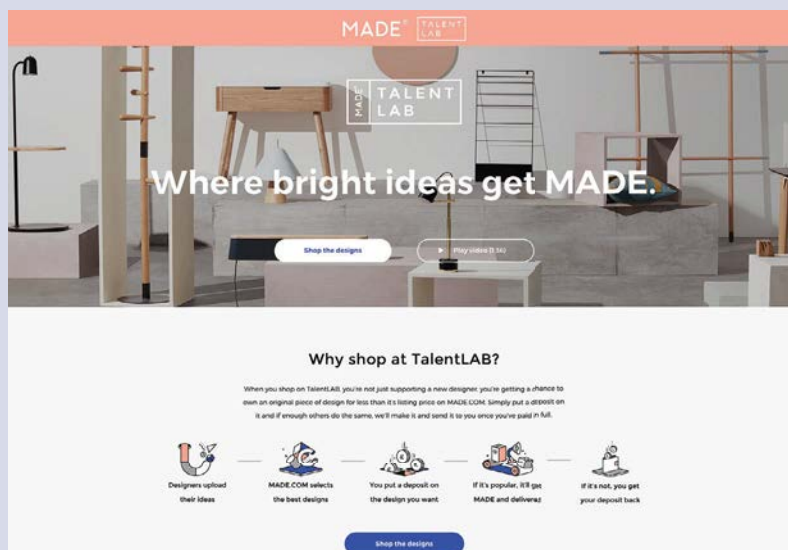
In this section of the magazine we bring together the best furniture and woodworking related content from social media. Here we'll recommend who to follow, where to comment and which online communities to join. We also feature projects we love, readers' letters, comments from the Woodworkers Institute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

Website: TalentLAB

MADE.COM launched its crowdfunding platform TalentLAB in autumn 2017. The site was set up to support new talent and unique design. Each month between 20 and 30 designs are prototyped, photographed and added to the site. People can

then pay a refundable deposit if they like a piece and, if it reaches its funding goal, the design will be manufactured and sold by MADE.

Address: www.made.com/talentlab

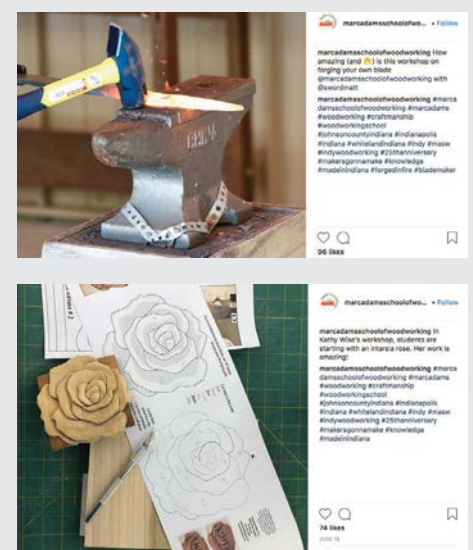
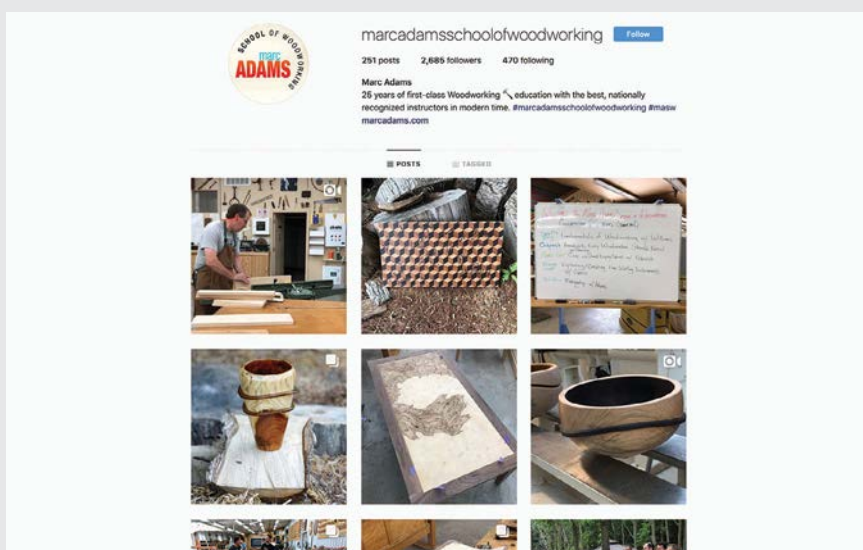


Instagram: Marc Adams

Marc Adams was the subject of last month's Back Page Q&A (F&C 274) and if you want to learn more about his woodworking school, Instagram is a great place to start. Here you can find out about the school's latest workshops and see the students'

projects taking shape. The school recently celebrated its 25th anniversary.

Address: [@marcadamsschoolofwoodworking](https://www.instagram.com/marcadamsschoolofwoodworking)





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

DELTA modular shelves by Woodendot

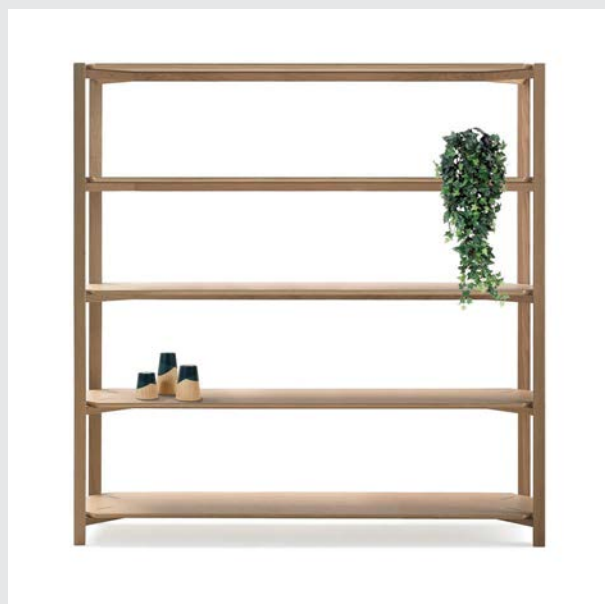
Madrid-based furniture company Woodendot collaborated with LaSelva Design Studio to create DELTA, a shelving system made up of geometric shapes that connect with each other causing an uninterrupted continuity. The horizontal triangular crossbars are joined at 90° with the vertical triangular stringers creating a stable structure; the shelves fit with the crossbars and at the same time maintain a separation distance with the legs, creating a link between the pieces.

The DELTA collection consists of four modules divided into two widths and two heights. The modules can be combined together either in a straight line or at a 90° angle. The union of two modules creates a nexus between them since the two

triangles become a larger one when connecting. One module starts where the other ends.

All the pieces are produced in solid oak and the solid framed shelves have a sturdy appearance. The system is completed with a series of trays that respond to extra needs with the same shape as the shelves, creating a link between the product and the trays. It is available in stained black oak and in natural oak. They are produced in a small town in the heart of the Tierra de Pinares (Land of Pines), an area with long associations with traditional woodwork.

woodendot.com & www.laselvastudio.es



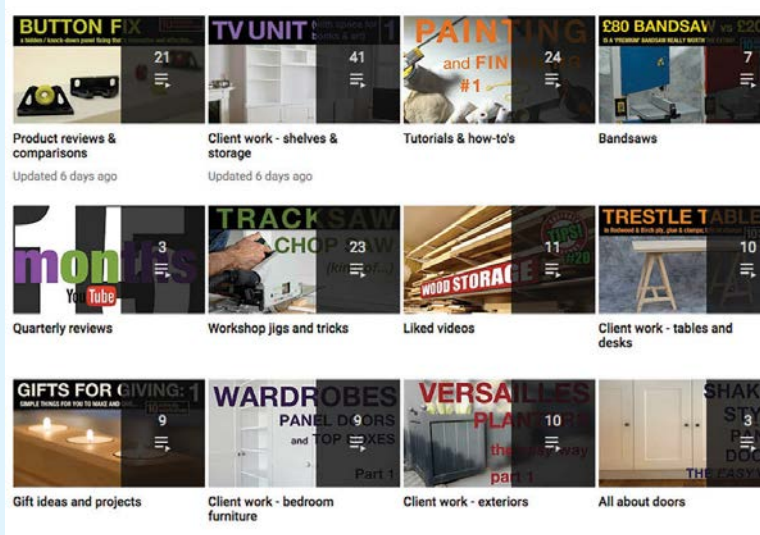
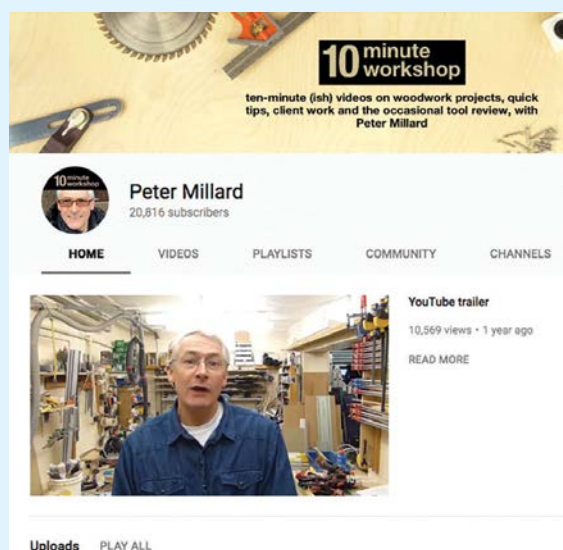
YouTube: Peter Millard

Peter Millard is a carpenter and cabinetmaker who runs his YouTube channel from his small workshop in West London. His channel started as an experiment where he uploaded a video per week for one year. Subjects include how-to guides, quick tips and

tool reviews. The videos offer a down-to-earth guide to woodworking in a small space.



Address: www.youtube.com/user/petermillard1/



An airbrush with the past

Derek Jones delves into *F&C's* archives
for Mark Ripley's hayrake table



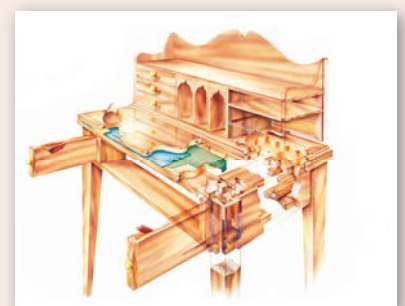


We're going back to February 2001 and issue 49 for this month's Airbrush with the Past for a closer inspection of Mark Ripley's interpretation of the classic hayrake table. The hayrake is something of a talisman for serious Arts & Crafts practitioners as it brings together a number of sentiments close to the movement's heart. Robust and purposeful, the undercarriage on these country-style tables can be a struggle to get right. Too heavy and you run the risk of it looking more agricultural than architectural; too light and, well it just wouldn't stand up to the task. It's widely accepted that the origins of the design come from Ernest Gimson and the Barnsley workshop's fondness for agricultural implements still in use in the Cotswolds at the turn of the last century. My personal take is that it resembles the roof structures of ancient wooden buildings, the most notable being vast storage barns like those at Cressing Temple in East Anglia. These structures would have been familiar to those working in and around them so it's only natural the benefits of such a construction would have an influence.

The Barnsley hayrake had square legs rotated through 45° with heavy chamfers along the edges; the rotation making it easier to align the stretchers running from the legs to the central beam. Mark's version also featured square legs but positioned square on to the table and with smaller chamfers. The joinery, at first, appears quite straightforward using a combination of stub and through wedged mortice and tenons. What's not obvious from the drawing, however, is that the tenons between the diagonal braces and the legs are dovetailed and therefore slide in from the side as opposed to inserting straight on at 45°. The tops on an original hayrake would have been made from wide boards running the length of the table and most likely include a breadboard end cap. Mark's version features sliding leaves so it can accommodate more diners. A complicated web of supports and runners add to the sophistication.

Next month

Next month we'll be going all the way back to July 1997 and issue 8 for another look at William Kirkbright's *Bonheur du jour*.



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Next month in

Furniture & cabinetmaking

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ON SALE 27 SEPT

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- English walnut CD cabinet
- Combi plane storage box

Tool Tech

- Optimise your blade geometry for a longer lasting edge
- A guide to low angle planes

Construction Tech

- Make your timber go further with double dovetails

Design Inspiration

- The London Style
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KSS 40 18M bl



18V Saw System

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Woodturning 317



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