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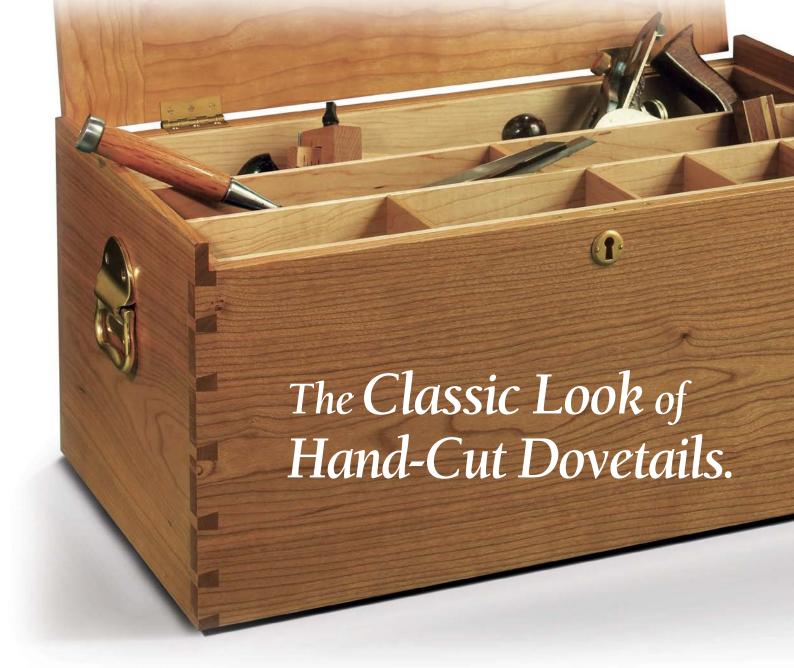




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ost of us these days are happy to expose ourselves, in varying degrees, through one form or another of social media, and on the whole that's probably a good thing; freedom of expression is something that we should celebrate, feel comfortable participating in and not shy away from protecting. However, such free and easy access to an insatiable demand for content comes at a price. I am, of course, in the first instance referring to quality over quantity but more importantly the lack of censorship over demonstrating unsafe practices. Don't worry, I'm very aware of how ridiculous that sounds so let me put it another way. If after watching two hours back to back of woodworking video clips on YouTube you decide to go out and buy yourself a tablesaw and use it just like the guy did in the video, who do you think might be responsible when you accidentally get a little too close to the blade? Yourself, the YouTuber, the guy who made the machine or somebody else in a long line of contributory

factors? For a start, a lot depends on where the practitioner is based, not least because of the physical difficulties in resolving cross border politics. I'll tell you who it is if you like but just so as you know, it's not the right answer; typically it'll be the one that can afford to pay the biggest fine. Unfortunately accountability is not always the same as responsibility and it's hard to pin down what constitutes best working practice across all continents. So here's a word of advice if you're creating content. In the UK there is a civil legal duty existing on every person to not harm any other person - by taking 'reasonable care'. This extends to any aspect of life that individual has control over. If you're on the opposite side of the screen consuming content and you hear the phrase 'guards removed for photographic purposes' or 'clarity' you might want to do yourself a favour and disengage immediately or just have your claims team representative on speed dial. Unless of course in the next sentence you hear 'and here's where the

guards should go' in which case pay very close attention.

While we're on the subject of mistakes, or perhaps just things we've done that we wish we hadn't, our book extract in this issue takes an almost microscopic look at surface preparation and the benefits of developing a robust pre-finish regime. See pages 46–50 for Michael Dresdner's expert guide to preparing wood.

We're also getting stuck into some basic joinery this month as I put the finishing touches to a bench that first saw the light of day more than a year ago. And for inspiration I think you'll agree the Somerset Guild's student competition gallery is nothing short of spectacular.

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Furniture & cabinet making

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

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www.woodworkersinstitute.com

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News& Events

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

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

Modified wood product could shake up the furniture industry



Furniture panels using 3Wood Bluegum (right) and 3Wood Blackbutt (left)

A n innovative 'smartwood' project is turning pulpwood into a material almost identical to tropical hardwood that is stronger and more environmentally friendly.

Researchers from the Flinders Centre for NanoScale Science & Technology (CNST) in South Australia have collaborated with Australian company 3RT Holdings Pty Ltd to develop a method for converting cheap pulpwood into a highly sustainable tropical hardwood substitute.

3Wood has the same properties as tropical hardwood but maintains a stronger dimensional stability and eliminates wastage. 3RT Managing Director Peter Torreele said the availability of the new 'smartwood' could make it easier to reduce the carbon footprint of the manufacturing industry: "Almost 40% of all logs in the world are being cut into chips for the pulp and paper industry. This 3Wood makes the harvesting of native forests unnecessary. We

are aiming to replace all applications where today hardwood would be used if it were available – furniture, floors, frames and there are other possibilities – it is endless."

3Wood is made from a complete log – including waste wood – and does not bleed out or stain nearby floors or walls. It is developed using ordinary pulpwood and a unique water-based adhesive that reacts with the fibres in the wood to make it stronger. This process compresses softwood to create a new product that is denser, harder and more durable than the original. The wood is then formed into a rectangular shaped block with dimensions of 1200 x 130 x 50mm.

CNST Director and co-developer David Lewis said 3Wood helped eliminate wastage and was a more environmentally friendly alternative to other products. "We can manufacture blocks of wood out of pulpwood with the same strength as a 100-year-old tree but without the problems," he said. "There is a lot of wastage in current hardwood production. If you take a big tree only a small percentage of that becomes hardwood, the rest is chipped and burned. We use a glue to stick it [the wood-waste] together and reconstitute it, get it into one block and do it in an environmentally friendly system. Our adhesive is formaldehyde free."

Tertiary college TAFE SA has designed a table from the new product to help give the research team a better understanding of the properties and demonstrate its effectiveness. 3RT are now in discussions with various companies around the world to commercialise the product.

Contact: Flinders Centre for NanoScale Science & Technology Web: www.flinders.edu.au/science_ engineering/research/nanoscale

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N.E.J. Stevenson creates luxury oak cask for decanter collection



This luxurious oak box completes the Macallan in Lalique Six Pillars Collection

Bespoke furniture company N.E.J.
Stevenson has completed its latest luxury commission, creating an exceptional oak box, encased in emerald leather with a rare Indian goat skin interior, to house the sixth and final whisky in The Macallan in Lalique Six Pillars Collection.

The box is veneered in burr oak with inlaid mirror polished copper sheet. The interface between the two materials proved an especially challenging element of the project, requiring the two sections to be made and fitted, then independently polished before

being reassembled. Internally, there is a hinged section that holds a book.

The partnership between French crystal house Lalique and The Macallan started in 2005, with the joint aim of celebrating the art, beauty, heritage and craftsmanship of both whisky and crystal making.

The final decanter in this collection is named the Peerless Spirit, and features a 65-year-old whisky from The Macallan – one of the oldest and rarest to be released from the distillery – and is housed in N.E.J. Stevenson's green leather and oak box.

Mirroring the focal peerless drop on the Lalique crystal decanter, a copper droplet is placed on the front of the cask, while the interior fitment has been lined with an exquisite rare leather made from Indian goat skin to give it a luxurious finish. The Peerless Spirit decanter and cask is set to retail at approximately \$35,000 USD and only 450 individually numbered pieces have been created.

Contact: N.E.J. Stevenson Web: www.nejstevenson.co.uk

'Check your chestnuts' advises Forestry Commission

The Forestry Commission is appealing to the owners and managers of sweet chestnut trees to step up their vigilance for sweet chestnut blight following the discovery of a tree with the disease in the summer.

A single sweet chestnut tree infected by the fungus *Cryphonectria parasitica* was confirmed on a private property near Maidstone, Kent after the owner spotted and reported suspicious symptoms to the Commission with its Tree Alert online disease reporting tool. The tree has been destroyed and a survey of trees within 5km carried out, with no further cases detected. The disease had been recorded only twice before in the UK, in 2011.

The Forestry Commission's website provides links to a factsheet and Pest Alert with photographs of symptoms to help owners know what to look for.

Contact: The Forestry Commission Web: www.forestry.gov.uk/chestnutblight

Winning schemes plant more trees in the national forest

 Γ our new woodland creation schemes have been awarded funding through the National Forest Changing Landscapes Scheme this year.

The National Forest Company Board met in July and approved the applications which will contribute nearly 9000 trees and 5.5ha of new woodland and other habitats to the Forest. The proposed schemes offer permissive access over almost 90% of their total area, along with a range of biodiversity and landscape benefits, linking into existing woodlands to contribute to woodland connectivity. Three of the schemes are in Staffordshire and one is in Derbyshire.

The next round will open in January 2017, and anyone interested in discussing a potential application should contact Simon West at the NFC on 01283 551211 or email: swest@nationalforest.org

Contact: The National Forest Web: www.nationalforest.org

Eclectic furniture company launched in London

S haun Brownell has founded a new furniture manufacturing company dedicated to creating 'electic, handcrafted furniture'. Named RhubarbLondon, the company's designs feature distinctive upholstery, which is sourced from original, vintage archives. Each piece embodies a slice of history, blending rare fabrics and antique uniforms with exquisitely applied upholstery techniques to create truly unique designs. An example of this is the Dapper Tweed Armchair, a 1900s mahogany French chair re-upholstered using a pair of vintage Dunn & Co Harris tweed houndstooth country jackets.

Company founder Shaun Brownell is passionate about traditional trades and maintaining classical upholstery techniques. His commitment to upcycling means he will never reproduce a chair, so every piece made by RhubarbLondon will be unique.

Contact: RhubarbLondon Web: www.rhubarblondon.com

The Dapper Tweed Armchair by RhubarbLondon



Father and son teams complete charity cycle challenge

wo father and son teams from British ■ Furniture Manufacturers (BFM) were among the 22-strong members of The Furniture Makers' Company cycling squad that completed the London to Bordeaux cycle ride. The team smashed their £50,000 fundraising target in aid of the industry's charity.

BFM vice chair Brian Ahern and his son

Michael, along with fellow association member Edward Tadros and his son Henry, completed the gruelling 450 mile ride over six days.

BFM was among the sponsors of the ride. Managing Director Jackie Bazeley said: "We're delighted that the whole of The Furniture Makers' Company team did so

well. It really was a herculean challenge and we were obviously particularly rooting for Brian, Michael, Edward and Henry. We followed their progress daily, wishing them all the 'Best of British'!"

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

Events

The North of England Woodworking & Power Tool Show

Always one of the highlights of the woodworking calendar, the North of England Woodworking & Power Tool Show, or the Harrogate Show as it is affectionately known, takes place on 18-20 November, 2016 in the newly refurbished Hall 1 at the Great Yorkshire Showground. The new hall was officially opened this summer and will be great for the show, with easier access, more catering areas and almost 20% extra exhibition and demonstrator stands.

There will be 40 demonstrators and almost 100 exhibitors on show, plus a woodworking clinic and great prizes to be won in the free raffle. Some demonstrators to look out for include Peter Tree (chair making), Wayne Mack (CNC machinery), Chris Tribe and Peter Sefton (furniture making), Nic Westermann (sharpening), Tom Thackray (Windsor chair making) and F&C's Editor Derek Jones (hand tools). Other demonstrations will include axe and adze carving, boat building, pyrography, scroll saw, plane care and woodturning.

This year's show is set to be something special, make sure you do not miss it.

When: 18-20 November, 2016

Where: Hall 1, Great Yorkshire Showground, Harrogate HG2 8NZ Web: www.skpromotions.co.uk



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The Craft Show at Fort Purbrook

These popular craft shows are now in their 25th year. Held in the historic Fort Purbrook building, visitors will be able to browse a wide range of crafts and speciality foods. There will also be demonstrations of craft techniques by some of the makers.

When: 5–6 November, 2016 Where: Fort Purbrook, Peter Ashley Activity Centre, Portsdown Hill Road, Cosham, Nr Portsmouth, Hampshire PO6 1BJ Web: www.woodlandcrafts.co.uk/craftshows-fort-purbrook

Handmade in Britain 16: The Contemporary Crafts & Design Fair



Handmade in Britain 16 takes place in Chelsea Old Town Hall in London

Handmade in Britain 16 is celebrating its 10th anniversary Christmas shopping event at the beautiful Chelsea Old Town Hall. Over three days, the event will celebrate the best in high-end design and craftsmanship from over 100 highly skilled, UK-based designer-makers. To celebrate the 10th anniversary show, all tickets booked in advance are two for the price of one.

When: 11–13 November, 2016 Where: Chelsea Old Town Hall, King's Rd, London SW3 5EE Web: www.handmadeinbritain.co.uk

Midcentury Modern Show

Fans of 20th-century design classics and modern collectables should head to Dulwich College for the Midcentury Modern Show. Visitors will be able to choose from a huge range of prices and styles, you'll be able to find everything from an original Cherner chair to a contemporary piece from a hot young British designer. As well as vintage furniture and accessories, the Show features the latest furniture, wallpaper, ceramics, cushions and gifts.

When: 20 November, 2016 Where: Dulwich College, London SE21 7LD Web: modernshows.com/the-shows/dulwichnovember-2016



The Weald & Downland Museum's Christmas Market features arts, crafts and food stalls

Christmas Market at Weald & Downland Open Air Museum

This bustling Christmas Market is located in and around the Weald & Downland Open Air Museum's historic buildings, with over 130 stands selling arts, crafts, food, unusual gifts and much more. Visitors can also enjoy meeting the Museum's working shire horses and the visiting donkeys. As well as craft and trade stands, there will be festive music around the site, hot chestnuts to ward off the winter chill, and other tasty seasonal treats to sample and buy, including a delicious hog roast. The Christmas Market is open from 10.30am and closes at 4.00pm. The £5 entry fee also includes entry to the Museum and parking is free.

When: 26–27 November, 2016 Where: Weald & Downland Open Air Museum, Town Lane, Singleton, West Sussex PO18 0EU Web: www.wealddown.co.uk

The Handmade Sheffield Christmas Show

Browse, explore and discover incredible handmade products from the best designers, artists and makers from across the UK at this Christmas craft market. You'll find high quality, unique gifts from jewellery, furniture, textiles and art to food and drink.

When: 3–4 December, 2016 Where: The Octagon Centre, Clarkson Street, Sheffield S10 2TQ Web: www.handmadeshows.com



The Midcentury Modern Show at Dulwich is a treasure trove for fans of design classics



Northern Contemporary Furniture Makers

Take a look at the latest projects from members of the Northern Contemporary Furniture Makers

he Northern Contemporary Furniture Makers (NCFM) is a group of professional designer-makers, all based in the north of England, who aim to celebrate and promote the excellence of high-quality furniture and support each other in artistic and professional development.

Dovetailors

Bespoke furniture makers Dovetailors love the chance to get their creative juices flowing and a new and rather unusual commission for a biplane bench has allowed them to do just that. This exciting design project was commissioned by a client who is an aeroplane enthusiast and expert. The brief was to design and manufacture two dining table benches in the form of a biplane's wings.

Dovetailors work closely with clients to ensure that their ideas are brought to life in the best way possible, and this project was no exception. The initial inspiration was the Sopwith Camel, a British fighter aircraft used in World War I. As it developed, the design retained the form of the Camel's wings but the struts were modelled on those of the Pitts Special light aerobatic biplane. Here, the wing shapes of each biplane bench which provide the seat and the lower shelf - were made from solid maple (Acer spp.). The legs and struts were made from solid sapele (Entandrophragma cylindricum), which was also used alongside walnut (Juglans regia) for the roundel motif.

Philip Dobbins

When Philip Dobbins arrived at Celebration of Craftsmanship & Design in Cheltenham in August for the Private View, he found a welcome accolade adorning his Tweed console table - a

CONTACT DETAILS

www.northernfurniture.org.uk **Dovetailors** dovetailors.co.uk

Philip Dobbins Furniture www.dobbins.co.uk

Robert Ingham Designs

www.robertinghamdesigns.com



Biplane bench by Dovetailors

Highly Commended award from The Worshipful Company of Furniture Makers.

Tweed was made with an 'engineered' Italian poplar (Liriodendron tulipifera) veneer, which is produced by rotary cutting the log. The commendation for the table described it as "a beautifully restrained and sophisticated design, executed with great precision and craftsmanship."

Robert Ingham

Robert Ingham gained an interesting commission from a client that he met while exhibiting at Art in Action, the joyous celebration of crafts that takes place in Oxfordshire. This console table with matching chair is made from wenge (Millettia laurentii) with a top and drawer front in silver-grey birdseye maple (Acer saccharum).



Console table and chair by Robert Ingham

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

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The Somerset Guild of Craftsmen Furniture Prize 2016

Chris Tipple, member of the Guild and organiser of the Furniture Prize 2016, tells us about a furniture exhibition for students and apprentices



Matt Duckworth (left) receiving his prize from Tom Kealy (right)

s the student makers arrive to collect their beautiful exhibits at the end of the 2016 Furniture Prize Exhibition, I am left with a slight feeling of emptiness. It has been a good exhibition, showing furniture designed and made to an exceptionally high standard and I will be sorry to see such beautiful work leave our gallery.

And so, from our new headquarters in Wells, the oldest Guild in the country, the Somerset Guild of Craftsmen, bring their 2016 Furniture Prize Exhibition for Student and Apprentice furniture makers to a close, and start looking forward to arrangements for the 2017 Furniture Prize.

On occasions, during the early months of organising an exhibition like this, I feel that I have been trying to push water up hill. However, when it all comes together, as it did so well this year, I am left with a warm glow of both pride and satisfaction, and that is all the motivation needed to start organising next year's exhibition.

It never ceases to amaze me how the student makers can achieve such exceptional standards of work, when many of them begin their course with little or no experience of working with wood. Clearly a natural talent is a prerequisite, but that talent has to be nurtured, encouraged and guided. As much as I admire the student's achievements I take my hat off to their teachers and mentors for bringing them to a standard to produce exhibits such as those in this exhibition.

The Guild's Furniture Prize Exhibition started six years ago, when the Somerset Guild of Craftsmen, together with Friends of Somerset Art Works, set a challenge to student furniture makers of Bridgwater College to create the finest piece of work for the year. Year by year the exhibition has grown. This year there were entries from four schools: Bridgwater College, City of Bristol College, Williams & Cleal Furniture School and The David Savage School of Fine Furniture. Additionally, Axminster Power Tools joined Friends of Somerset Art Works

"On seeing the high standard of the other competitors' work, winning came as an unexpected but very pleasant surprise. I am planning to use the prize money towards my next exhibition - Celebration of Craftsmanship & Design. To receive the feedback I did from such highly respected judges was fantastic and a real confidence boost. I highly recommend next year's competition to any aspiring designer-makers and a visit to the Somerset Guild for anyone interested in the crafts."

Matt Duckworth, winner of the 2016 Furniture Prize

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their precious time to the unenviable task of judging the exhibits. They selected winners based on the quality of design and quality of workmanship. The standard this year left the judges with a real dilemma. Although choosing the winner was fairly clear cut, selecting the pieces for the next prizes was nowhere near so easy with four very different exhibits, any one of which could have been chosen for a prize. After long deliberation the judges, still unable to split the runners up, decided to award a First Prize and two equal

exceptionally high standard with his Mallard Desk, and not only took first prize but also won the Popular Choice prize.

Second prizes were awarded to Damian Robinson's Writing Desk and Chair and Ali Buchan's Torii Gate Console Table.

All in all it has been a joy and a privilege to be involved with the Guild's Furniture Prize and I will look forward to 'pushing water up hill' again next year, if only to see the amazing standard of work that the students produce.

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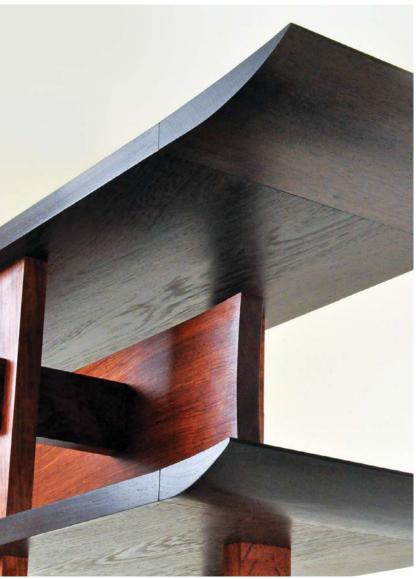
Damian Robinson made this writing desk and chair for his father-in-law. The primary work surface of the desk is topped with leather and has an elevated rear section that opens to reveal storage compartments and two removable pen trays. The strong angular lines present a modern, clean and simple design. The piece is made out of solid American black walnut (Juglans nigra), selected for its beautiful crown and mostly straight grain patterning. The rich brown tones and natural lustre of the wood all combine to give the desk and chair a sleek, timeless finish. Damian studied at the Williams & Cleal Furniture School









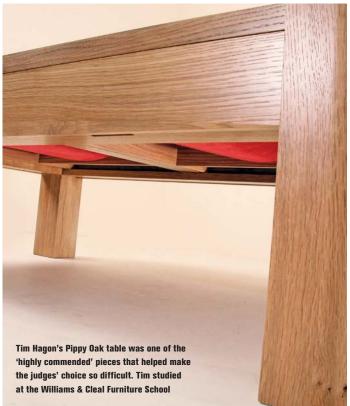


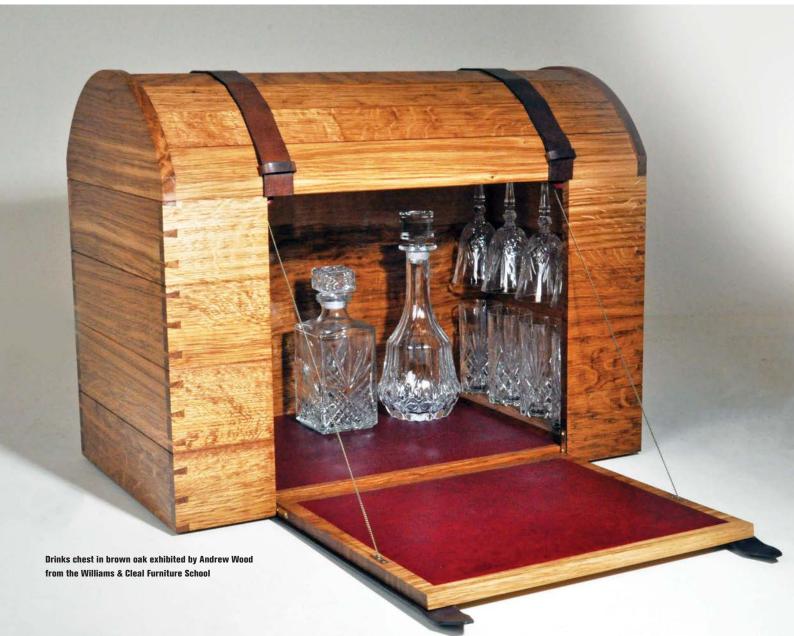


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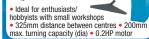
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PROJECTS & TECHNIQUES

Construction tech – mortise and tenons

n paper or to the uninitiated perhaps, carpenters and joiners are often mistaken for furniture makers and vice versa. In fact, before the mid-18th century and the introduction of veneered casework (cabinets) carpenters and joiners made all our furniture. And while there are some obvious similarities there's still the odd gap in skills and techniques when you consider the vast array of work that forms part of their remit. On the few occasions that I've spent time in a joiners 'shop I've become aware of just how much more economical they are with their labour. Maybe it's because the components are larger and not so manageable that they stay in one place for

longer and don't get moved around quite so much. Carpenters and joiners tend to be a little more relaxed about dimensions as well and not quite so obsessed with splitting the atom with every pass of a plane.

Then there's the use of machines. Typically a single setting will be sufficient to complete a number of identical processes negating the need for a lot of marking out apart from a squiggle perhaps to identify feed direction and orientation. In this respect I envy the joiner's skill at simplifying a task by knowing precisely where and when it's appropriate to dial in the small stuff. In a typical hybrid workshop, that's one with hand tools and machines, where there's a need to flip

between disciplines it's possible to blur the lines and think more like a joiner.

More than a year ago I set about building a new bench for no other reason than it seemed like a good idea at the time and, to be honest, I fancied trying out something different. Hefting large heavy components around the workshop is never much fun on your own and a full-on solo dry fit assembly can be something of a challenge, if not a physical impossibility. For a cabinetmaker bypassing this part of the process means throwing caution to the wind and putting the text book to one side for a moment and adopting a more pragmatic approach to the construction process. Easier said than done.

Re-learn the basics

One of the basic principles of good cabinetry is to resist the temptation to work from measurements in order to achieve that piston fit drawer or gentle puff of air from a nicely hung door. If you find yourself wanting to calculate how much to shave off a leading edge to make it fit, you're probably missing the point; this level of precision has more to do with what you can't measure, but can feel than what you can quantify and the techniques required to achieve those ends. Large or small, the most accurate way to determine a good fit between two components made from wood is by touch or by using the components as a template or feeler gauge.

The undercarriage for this bench includes four stretchers that are mortised and tenoned into the legs and then draw bored. The front

With the legs in place you can check and adjust things for square



Mark the shoulder lines close to the work top

and back faces to the worktop complete the joints that connect the legs with the bench top and are the last pieces to be glued in place. In this unfinished state the legs can be dropped into their mortises and squared up to establish the shoulder lines for tenons on the stretchers. Clamping the stretchers to the outside of the legs holds them in place while you work around the frame. I used the dimension at the top of the leg, where it joins the bench top, as a guide to setting out the frame in its intended position further down the leg. The shocking fact is I couldn't achieve 90° at every junction in both directions, but rather than lose sleep over it, I made some adjustments to create a structure that was not unduly stressed at any one corner.



Clamp the rails in place to hold the legs in position



Mark the tenons with a pin gauge

Bandsaw reality

I'm always impressed when I hear about woodworkers that have their bandsaw set up as a re-saw capable of slicing veneers from a solid piece of timber apparently without any run-out or deflection. While this level of accuracy is not beyond the realms of anyone with a bandsaw it's hardly typical. If the F&C workshop is anything to go by, the bandsaw gets a rough deal and is treated like the camp bike. Woodturners, for example, like to create bowl blanks on their bandsaws and therefore dull one side of the blade quicker than the other. General woodworkers like to resize offcuts on their machines

to suit their wood burning stoves. And cabinetmakers? Well, we just want to be able to set the fence and cut a straight line. Considering the aforementioned, I find this works reasonably well on thin stock so I can usually rely on the bandsaw for trimming the tenons to width. Annoyingly, the same cannot be said when it comes to cutting the cheeks; the all too common problem of run-out being the result.

If this sounds like the bandsaw in your workshop do not despair, you can still use the machine to good effect. Like flying an aeroplane, the trickiest moment is take off and landing. In sawing terms this

relates to establishing a good clean initial kerf (take-off) and not crossing the baseline at the other end (landing). Providing the table on your bandsaw is at 90° to the blade you can set a dead straight kerf to a depth of a couple of millimetres on the end of the board without the blade running out. This will be sufficient for an auto pilot

Shallow cuts can be made on the bandsaw without deflection



Use the bandsaw to create a kerf for a hand saw

take-off with a tenon saw. Admittedly the kerf will be wider than your tenon saw blade so just remember which side of the bandsaw kerf you need to place your saw. Cutting the cheeks before the shoulders means that crashing through a base line and into the tenon and substantially weakening it is less likely to happen.



Deeper cuts on the same machine can be a problem



Push the saw plate over to the inside of the kerf

Tenon short cuts

For the majority of time when I'm cutting mortise and tenons for furniture I'll start with the mortise and gauge the thickness to suit the tooling, either hollow chisel or mortise chisel. I'll typically gauge and knife mark the position of the mortise to help with registration on each component. It takes a little time, but gets me in the mindset required to create accurate joints. Larger scale joinery is more forgiving. A pin gauge line or pencil line is usually sufficient

For big mortises a pencil line is adequate and there's no need to mark every boundary



Opt for a mortise that can be cut in a single row

to set things out. The first mortise will get the offset mark from the face of the leg and the width of the mortise. The remaining mortises just get the width marks.

If you are using a bench top mortise machine you might need to get a little creative to work on large stock. The pillar on this machine can be unbolted and rotated 90° to operate off the base to one side.



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Construction tech - mortise and tenons

Quality dowels from offcuts

There are a couple of things that can affect the strength of a draw bored tenon but no more so than the quality of your dowels. The dowels perform an important role and need to be made from wood with the straightest grain you can find. Don't take chances here. I start by sorting through the offcuts first as this material has already gone through some kind of quality control. I'm in favour of using the same species for the dowels that the mortise and tenon are cut from. I don't think there's any empirical evidence to support my theory, but my

hunch is that the degree of compression between the components is better off matched than introducing a rogue factor into the equation.

The next step to producing the best dowels is to split them into billets with a chisel and not cut them with a saw. Green woodworkers have been using the inherent benefits of riven timber for centuries. Your blanks must be free from any defects or grain that even slightly veers off course. If you've chosen wisely the dowel blanks will split from the mother blank in nice

square sections. Any that don't can be placed on the pile for kindling. To make your square pegs round, use either a dowel plate or a block plane to knock the corners off. Creeping up to the finished size in a couple of steps is advisable if you are using a dowel plate. A tip here is to mark the finished diameter of the dowel by tapping it through the dowel plate a short way first. The indent gives you something to aim for if you decide planing is a better option. The final step is to put a slight taper or point on the end of the dowel that enters the hole.



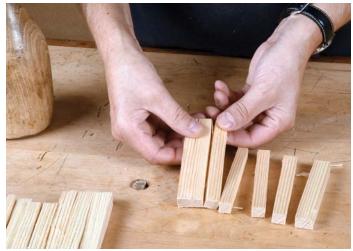
Reject offcuts that have even the slightest defect or deviation in grain direction



Look for a quartersawn pattern with pin straight grain on all four sides



Split the blanks and resist the temptation to saw



If each billet comes out around the same size you have chosen good stock



Use a dowel plate in decreasing sizes to knock off the corners

Draw bore 101

For maximum strength drill the holes for the dowels close to the edge of the mortised component, or in other words close to the shoulder line. This may look like a bad idea at first, but as the shoulder of the tenon will be drawn tight into the edge of the mating component any risk of splitting is minimal. This location also leaves the maximum amount of material behind the dowel hole on the tenon to resist splitting the tenon when the dowels are driven home. When you drill your dowel holes, place some scrap material into the mortise to prevent any breakout inside the joint. With the holes drilled you can now dry fit the joint and use a tipped drill bit to make a mark on the cheek of the tenon. To draw the joint together, the dowel needs to be forced off course slightly

as it passes through the tenon and into the hole on the other side of the mortise. So the next mark you make is about as critical as it gets. Move the hole in the tenon about two millimetres back towards the shoulder, effectively off centre from those passing through the mortise. In the words of a well known TV drill sergeant 'shoulders back, stomach in'

The next part isn't rocket science. Assemble the joint, use clamps if you have to and then drive the dowels into the holes. If everything has gone to plan the dowels will pull the joint together and render the clamps useless. In some circumstances there may also be a good argument for not using glue, but we'll leave that discussion for another day.



Protect the inside walls of the mortise with some scrap while drilling the dowel holes



Use a spurred drill bit to make an initial mark on the tenon



Re-mark the hole position a few millimetres back towards the shoulder for final drilling

Room for manoeuvre

The essence of good cabinetmaking is tight joints. Without them things start to move a little and then a lot until the whole ensemble falls apart. But, given that any rigid form, however well constructed, could encounter a force greater than that which it has been designed to withstand, we often need to introduce an element of flexibility to the structure. When building with wood the most destructive force will come from the material itself as it comes to terms with adjusting to various temperatures and levels of humidity. When making the top for this bench I tried hard to select boards that were quartersawn. These are easily spotted as the growth rings cross the section of the board on two faces, either a face and edge or two

faces. Boards that display this feature are less prone to cupping, bowing and twisting so make for a more stable construction. However, expansion and contraction in a linear direction across the boards is still very much an issue. Armed with this knowledge we can introduce joints that allow movement in a known direction. Mortise and tenons that incorporate a loose tenon are a good example and those produced with a Domino are quick and easy to apply.

It's not imperative that the bench top has an end cap, but it will certainly help to reduce the ingress of moisture through the end grain and therefore splits. The cap will also help to keep the top flat. This type of construction is typically referred to as a breadboard end and usually incorporates either a single sliding tenon or a series of draw bored tenons. For a bench top attaching the end cap with lag bolts is fast and effective. Creating slots for the bolts to pass through rather than holes allows for movement. No amount of glue will prevent the top from expanding if that's what it decides it wants to do so going dry with this joint is perfectly fine. I'll be applying a durable oil finish to the bench when it has been levelled making sure the joint gets a good soaking. The final step to complete the joint is to wind the bolts into the end grain with a socket set. Carry out a few tests on some scrap beforehand to establish the right size pilot hole, lubricate the bolts with wax. F&C



Loose tenons on quartersawn stock is the most stable solution



Cut slots for the bolts and use washers to avoid compression around the holes



Apply wax to the bolts to ease the assembly



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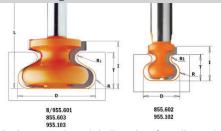
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Q What led you to furniture making?

A I can recall approximately when it all began, but I have never been able to figure out why. Well before middle school I found myself whittling balsa wood, and for some reason the activity pleased me so much I continued to explore it. My ancestors were not woodworkers, so it certainly wasn't about carrying on any tradition. I suppose the material itself just captivated me (as it continues to do), while the subversive act of making something by hand in an age (1980 or so) when all the smarter people were going on to found world-dominating computer firms must also have been compelling. I am from a small, dying town in Michigan and left for California as soon

as I could. Of course I didn't manage to stay in California but got around a bit before returning. Sort of.

My academic background is pure comedy and a discussion of it would distract us from the subject at hand. As for biographical influences, James Krenov won my allegiance by the time I was 14 or so, even though I had been doing nothing but carving up to that point. My early cabinets look like Krenov cabinets with carvings stuck on them. I went to the College of the Redwoods when I was 21 (after cutting short a gloriously disjointed course of study at the University of Michigan) to study with Mr Krenov. I spent a year there and figured I had everything I needed to conquer the world. At least my arrogance

was not lacking even if, in hindsight, everything else was.

Q Do you consider yourself a maker of Studio Furniture, that is, a majority of speculative pieces, or is your work mostly commissioned?

A I had a beautiful life making speculative furniture for Pritam & Eames, a gallery in New York, during the late 1990s and early 2000s. I would put together a show every couple of years and I managed to sell pretty well. The bottom fell out and now I do commissions. I have great clients who give me freedom, but I have been having a hard time locating my arrogance. I miss it.



The elegant White Cabinet made between 1997 and 2002

Q What are your favourite considerations when you pieces of your own furniture? set out to make a piece?

A There is a piece called the White Cabinet, which is pretty early [pictured above]. I think it all came together: proportions, wood, scale, grace. It was good.

Q Have you been nominated for or won any awards?

A Ha! Probably. But I can't recall them. I got an honourable mention plaque from some veneer contest, and it came in handy as a pushblock for the bandsaw. I am about to give up hoping for an honorary degree from Harvard.

Q Please tell us a little about your approach to design or making: what are your

set out to make a piece?

A Well, I know it is not polite these days, but sustainability is about the last thing I think about... unless of course we are talking about sustaining my poor self. I suppose ideas for forms come from all over the place, but I try not to look at too much furniture. The little, useless cabinets of my glory days didn't have much to do with function. Tradition must be in there somewhere, but I am rather unstudied so I am not sure.

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

A I really can't think of anything overt. Maybe I suppress the sources in order to feel more original. I like wood. That is probably as good a reason as any to hang out in the 'shop.



A Probably Oriental. I lived there [Brian and his Japanese-born wife Mari, moved to her home country in 1997] for a while – and straight legs are a little boring.

Q A lot of your pieces appear as though they have 'just landed' – is there some kind of alien influence?

A I feel like an alien.

Q Your cabinets are very sculptural shapes, quite unlike traditional cabinets: which comes first, the shape or the purpose?

A Shape always comes first.



The interior of the White Cabinet

Q Straight lines are few and far between in your work, does this mean there is a reliance on laminating?

A More than a reliance. I have endured the laying up of a million layers in my career. The vacuum press was my companion. But these days I would rather cut a shape from a chunk of solid wood. Less finicky (do you British have that word?). [Yes, pleased to say we do, Brian.]

Q Some of these shapes must call for unique hinges or hardware. Do you make these yourself?

A Hinges are a nightmare. If I could buy them I would, but I can't, so I make them. It is a challenge. (Goodness, I am sounding a little cranky now. Probably I should take a break.)

Q Surface pattern is obviously an important aspect of your work. Is this influenced by the material or is the material the answer to a bigger question?

A I think that a slab of wood or veneer is lovely, but parquetry can make the whole cabinet more interesting. However, there is a technical reason to use small patches of wood to cover a surface: the compound curve will not accept a full sheet of veneer without cracking, and therefore small pieces of veneer are applied either one at a time to the surface or in rows.





Zushi is decorated with an elaborate veneer pattern

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The Dinosaur Cabinet made in 2009



Detail of the Dinosaur Cabinet



The Dinosaur Cabinet's doors were coopered, cut out and then carved

Q Zushi is an incredibly complex structure. Would it be possible for you to explain the nature of the top of the piece?

A The Zushi doors are solid African blackwood coopered, cut out and then carved. [The Dinosaur Cabinet uses a similar technique, both are shown on pages 28–29.]

Q The bottom doors of Zushi are also quite elaborate – how was the pattern created?

A The base of Zushi was veneered over a core of solid basswood (lime), stabilised with cross-banded basswood veneer and then covered with the blackwood veneer pattern that was cut out using the Boulle technique (or whatever it's called) and then glued on one spiral at a time. [It is Boulle, by the way, named after the cabinetmaker to King Louis XIV of France, who was one of its greatest practitioners.]

Q What style of project is in store for you and your company?

A I wish I could call it a company, but if it were, I would say it's headed for the ditch. In fact, I am working on prototypes for woodsoled shoes at the moment. We will try to call that a proper company, and it will be headed to the stratosphere, monetarily speaking.





Ebony blanket chest made in 2009

"James Krenov won my allegiance by the time I was 14 or so, even though I had been doing nothing but carving"

School time

Since 2007, Brian has taught students in his workshop in Fort Bragg, California. Classes have explored compound bending techniques that he perfected while living in Japan, pierced carving techniques, router inlays and veneered surfaces. To contact Brian about classes and to see a gallery of his work, please visit his website at: briannewellfurniture.com

PHOTOGRAPH BY YOSHIAKI KATO

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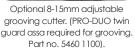
Smoking Chair made in 2005



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Precisa 4.0 P-2	Professional	Inc 1.4m STC + TWE + TLE (ditto)	3.5 / 5.2	87 mm x 800 mm	£2,025.00	£2,430.00
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Precisa 6.0 P-2	Professional	Inc 2m STC + TWE + TLE (ditto)	4.0 / 6.5	110 mm x 1400 mm	£2,600.00	£3,120.00

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

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Editor's round-up...

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

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

few months ago I repurposed a couple of old hammers partly for fun but mainly because there are very few tasks that cannot be made more enjoyable by swinging a few ounces of forged steel on the end of a hickory stick in its direction. The simple things in life are also some of the most rewarding.

We've been dismantling the *F&C* workshop this month in preparation

for a major overhaul of our premises. As quaint as a pre-war converted chicken shed is, it's proved hard to maintain and the power cuts, although not frequent, generally occur at the least opportune moment. The upshot is that I have been enjoying swinging my hammers to fit out what will become a new workspace in the suburbs where the facilities are 'homely' and the services constant. Of course a workshop

isn't complete without a workbench and this generally results in upsizing a range of familiar joints and some beefy hardware to construct something that you really only want to make once. This exercise is bench number eight or nine for me and I've already got my eye on 10 and 11. Fortunately for the things that you can't produce in-house there's no end of choice. Here's a selection of what passed through the workshop this month.



The Editor has been working on a new workbench

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Optimus CNC router

New from AXYZ International, the Optimus CNC router is a specially engineered allin-one solution for the cabinetmaking and fine furnishing production sector. Available in three machine sizes, the router offers multiple customised machine configurations, a range of special machine tool options and dedicated software. Key design features include a heavy-duty steel base for enhanced stability, high-speed machining and a superior quality of cut, a twin-head routing/drilling carriage and an integrated dust extraction system to provide a safer and cleaner workplace. Specially designed machine options include a range of highpower spindles and multi-spindle drill heads for enhanced cut quality and machine performance, a 10-station automatic tool change (ATC) facility for work requiring multiple tool functions and a fully automatic sheet-handling system for optimum speed of production. A hose management and dust extraction system that ensures a clean, hazard-free workplace completes the range of machine options available.

All Optimus machines are built to order, so the price is contingent on size and the number of additional production tool enhancements required. Look out for our test of the Optimus router in a future issue of *F&C*.

From £151.69

UJK Technology workbenches

Axminster Tools & Machinery have recently introduced two new workbenches to their UJK Technology range. One takes Parf dogs and the other twist dogs. Both benches' frames are made from high quality birch plywood with storage in the centre of the frame for dogs and other accessories. Cutouts in the frame enable it to fit onto the Brennenstuhl trestles, forming a strong and steady workbench. The front and rear aprons have plenty of twist dog holes for aligning workpieces vertically and cutouts offer accessibility for clamps. The worktop for both benches is 18mm thick Valchromat; moisture resistant and engineered for added strength, it won't warp and affect the accuracy of your work. The choice is between the holes in the tops: one features plain 20mm holes for Parf dogs, the other takes lockable twist dogs or Parf dogs. These dog holes allow you to use Parf dogs to make perfect right angle or mitre cuts with a track saw. Alternatively, guide rail clamps can be inserted in the holes for surface clamping making an excellent assembly table. The trestles fold almost flat, saving space when not in use and making transportation easy.

The bench with twist dogs comes with one pair of these dogs. The twist dog's unique feature is a pin through the spigot. This pin securely locks the twist dog into the specially drilled twist dog holes in the front and on the top of the workbench. Made from hard acetate plastic, these dogs will not damage cutting edges in the case of accidental contact. Twist dogs use the alignment of the workbench's holes to set up fences, guide rails or workpieces. The bench with Parf dogs also includes a pair of UJK Technology twist dogs, an invaluable feature when aligning the workpiece vertically on this bench.

A blank Valchromat worktop is yet another option available. The frame and tops can be purchased separately for those wanting to make a permanent workshop bench. There is also the option to purchase a blank worktop for £79.96.



From



Proxxon's new range of cordless power tools are battery powered versions of MICROMOT tools and run on 10.8V batteries. With the 10.8V (2.6Ah) lithium-ion battery, the cordless model gives a performance equal to a Proxxon mains powered tool. The battery will charge in one hour, with at least 30 minutes run time in continuous use. The LG Battery Charger has an integrated temperature control and charge level function control. A simple LED display lets you know when charging is complete. Tools within the cordless range include the IBS Drill Grinder, BS Belt Sander and LHW Long Neck Angle Grinder. These tools are available with or without the battery. Tool and battery kits are supplied in a sturdy tool case.





Veritas mortise chisels

These mortise chisels from Veritas are available to buy individually or as a set of five. Their blades are designed to give accurate registration in a mortise. The chisel sides are slightly relieved to reduce sidewall friction and allow for minor cut corrections. Each has a 25° primary bevel to make deep cuts easier, with a 35° secondary bevel to give them a durable cutting edge. The bevel's heel is rounded to aid in levering out waste. The chisels come with hard maple handles, which have been stabilised to prevent swelling and shrinkage caused by humidity changes, and is contoured to fit the hand nicely. Shallow flats parallel to the blade sides provide tactile cues for blade alignment and finger placement. Overall lengths range from 295–310mm and blade lengths range from 140–160mm. Only final honing is required before use.

Bora jigsaw guide

This guide slides directly along the T-Track of a Bora WTX Clamp Edge. The sliding side points and locking screw allow it to accommodate almost any size jigsaw and its adjustable pointer guide keeps cuts true. It's very unobtrusive as the saw rests easily and snugly without clamping the saw itself. These features allow for a quick change in moving from one type of cut to another. An additional feature allows the user to cut a 360° circle using a cut piece of wood that can be screwed to the jigsaw.





Weatherseal and milling cutters

Trend have recently added two new weatherseal recess cutters and a new large diameter tenon milling router cutter to their Professional Range of router cutters. The 8mm shank guided weatherseal cutters have bearings mounted on the shank with 8mm shank diameter to allow use in smaller medium-duty routers. The bearing guides the tool to ensure a consistent depth of cut and creates a stepped groove to suit weatherseal. The two-fluted Tungsten Carbide Tipped (TCT) tool will give a clean finish in timber and longer life. Cutters are available to suit the Aquamac 63 and Aquatex A10 window seals and Aquamac 21 and Aquatex P6 door seals.

The large 50.8mm diameter tenon cutter has a cut length of 20mm, is four-fluted and is ideal for routing tenons with a clean finish on the shoulder. The tool is TCT for use on timber and abrasive man-made boards and has four cutting edges – two down-shear blades for the shoulder and two up-shear, for the face of the tenon. The cutter is ideal for tenoning or where a large area needs to be recessed or surfaced and is especially good for an improved finish on interlocking grain.

Professional jigsaw blades

Trend's new range of professional jigsaw blades are suitable for general woodworking applications. These high quality blades can be used to make straight and curved cuts in natural and man-made timber and plastic. Five blades are available including cross ground, tapered or milled and set, depending on material and application, and all have the universal T-shank bayonet fitting. The blades are made from high-alloyed chrome-vanadium steel, which is perfect for use on softer materials. The range includes blades that can cut material from 4–60mm thicknesses, with tooth pitch from 2.0–4.5mm for fine finish or faster coarse cuts. The blades are sold in packs of five.



Contacts

Bora jigsaw guide

Contact: Bora Tools Tel: 001 866 588 0395 Web: www.boratool.com

Optimus CNC router

Contact: AXYZ International Tel: 01952 291 600 Web: www.axyz.co.uk

Professional jigsaw blades

Contact: Trend Machinery & Cutting Tools Tel: 01923 249 911

Web: www.trend-uk.com

Proxxon cordless power tools

Contact: BriMarc Tel: 0333 240 6967 Web: www.brimarc.com

UJK Technology workbenches

Contact: Axminster Tools & Machinery

Tel: 0800 371 822

Web: www.axminster.co.uk

Veritas mortise chisels

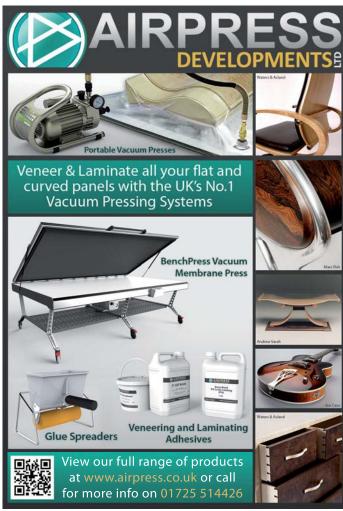
Contact: Lee Valley & Veritas Tel: 001 613 596 0350 Web: www.leevalley.com

Weatherseal and milling cutters

Contact: Trend Machinery & Cutting Tools

Tel: 01923 249 911 Web: www.trend-uk.com







Design Emphasis Student Furniture Design Competition



Hendrik Varju meets new furniture designers at the International Woodworking Fair in Atlanta

he International Woodworking Fair (IWF) is held in Atlanta, Georgia, USA every two years. It is the largest woodworking trade show in North America and the second largest in the world. When I arrived, it was immediately apparent that the 2016 show was larger and better attended than I've seen in many years. While I saw new ideas in some of the smaller tools and machines, there were huge innovations in CNC machinery. That seemed to be a bigger part of the show than I've seen in the past.

The IWF also hosts the Design Emphasis Student Furniture Design Competition. This contest is open to students in colleges and universities throughout the USA who are enrolled in woodworking and industrial design programmes. Much of the work was done with traditional woodworking methods, but some CNC work was also involved in some of the pieces, particularly in helping to make forms or moulds for bending wood.

Many weeks before I attended the show, I contacted all the competition finalists and made appointments to meet with many of them at the show. This gave me a chance to explore their designs and ideas with them, crawling around on the floor to look underneath and behind their creations to see every detail. The contest was much larger than I've seen before and involved some stiff competition indeed. It was wonderful to see how much talent these students have, as they are the future of the woodworking industry in the USA.

International Woodworking Fair

The next International Woodworking Fair will take place in Atlanta from 22–25 August, 2018. For more details about the Fair, visit: www.iwfatlanta.com

DESIGN & INSPIRATION

International Woodworking Fair

The awards ceremony

The evening before the show opened, the competition finalists attended an awards ceremony. They enjoyed dinner while discussing their projects with each other, watched a slideshow presentation of the various designs and then the awards were presented. The prizes included cash awards, as well as a sculptural trophy made of bubinga (*Guibourtia* spp.) for the first place winners. There were five categories in total: Accent Furniture, Commercial, Seating, Case

Goods and Design Creativity, each with a First Place winner, as well as the designation of Merit (second place) and Honourable Mention (third place). The largest grand prize went to the piece selected as Best of Show.

Meeting the students During my first two days at the show, I had

During my first two days at the show, I had appointments with almost 20 students. These students had travelled to the IWF from North Carolina, Washington, Texas,

Wisconsin and many other states around the country. It is always rewarding for me to meet with young students who show so much enthusiasm towards the craft. It reminds me of the excitement I had when first starting out in the business myself. One also has to remember that one is never finished learning about new designs and techniques, so I gain a lot of insight myself by asking these students how they conceived of their designs and then how they executed them through to completion. Very rewarding indeed.



Best of Show

Let's start with the Best of Show entry, which was a spectacular desk in cherry (Prunus spp.) and other secondary species. The base was painted with black milk paint, while the cherry top had a soft clear finish. On the left side, there is a semi-circular drawer that swings open in a curve. When you open it, various gears turn, which are visible through cutouts in the rear of the desktop. This offered some exciting visuals as you watch the mechanics of the gears work their magic. On the right side of the desk there is another circular section, but this time a shelf instead of a drawer opens up in similar fashion. This shelf can be used to hold a drink or perhaps even a computer mouse. Lots of great technique here, including complex joinery due to the curved parts, as well as beautiful carvings in the back section of the desktop.

The Best of Show winner was Ben Grant from Haywood Community College in North Carolina. He also won the Merit second place award for the Design Creativity category for his Reclined Rocker, featuring tapered bent laminations and a design that reminds me of a dinosaur skeleton.



The gears that open the desk drawer are visible through cutouts

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First Place winners

Now let's look at the First Place winners in the five different categories.

Accent Furniture

In the Accent Furniture category, the First Place winner was Julian Harris for his walnut (*Juglans* spp.) writing desk with ebony (*Diospyros* spp.) accents and ambrosia maple (*Acer* spp.) on the drawer interiors. The legs were turned and the top section is absolutely stunning. I have to say that out of all the entries, I found Julian's work to be the most refined, with extreme accuracy you'd normally expect to see from a seasoned professional. Bravo for this effort.

Julian recently completed an associate degree in professional crafts and business entrepreneurship at Haywood Community College in Clyde, North Carolina. He currently shares a small woodshop with other Haywood alumni in Asheville, North Carolina.



Julian Harris won the Accent Furniture category with this writing desk



Julian's work is highly accomplished in its accuracy

Commercial

In the Commercial category, First Place was given to Kelly Romig from Appalachian State University for her lamp, The Grain Tower. She walked me through the various types of welding that she had to master to build the lamp, which is made of steel and has an open mesh design for the lamp shade.

Kelly also received Honourable Mention in the Design Creativity category for another light fixture she made called Cinch. Designed to look like a tie, the translucent plastic material is held together with rare earth magnets so that it can be taken apart and flat packed for easy shipping. It is a beautiful and ingenious design.



The Cinch light fixture earned an Honourable Mention for Kelly Romig



Kelly's Grain Tower lamp took first place in the Commercial category

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Julian Harris won First Place in the Accent Furniture category with this console

Julian Harris, the First Place winner for the Accent Furniture category, also won First Place in the Case Goods category. I'm not sure I've seen one person win twice like that before. The judging is done anonymously based on entry numbers only, so the judges have no idea who made each piece or what college or university they are from. This results in the ultimate in fairness and, in my opinion, Julian greatly deserves the double win.

In the Case Goods category, Julian created a console or credenza of sorts. It is made of solid ribbon

striped sapele (Entandrophragma cylindricum) with figured anigre (Pouteria spp.) on the back panels and wenge (Millettia laurentii) door pulls and base. He explained to me that parts of the piece were designed to hold vinyl records, as well as alcohol bottles, so one can use the piece to listen to music while sipping a favourite scotch, bourbon, etc. This sounds wonderful to me. A special feature of the piece is that the four boxes within the outer case float in midair, as they are held to the back panel with a French cleat. Very beautiful and the joinery is impeccable.



The console is made of solid sapele with wenge door pulls

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Design Creativity

In the Design Creativity category, Kasia Sweeny took the First Place prize with her coat rack. It was made with a CNC machine to cut out the repeating shapes, using maple and cherry. The ingenious part of the design is that the folding arms are held in the upright position by embedded rare earth magnets. When you pull on an arm, it rotates into the down position, allowing you to hang a coat on it. It is beautiful in its simplicity and was nicely finished. Congratulations, Kasia. She is from Appalachian State University in North Carolina.

They're all winners There were many other students who won

There were many other students who won second and third place prizes, but even for those who didn't win a prize, I give them a big congratulations for all their hard work and creativity.

I spent a great deal of time speaking with Breann Davis from Kansas State University about her stunning and complex end table design inspired by Islamic architecture. Erin McCue from Edinboro University in Pennsylvania impressed me with her walnut and butternut (Juglans cinerea) rocking chair, and Georgina Salazar (Seattle Central College) made a stunning side table with multiple species of veneers that were put together like a tapestry. Daniela Toro Schemera from Auburn University put forth a great effort too with her hammock-style chair with polyester rope fitted to a frame made with hickory (Carya spp.) bent laminations. Very impressive work.

Unfortunately, there isn't enough room to discuss every piece I saw and the hours of effort that went into them. But each and every student who put their heart and soul



Breann Davis' table design was inspired by Islamic architecture



Kasia Sweeny's coat rack won the Design Creativity category

into their design should be very proud. Even though they didn't all win a ribbon or a prize, they were all selected as 'finalists', the cream of the crop from all the entries received. You are the future of woodworking and design creativity and, as such, deserve to be recognised. Congratulations and keep up the strong effort. Rec



Georgina Salazar's side table made from multiple veneers



Rocking chair by Erin McCue

Hendrik Varju is a fine furniture designer/ craftsman who provides private woodworking instruction and DVD courses. His business, Passion for Wood, is located near Toronto, Canada. www.passionforwood.com



Hammock-style chair by Daniela Toro Schemera

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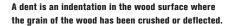
inish is thin and revealing. If the surface of the wood has any dents, gouges, or scratches, or is uneven, it will show up in the finish, so good preparation is critical to good finishing. Once the surface is level, it has to be made uniform. The best way to do that is to sand all of the wood in the same way with the same sandpaper. Understanding the differences between abrasive materials and the best ways to use them will make this chore less arduous. Finally, if you plan to use any waterborne stains or finishes, it is a good idea to raise the grain of the wood first.

Fixing Dents and Gouges

A dent is an indentation in wood where the fibers have been crushed, but not broken, cut, or removed. If the wood fibers have been cut or if wood has been removed, then the void is called a gouge. Dents on raw wood can usually be fixed by steaming them out, either with water or with alcohol (see the photos on the facing page).

If you use water, place a few drops into the dent and let the water sink in for a few seconds. With a damp cloth over the spot to protect the wood from scorching, place a hot iron over the dent and hold it there for several seconds. As the iron heats the water, it converts to steam, expanding the crushed fibers in the process. Repeat the process if the dent does not come out completely the first time.

Dents and Gouges



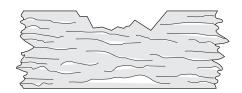
Dent

The sequence is a bit different with alcohol. With a small brush or toothpick, place a drop of denatured alcohol into the dent. Now touch a lit match to the alcohol, and it will burn with an almost invisible flame. Once again, the heat expands the crushed fibers. The alcohol will go out within a couple of seconds and will not have time to scorch the surrounding wood. Be certain you stick to one drop of alcohol at a time to prevent scorching, and keep some water handy just in case.

In most cases, the raised dent will be level enough so that just a small amount of sanding will erase it completely. However, if the dent does not come out completely, you should treat it as if it were a gouge.

Gouges have to be filled with some type





A gouge is an indentation in the wood surface where the grain of the wood has been torn or broken.

of wood putty to bring them level with the surrounding wood. Press the putty into the gouge so that it is slightly higher than the rest of the surface. The putty will shrink as it dries, so adjust the amount of excess accordingly. To test the putty's dryness, insert your thumbnail (see the top photo at left). If the putty gives, let it dry some more. If the putty is hard and dry, you can sand the spot smooth and level to the rest of the surface.

There are many different brands and types of putty on the market, but most fall into one of three categories: waterborne or "latex" putty, solvent-based putty, and dry powders that will mix with water to form putty. These wood putties dry hard and can be sanded flat once they are dry.

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They should not be confused with "oil putty," used for filling nail holes used for setting panes of glass. Those two putties do not dry hard but stay flexible indefinitely. They will not work for filling gouges.

No matter which of the three types of hard-drying putty you choose, they all work in the same way. Some may take stain better than others, and some may dry a bit faster, but you use them in the same way: by filling the gouge slightly proud and sanding the spot flush once it is dry.

Wood putties also come in a wide range of colors. However, you'll notice that no matter how many colors the store has, there is no guarantee that one will match your wood. Fortunately, all types of putty can be colored to match your repair. Dry pigment

Q&A: What is the difference between wood putty, wood filler, and pore filler? I see all these names in the store and never know which to buy.

The main difference is the thickness of the material. Wood putty and wood filler are two names for thick mixtures of resin, pigment, and wood dust or mineral powder designed to fill nicks, gouges, and voids in wood. They are meant to be pressed into voids in raw wood and sanded smooth once they are dry.

Pore filler is merely a slightly thinner version of the same thing, designed to fill pores in open-pore woods, such as mahogany and walnut. It is formulated to dry fast in thin applications and to rub off easily. However, in a pinch, it is certainly acceptable to thin out your favorite wood putty and use it as a pore filler.

powders, sold as touch-up colors, artist's fresco powders, or cement colors, work for

all types of putty. Mix the color you need by adding the powders a little at a time.



Putty will shrink as it hardens, so let it protrude slightly above the surrounding surface. The putty is ready to sand when it will not take an impression from your thumbnail.



Sand until the original shape of the gouge is clearly outlined.



Solvent-based putty (front center) dries faster than waterborne "latex" putty (left). The putty to the right is sold in powdered form and must be mixed with water.



If you can't find a putty that matches the wood, mix a custom color from "natural" putty and cement colors from your local hardware or home store, touch-up powders from wood specialty stores, or artist's fresco powders. If the putty starts to get too thick, add a few drops of the thinning solvent listed on the container.

LIFTING DENTS With Water



1. With the wood horizontal, place several drops of water into the dent.



2. Cover the spot with a slightly damp cloth and place a hot knife or iron directly over the drop. Hold it there, checking frequently, until the spot is dry. If the dent is not completely out, repeat the process.

With Alcohol



 To raise a dent with alcohol instead of water, place one drop of denatured alcohol into the depression with a fine touch-up brush or toothpick.



Touch the drop with the tip of a lit match. The alcohol will burn with an almost imperceptible blue flame. It will expand rapidly as it burns, causing the crushed wood in the dent to swell.

>

SANDING

Sanding is tedious. Therefore, your goal is to get the surface smooth enough to finish as quickly as possible. You can save time, energy, and even sandpaper if you use the right sandpaper at each step of the process coupled with an efficient sanding schedule. A good sanding schedule will tell you when to switch from one grit to the next, how to sand in order to remove material quickly and maintain a flat surface, and when to stop sanding.

Types of Sandpaper

Sandpaper is made by gluing pieces of mineral, or "grit," onto a flat backing.

The backing can be paper, polyester, cloth, or fiber. Most sandpaper made for hand sanding is paper backed. Various sizes of grit are glued onto the backing with two coats of adhesive, the make coat and the size coat, which work together to hold the grit in place (see the drawing on the right). Changing the type of paper and adhesive gives us many different types of papers designed for a variety of uses. For example, wet/dry sandpaper, which is designed to work with a liquid lubricant, is made with waterproof paper and an adhesive.

Similarly, different types of mineral are used for grit. Some grits work best for sanding metals and plastic, while others are ideal for wood. The type of grit, along with how it is positioned on the paper, will determine which jobs the sandpaper does best.

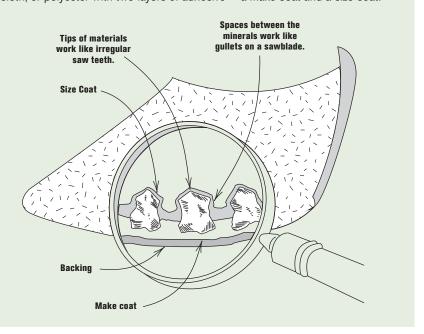
Sandpaper is sold in grit "sizes" to indicate how rough or fine it is. Unfortunately, there are at least four common grading systems that companies use to indicate grit size, and they bear little resemblance to one another. They are CAMI, the US standard; FEPA, the European standard; micron grading, a more accurate system used for fine grits; and generic names like "fine," "medium," and so on. As a result, one number size of sandpaper may be entirely different from the same number size of another grading type. For example, 500 grit CAMI is equal to 1,000 grit on the FEPA scale and 19 on the micron scale.

The four systems use indicators beside the number to let you know which system is applicable. Here's how they look:

- CAMI uses plain numbers—220
- FEPA uses a "P" in front of the number—
- Micron uses a Greek letter "mu" behind the number—60µ
- Generic names use words—very fine

ANATOMY OF SANDPAPER

Sandpaper has pieces of "grit," actually types of stone, glued to a backing made of paper, cloth, or polyester with two layers of adhesive -- a make coat and a size coat.



Types of grit

Aluminum oxide is the most commonly used grit in woodworking sandpaper. It is cheap and there are many different grades for a variety of uses; but it's most significant advantage is that it is friable. That means that as the grit wears, instead of getting dull it fractures. The fracture creates a new sharp edge. This friability makes aluminum oxide stay sharp longer, and it results in a paper that keeps sanding quickly and aggressively throughout its life.

Silicon-carbide grit is sharp and tough. While it is technically friable, it will not crack as easily as aluminum oxide, and wood is generally too soft to make it fracture. Most silicon-carbide grit is used for sanding metal and plastics, including finishes, but not for raw wood. It will work on wood but is somewhat more expensive.

By contrast, garnet is nonfriable, so the grit gets dull as you use it. This too can be an advantage. Though it is less cost-effective and sands slower, nonfriable is ideal to use for the final sanding. Worn garnet leaves a softer U-shaped scratch than the V-shaped scratches left by sharp friable grits. The result is more uniform staining and the ability to burnish end grain so that it is less likely to drink in excessive amounts of stain and finish.

Ceramic grit, which is also nonfriable, is

much harder and not as sharp as the other grits. Though it does not get dull quickly, it takes more energy to cut wood. For that reason, it is used mainly for heavy-duty sanding with power tools, like belt sanders and stationary disk sanders.

Closed coat vs. open coat

Sandpaper is made in two different coating formats: closed coat and open coat. Closed-coat sandpaper has grit covering the entire surface with no spaces in between the grit particles. Open-coat sandpaper has grit covering only 40% to 70% of the surface and has spaces between the grit (see the drawing on the facing page). If you think of the grit acting like a tiny saw tooth, then the open spaces in between act like the gullets between the saw teeth. That clearance is necessary for sanding both wood and finish, so woodworkers use only open-coat sandpapers. Closed-coat sandpaper, with no space for the sanding swarf to go, would clog up too fast to be effective on raw wood.

Stearated sandpaper

Sanding wood generates dry wood dust or "swarf." When you sand finishes, the result is often a fairly sticky residue that clumps onto the sandpaper, rendering it useless. To prevent this clumping, manufacturers lace finish sanding paper with zinc stearate, a white "soap." These stearates lubricate the paper, making it grab less, and prevent sanded finish dust from sticking to the paper. Stearated papers are often referred to as "self-lube" or "lubricated" sandpaper and are lighter in color.

Wet/dry sandpaper

If you attach grit with a waterproof glue

Q&A: The sandpaper I buy for sanding raw wood says "production" on the back. Does that mean it is meant for commercial clients or that it sands fast?

Neither really. "Production" is 3M Company's code word to mean that the paper is made with aluminum-oxide grit. Incidentally, you have made a wise choice for the job. Aluminum-oxide open-coat sandpaper (production paper) is perfect for sanding raw wood. It is sharp, sands fast, and the friable grit keeps sanding efficiently for a long time.

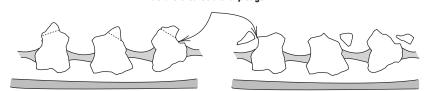
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Friable vs. nonfriable grit

By cracking and flaking, friable grit presents a consistently sharp edge to wood.

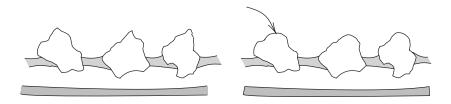
Fracture creates a sharp edge.

Friable



Grit dulls as it wears.

Nonfriable

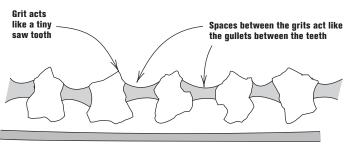


Open- vs. Closed-Coat Grit

Grit covers 100% of the surface on closed-coat sandpaper but only 40% to 70% of the surface on open-coat sandpaper.

Open Coat

Open coat is best for wood and finish.



Closed Coat

Closed coat is used for sanding metal.



onto waterproof paper or polyester, you have wet/dry sandpaper. This paper lets you sand with a liquid as a lubricant, a common way to sand finish in very fine grits. Most wet/dry papers are made with silicon-carbide grit, which is tougher and less friable than aluminum oxide. It is just right for sanding hard finishes.

THE SANDING PROCESS

The sanding process is simpler than it seems and really has only two goals. The goal of the first step is to get the wood flat or level while removing any glue spots or machine marks. Every step after that is meant to remove the scratches that were put in during the first step. When you are

Q&A: I buy stearated silicon-carbide sandpaper at the local auto paint store. I have been using it to sand raw wood, but my friend says it is the wrong paper for that. I have not noticed any problems. Am I heading for trouble?

Only financial trouble. Stearated silicon-carbide paper will work fine for sanding raw wood, but it is far more expensive than other papers that will work just as well. The paper you are buying is designed for sanding hard finishes and metal, which is why the auto paint store is selling it. If you switch to open coat, nonstearated aluminum-oxide paper for sanding raw wood, it will work just as well and will cost less than half of what you are currently paying. Save the stearated paper for sanding between coats of finish, where you really need it.

done, you should have a uniform scratch pattern that will accept stain and finish evenly. It is important that the entire piece be sanded to the same grit; otherwise, the stain will not go on evenly.

Except for the very last step, it makes no difference whether you sand by hand or with a random-orbit sander. The only scratches that will not be eliminated are the last ones put in by the hand-sanding step. If you have it, use a random-orbit sander for all the steps listed except the last one. If not, use a sanding block, following the same steps with the same size and type of grit.

Some woodworkers prefer to use a scraper to smooth the surface of the wood. If you like, you can replace all but step 4 with a scraper, but that last hand sanding should still be done as described. Scraped surfaces, especially on dense woods like maple, do not take stain well.

>



The author's favorite sanding block is lined with ¼-in.thick cork and is sized to fit his hand comfortably.

Step 1: 80-grit aluminum oxide

Aluminum-oxide grit will present a sharp edge to remove wood quickly and will stay sharp longer as you work. For a randomorbit sander, you'll need a fairly stiff pad. Soft pads won't support the sandpaper and make it cut more slowly. Move the sander only about 1 ft. every 10 seconds. If you sand by hand, use a sanding block and move it diagonally across the grain at about 45°, as shown in the drawing above. Sanding diagonally re-moves more wood faster, and the scratches you form will be removed later anyway.

Step 2: 120-grit aluminum oxide

Use 120-grit aluminum oxide until all of the 80-grit scratches are gone. If you use a sanding block, sand at 45° in the opposite direction from the 80-grit sanding to make it easier to see when the 80-grit scratches are gone. If you are using a random-orbit sander, there is no way to change direction, so you will have to look for wayward scratches a bit more carefully.

Step 3: 180-grit aluminum oxide

As in the previous step, reverse direction and sand until all the 120-grit scratches are gone. Once again, sanding with a randomorbit sander means you have to look carefully for scratches.

Step 4: 180-grit garnet

You should abandon the sander at this step. Sand only by hand and with the grain, not diagonally. Notice that you change types of grit and direction of sanding, but not the grit size. The object here is to straighten out the last scratches so they go the same direction as the grain. Garnet grit dulls more quickly than aluminum oxide and will leave a smoother surface that will take stain more evenly. If you don't have garnet paper, do this step with 220-grit aluminum oxide.

RAISING THE GRAIN

If you put water on smooth raw wood and then let it dry, you will notice that it will become slightly rough. This is known as "raising the grain" because it makes the ends of the wood fibers stand up. Because water will raise the grain, like it or not, it is a good idea to do this intentionally if you plan to use



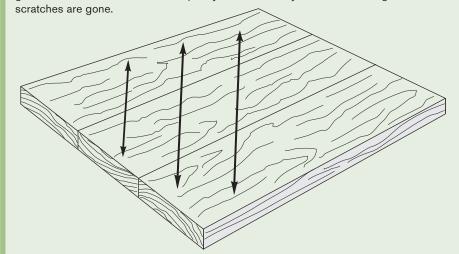
Pressing down on a random-orbit sander will slow its progress and will leave scratches in the wood. Let the weight of the sander alone do the work.



Swirls in the wood are caused by pushing down on the sander.

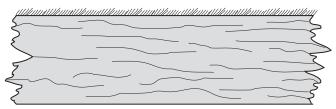
SANDING-BLOCK PATTERN

Sand with a block at 45° to the grain, switching directions each time you switch grits. This will remove wood more quickly and will show you when the last grit's scratches are gone.



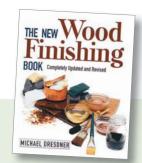
RAISED GRAIN

Water "raises the grain" of wood, making the fibers stand up and feel rough.



a waterborne stain or coating later in the finishing process.

After the wood has been sanded, take a clean sponge and wet the entire surface of the wood thoroughly with water. Wipe off any excess so that there are no puddles or spots and the wood is uniformly wet. Let it dry overnight. In the morning, use 220-grit paper to scuff-sand the raised "fur" off, applying very light pressure in the direction of the grain. The object is the same as when you shave-remove the raised hairs but don't cut into the surface below. It should take less than 60 seconds to scuff-sand a surface the size of a dining-room tabletop. Once the grain has been raised and scuffed, it will not raise again unless you resand the wood more aggressively with coarser paper. F&C



Book details

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by Michael Dresdner ISBN: 9781561588282 Price: £16.99

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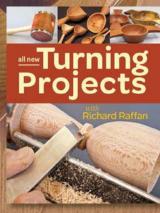
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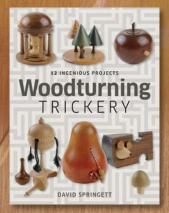


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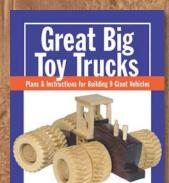
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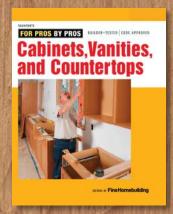


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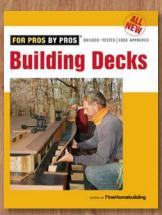
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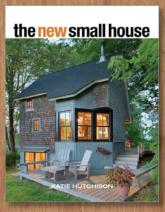
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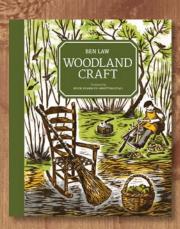
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e all have different ways of learning new woodwork skills, and refreshing our grasp of the basics, but how many of us have undertaken a Victorian apprenticeship in order to improve their woodwork? Well, that is exactly what I spent the summer doing, all from the comfort of my own workshop thanks to a 19th-century text that has been republished by Lost Art Press.

A very traditional apprenticeship

First published in 1839, *The Joiner & Cabinet Maker* takes the form of a story following the apprenticeship of a young lad called Thomas. We see Thomas at the very start of his apprenticeship when he builds

Over the years, F&C has acquired readers from all four points on the compass and since going digital in 2013, that trend has increased. You can find us anywhere in the world with a link to the web. As the magazine's content is a true reflection of our readership, we like to take you on a workshop tour of the globe. This month we're heading into Kieran Binnie's workshop to learn some lessons from a 19th-century woodworking apprentice.

a packing box for a customer to transport books, at the middle of his apprenticeship when he builds a small dovetailed chest for a customer to take to school, and finally at the end of his apprenticeship when he builds a chest of drawers. Although the identity of the author is unknown, they were clearly either a woodworker or very familiar with woodwork, as the projects and tools are described with great detail and clarity.

But more than just being a historical curio, by describing in detail three projects of increasing complexity the book offers an opportunity to develop solid hand-tool techniques, and build up a compact handwork-focused tool kit, in a systematic fashion. As a consequence, I would argue that *The Joiner & Cabinet Maker* is an excellent introduction to hand tool work for the novice woodworker, and also a valuable refresher for more experienced folk.

Processing rough stock is just one of the core skills taught in The Joiner & Cabinet Maker



Cut nails hold moulding in place and allow for seasonal movement of the lid

DEDADUS BY KIEDAN BIMMIE



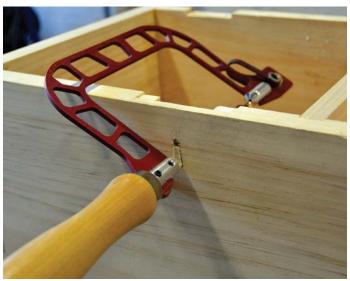
Cut nails waiting to be clinched



Dovetailed base moulding for the School Box – as well as dovetailing this project introduces the reader to making short runs of moulding



Nail clinching is an often overlooked, but very valuable joinery technique



Cutting the keyhole for the School Box lock

Becoming the joiner's apprentice

Over the summer I built the Packing Box and School Box projects, and now have just the chest of drawers left before I complete my virtual Victorian apprenticeship – you can read my detailed build notes and experiences working on these projects on my blog, www.overthewireless.com

The first project, the Packing Box, is held together entirely by nails - battens are clinched to the top and bottom of the box, while the sides are secured with nailed butt joints. As this is the first project Thomas undertakes in his apprenticeship his tool kit is limited to ruler, chalk line, jack plane, smoothing plane, square, marking gauge, rip and crosscut saws, hammer and either a brad awl or drill. The simple construction methods and limited tool kit therefore make the packing box a very accessible project to the beginner, and is a useful reminder that it does not take an endless list of tools to build furniture. For added excitement, Thomas is only given five hours to build the packing box, so there is the option to race the clock with this build if you choose!

The individual projects are fun to build, but work through them in sequence, using only the tools and techniques described in the text, and deeper lessons become apparent. I'm not

just talking about how to cut a good dovetail, although the text tells you how to achieve that, but more fundamental skills which are invaluable to successful woodwork. For the Packing Box, Thomas has a single board (12ft 3in long and 9in wide) with which to build a box to the customer's dimensions. To achieve this accurate layout and efficient use of stock is essential, particularly to harvest the battens that hold the top and bottom of the box together. The School Box builds on these themes while also introducing the key skill of processing rough stock with hand planes, as well as fitting locks and hinges, and making mitred moulding runs.

The projects are nicely paced so that techniques and tools are introduced at a rate that makes them easily accessible to the beginner, and the first two projects are simple enough that results can be seen rapidly, which makes them very achievable. What is more, by working through the projects in sequence you can start with a very small tool kit that is slowly built up. The complete tool kit Thomas finishes the book with is still quite modest compared to that of many modern workers. The cost and number of tools needed for furniture building can often be seen as prohibitive, and giving new woodworkers a shorter shopping list

can only encourage new entrants to the wood crafts.

The lessons offered by *The Joiner & Cabinet Maker* are not just for beginners.

The projects also offer a valuable refresher, and new perspective, for more experienced woodworkers. One of my favourite moments from the Packing Box was squaring up stock in a bench vice with a smoothing plane rather than using a shooting board as I would normally do. This sounds like a hard way to work, but actually it works really well and doesn't take too long. Yes, a shooting board makes things easier (especially on wide boards) but the realisation that you don't actually need a shooting board can be quite liberating!

A new generation of apprentices?

Working through the projects in *The Joiner & Cabinet Maker* has provided an entertaining and rigorous way to further develop my furniture building skills, and I highly recommend this book to anyone who wants to delve deeper into hand tool furniture making. My daughter is a little young to have her own tool chest just yet, but when she is old enough to join me in the workshop I can't think of a better way to start her off than with young Thomas' Packing Box build.

www.woodworkersinstitute.com F&C251 **55**



From apprentice to master blacksmith

Caleb Nolen has been a practising blacksmith at Homestead Heritage for 22 years. He began his apprenticeship as a young boy, and has been hard at work with a hammer at the anvil ever since. Jed, age 13, is currently apprenticing under him between his school studies. While I watched Caleb working on the hardware for the oak chest Jonathan and I were building. Jed was making an axe. Though he had to stand on a bucket to give his hammer a powerful enough swing, Jed certainly knew what he was doing, and that was very impressive to see. Like so many of the other youngsters I met at the Homestead, Jed was shockingly confident and mature. Another young fellow at the Homestead talked my ear off for an hour about how to properly shoot, skin and tan a rabbit hide, a task I've far from mastered at the age of 27, even though I've been raising rabbits since I was 10. I imagined my nephew, who's the same age, in the woods with a gun, and that thought is absolutely terrifying. You see, the kids at Homestead are taught a myriad of skills at a young age, and entrusted with so much more than society at large ever would. Time and again at the Homestead, I saw children that had risen to that challenge, and are thriving as a result. It was incredibly awe-inspiring and encouraging. Spending time with these youngsters, I began to understand how craftsmen as young as Jonathan and Caleb could already be so accomplished.



Young apprentice in Caleb's shop

Forging tools

Caleb, formerly very well known for his decorative blacksmithing work has recently made the move into the forging of woodworking tools and accessories, making him a wonderful subject to interview for this series. Several years ago, he travelled to Sweden to study axe making at Gränsfors Bruk, and he was hooked. Using their techniques, he has finally perfected an axe he is excited to offer to the public. Like in the woodshop, the doors to Caleb's forge are open to the public Monday-Saturday for tourists to come in and watch him work. This is another reason Caleb has decided to venture more into the tool making and woodworking accessories side of things rather than the sculptural work he was doing before. He wants to excite and inspire those who come into his shop, for people to leave with a greater desire to pursue blacksmithing. "Tools involve a lot more work in the forge and at the anvil. When people come into a blacksmithing shop, they want to see sparks and fire and hammering, not welding and grinding," he says.

Caleb and I talked a lot about the steel and the processes he uses to make woodworking tools. Because he uses a coal forge, Caleb can only work on one tool at a time. The heat in a coal forge is so great that, if the metal is left in too long, it literally evaporates, so close attention needs to be paid to the piece



Hand-forged axes and dividers

in the forge. While a lot of it was WAY over my head, I could appreciate his descriptions of tools and steels with which I was already familiar. For example, he uses 01 tool steel for his travishers. Once tempered, 01 is a very hard tool steel, so while it is great for short, thick blades, it cannot be used on long blades such as swords or machetes, as its hardness makes it brittle when it is flexed. For hammers, he uses 1045 tool steel. The head of his axes are made with mild steel, and the tip is forge welded in. Caleb uses carbon steel blades salvaged from old farming equipment for the tips of his axes. It takes a wicked keen edge that outlasts anything else he's tried.



Travishers in the making



Axes in progress

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Making a crook knife

Since many of my favourite woodworkers have recently been particularly keen on spoon craft, I asked Caleb if he'd share with F&C's readers his process for forging a crook knife, and he kindly obliged. For his carving knives, he uses 5160 steel (aka a piece of a vehicle spring) so it has more flexibility as a thin blade. He begins with 12mm round stock and heats it to a bright orange.

Caleb then takes the blade to the power hammer and flattens the stock. Between each heat in the forge, he uses a wire brush to clean off the mill scale, a byproduct of the oxidation caused by heating the metal (another common byproduct of oxidation is rust), to save himself some grinding work later. The less heats it takes to form the blade, the better, so Caleb tries to complete as many steps in the process as possible while the metal is hot. Drawing the metal out for the tang takes a lot of hammer work, so a great way to keep the heat up and to accomplish more in a single heat is to grab a partner. Caleb called his apprentice, Jed, over for this step. Caleb holds the workpiece and moves it over the anvil as he sees fit. He strikes first, and his apprentice strikes exactly where Caleb last struck. Watching two hammers at work on a single workpiece is a beautiful thing, almost like a well timed dance. Since it is also one of my favourite activities in the blacksmith shop at home, this was a real pleasure to see.

Once the tang is formed and the blade is flat, Caleb uses one last heat and the horn of his anvil to define and refine the final shape of the hook knife. Using a 'cutoff hardy' (basically a chisel which fits down into the square hole in the anvil) a few taps separates the completed blade and tang from the stock piece.



First heat for crook knife



Once the forging is complete, the blade will get a rough grind and polish, before going through the heat treating process. After a final sharpen and polish, the blade will go to the wood shop where Jonathan and his crew will fashion a wooden handle. The knife will then be tested and sold. ***

For more information about the Homestead Heritage Taditional Craft Village, visit: www.homesteadcraftvillage.com



Drawing out the tang



Creating the hook



Cleaning off the slag



Using the cutoff hardy

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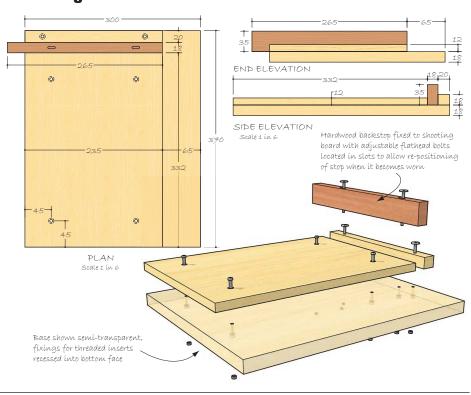


Block plane shooting board

Designed for trimming end grain, a low angle block plane is the perfect tool for a travelling shooter

he nucleus of tools that form the core of any travelling tool kit will almost certainly contain a block plane of some description. Such is the versatility of this little tool that few of us feel suitably attired and able to leave the 'shop without one. I've trimmed doors and jointed panels with mine, neither of which I was expecting to do beforehand, but in a tight spot you make do with what you have. I'm also no stranger to using a bench hook to set up an impromptu shooting board when the need arises. The two devices are a natural pairing in this context but depend on having access to a reliably flat surface to stand any chance of creating a square end to the piece being trimmed.

In the workshop I have just one shooting board, large enough to make the most of a dedicated shooting plane and its not insignificant mass. The trouble is it can often seem a little over the top for some delicate operations. So here's a solution that takes full advantage of the block plane's talent for tackling end grain in more portable configuration; a block plane shooter.



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Tool tech - block plane

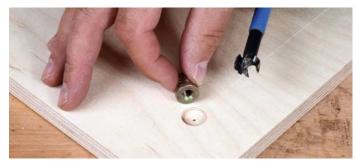
Accuracy where it counts



The back stop must have parallel sides to maintain 90°

When it comes to making a shooting board there's really only one thing that matters and that's that the plane needs to be guided to cut at the desired angle across the end of the piece being trimmed. Most of the time this will be 90° or 45°. The template for this style of shooting board is a piece of ply with at least one perfect 90° corner. Strictly speaking, the edges don't need to be square to the face of the board; it helps but it's not imperative. The other important component is a back stop or fence with square and parallel sides. Prepare the components accurately and orientate them so that the back stop butts up tightly against one of the square sides of the ply template and you have the makings of a reliable 90° shooter.

Lining things up



Use a Forstner bit centred on a pilot hole to recess the fixings



Clamp the components tight in registration if you drill the pilot holes by hand

I have an abundant supply of threaded inserts left over from when I used to make loudspeaker cabinets. They were often specified as anchor points for the drivers and a whole host of other fittings that require a firm fixing. Using them to good effect to build jigs for the workshop means you'll need access to a pillar drill or similar equipment and a good supply of 1–2mm drill bits. Alternatively, each time you want to join two pieces together clamp them in place and drill a pilot hole through both pieces at the same time. Then use the pilot hole as a guide to drill clearance holes, blind holes and friction holes to suit.

FESTOOL SLOT CUTTER

There's a quick and easy way to cut a slot for the through bolts using a Festool Domino. If the component is wider than the depth of bore, just square a line across the face of the board and cut the Domino slot from both sides referencing from the face.



Use a bench hook to mortise thin components

Allowing for wear

All shooting boards suffer from wear through use so it pays to have the parts that will need correcting in the future easily dismantled and put back into place. The back stop tends to suffer the most so having it anchored through slots means you can maintain a clean edge for longer before having to make a new component.



The Festool mortise can easily become a through slot



Trim the back stop to length before the first use

MICRO ADJUSTMENTS

Make adjustments by slipping anything from a Post-it-note to a pencil behind the workpiece to change the angle [84]



Make micro adjustments to the 90° angle by inserting a spacer between the workpiece and the back stop

www.woodworkersinstitute.com F&C251 **63**

Making a mid-century coffee table a little more contemporary

Liam Thomas uses the Festool Domino to seamlessly reduce the height of a rare mid-century coffee table



Aluminium mitre splines for detail and function

Rud Thygesen rosewood coffee table

good client of mine recently purchased a 1960s rosewood (*Dalbergia* spp.) coffee table and contacted me to help with its restoration. During the conversation about the restoration, the height of the coffee table was broached. They wanted to make it shorter to fit in with their existing, more contemporary living room furniture. This proved to be somewhat of a quandary as the table itself is considered to be on the rarer side of things, at least for mid-century furniture that is. At 460mm tall it is about 60mm taller than a standard sized coffee table, taller still than more contemporary ones.

Aluminium in the detail

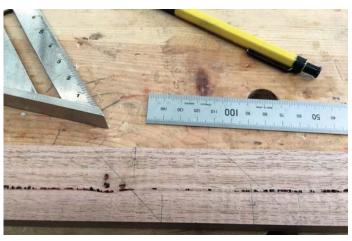
This particular coffee table, designed by Rud Thygesen is a beautiful, understated piece and a classic example of minimal mid-century style. Rosewood, veneered with unique aluminium mitred splines, was used throughout for both construction and decorative detail. Ordinarily the easiest way to achieve a reduction in height is to take off the required amount from the bottom of each leg, however the mitred sleigh base legs with aluminium keys make this an unsuitable option. A solution was needed to take some length out of the legs without dramatically affecting the unique look of the table.

PROJECTS & TECHNIQUES

Restoration tech – mid-century coffee table

SketchUp models help you to visualise any untested concepts

How to proceed
We decided the least intrusive option would be to take out the desired 60mm from near the top of each leg with the section removed cut at 45° and rejoined using a loose tenon between the two parts. This is done firstly to lessen the visual impact when compared to a cut directly across the grain and secondly, it is fairly simple to cut on the saw. The joint was drawn in SketchUp, but we also thought it prudent to do a trial run before any rare furniture was cut into. This is a useful process for any new ideas as many of the problems encountered can be resolved prior to working on the real piece. An important motto for me in the workshop and when teaching students is 'the slow way is the fast way'.



Marking out the mitres and mortises



Mortises cut with a Festool Domino



Squaring up the mortise



Loose tenon in place



A success with the test run

The SketchUp drawing proved useful in that it allowed me to work out where the mortises should be placed. A Festool Domino would be used to cut the mortises and the centre points used to make the Domino mortise were taken from the SketchUp drawing and transferred to the practice piece. Two mortises were then cut, one either side of the piece, on the inside of each mitre and within the section to be removed. The rear, rounded edge created by the domino was squared up using a chisel; this will help accomodate a square loose tenon. The fence on the tablesaw was set to 45° and two cuts were made, cutting out the 60mm of waste, leaving two pieces each with half a mortise. With the loose tenon in place the two halves were successfully joined together. Now onto the real thing.

Clamp it real good

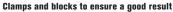
With the marking out complete, mortising done and mitres cut, each leg was now 60mm shorter than before. They were ready to be glued back together. Even with good fitting loose splines the reassembly of the legs require careful and considered clamping. Pressure down the length of the leg, as well as across all four faces of the mitre is required to ensure correct alignment especially as the legs are rosewood veneer on solid beech (Fagus sylvatica). Each leg would need to be glued up as a pair due to the sleigh leg design of the table and glueups like these tend to be less stressful when all the clamping requirements are worked out in advance.



Rosewood legs cut and mortised

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A good use of rare materials, rosewood veneer on solid wood

THE SHORT AND TALL OF IT

Trends change, fashions come and go and we now live in an interesting time where we can pick and choose from a plethora of design eras to decorate our homes. Continuous arm rocking chairs can live harmoniously alongside a wool upholstered contemporary looking sofa. No matter what the style and era of our living room furniture is, they all inevitably sit in front of a coffee table and flat-screen television.

The way we use our living areas has slowly changed over time, the home theatre really is just that and the age of box sets, Netflix and staying in for the night are here. Our sofas have become more than a place

to sit around a coffee table to chat with friends, they are places of comfort after a long day where tired bodies can stretch out fully and relax.

There are, of course, contemporary tables suited to such seating, but often they are too big in surface area, and are cold both visually and to touch compared to the warmth of a fabric upholstered sofa. The mid-century coffee table seems to fill the design void here, they take up less space and being made from veneered teak (Tectona grandis), oak (Quercus robur) and sometimes rosewood they are lovely to look at while maintaining almost timeless lines associated with post-war modernism. They seem to fit the bill for our modern lives except for one small point, they're too tall. It's a common question asked by my clients in the world of mid-century furniture restoration: 'we love this coffee table but can you make it shorter?'

The heights of these mid-century coffee tables are usually around 460-500mm tall, sometimes up to 530mm, which is only 200mm off from a standard dining table. So before you decide to acquire one for your living room, check the height and make sure it's not so rare that taking off 60mm doesn't cause too much stress.

If you didn't know it...

Once out of clamps it was clear that the preparation work had paid off. All of the joints were flat on all faces and each leg only required some minor surface preparation in order to be refinished similar to the rest of the rosewood veneer. The top outside edge of each mitre,

the most noticeable part with the cut across the grain, sat almost in line with the lower edge of the long rails helping to minimise the overall appearance of the modification. With the restoration and modification complete the table, was delivered to a very happy client.



Out of the clamps, the legs are now 60mm shorter



The legs were cut at the tops to make it less noticeable



The final result ready for the client

AS ACCURATE AS YOUR MARKING OUT

The Festool Domino is indeed a very useful machine, however it really is only as accurate as your marking out. Over many years of using the Festool, I've developed a habit of marking each Domino centre point with a small arrow pointing towards the edge needing the mortise. It only takes a moment to do and is a small fail-safe process to ensure that a mortise is placed where needed. F&C



A small arrow to help Domino cutting



With many pencil marks it can make a difference

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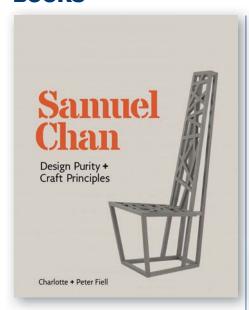




Workshop library

We review *Traditional Furniture Projects* and *Samuel Chan: Design Purity* + *Craft Principles* and take a look at The English Woodworker blog

BOOKS



Samuel Chan: Design Purity + Craft Principles

by Charlotte and Peter Fiell
This new book was launched at
designjunction this September. It surveys
the work of one of Britain's most prolific
furniture designers, Samuel Chan,
telling the story of Chan's creative and
entrepreneurial endeavours, celebrating his
illustrious career in furniture design and
marking 20 years of his studio, Channels.

Samuel Chan: Design Purity + Craft
Principles is a richly illustrated monograph
that explores his singular approach to design
and manufacture, from first discovering
his love of woodwork as a schoolboy new

to England, to opening Channels with a studio-showroom in 1995, and going on to be awarded 12 Design Guild Marks over the course of his career so far. From his earliest days as a designer, Chan's emphasis has been on creating furniture that combines contemporary design with exquisite wood craftsmanship. Born in Hong Kong and educated in Britain, he draws on his heritage to produce work that is imbued with a unique synthesis of Eastern aesthetics and Western design ideals.

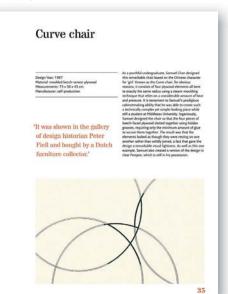
The book's authors, Charlotte and Peter Fiell, have followed Chan's work since he was an undergraduate. They write: "Embodying a philosophy of design purity and craft principles, Chan's work displays exceptional formal and functional integrity,

and can be held up as exemplary of best practice in clean, contemporary design."

The book comprises a biography, timeline of key awards and exhibitions, and a detailed overview of Chan's individual designs and projects. To coincide with the publication of the book, Channels also unveiled its new 2016 furniture collection by Samuel Chan at designjunction. 'Mr Knock' is a series of two new bookcase designs, named after Chan's woodwork teacher at school. Channels also launched new editions of the 'Gillespie' rocking chair in a colourful range of new Kvadrat wool fabrics.

Published by Laurence King ISBN: 9781780678962 176 pages £30.00

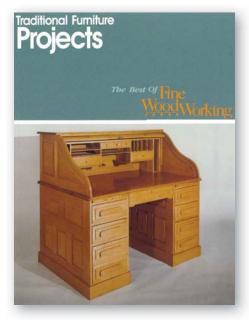








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Traditional Furniture Projects: The Best of Fine Woodworking

by the Editors of Fine Woodworking

This book collects 25 projects originally published in *Fine Woodworking* magazine between 1984 and 1989. The projects covered include the usual chests of drawers, tables and cabinets, one highlight of which for me was a lovely spice cabinet. This spice box is made in the William and Mary style, and was inspired by designs that were popular in the United States and Europe in the 17th and 18th centuries. It contains several 'secret' drawers, originally intended to store the most valuable spices. This kind of historical context adds a real value to the book.

Also included in the book are a number of more unusual projects, including an adjustable music stand, antebellum-style fireplaces, a Heppelwhite card table, a Postoffice desk, a marquetry brandy stand, a Norwegian Sengebenk bench with builtin storage, a Kentucky quilt cabinet and period-style doors. For chair makers there is a fascinating article about the New England version of the Windsor chair, including profiles on a number of contemporary New England Windsor chair makers. There is also a design for a bent-back rocking chair.

The book is laid out very clearly, with large colour photographs and detailed drawings of each project. Although none of the projects are covered in sufficient detail to really be considered a 'how to' guide, the drawings and description of the main elements of construction would be enough for an experienced furniture maker to build the projects. However, less experienced makers may well benefit from more detailed descriptions before they attempt some of the more complex projects in this book.

Kieran Binnie

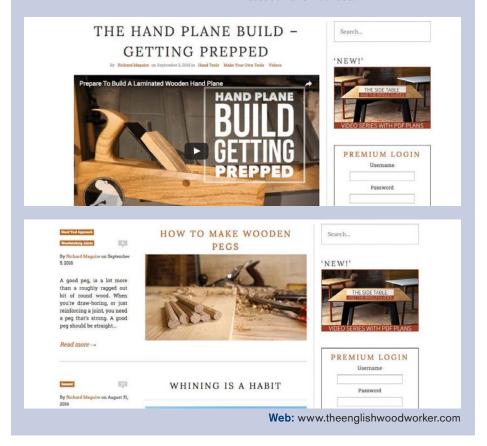
Published by Taunton Press ISBN: 9780942391930 128 pages £14.99

Website of the month: The English Woodworker



Richard and Helen Maguire, owners of Maguire Workbenches, set up The English Woodworker as a way to share their passion for traditional woodworking. The blog has the latest news and projects from their workshop, recent entries include a series on making side tables, a guide to using Japanese saws and an article on reinforcing glued joints. The English Woodworker is a great resource for videos. The main videos section is free to access and contains

shorter demonstrations of various techniques. The premium videos section has series of longer recordings, covering topics such as 'The Side Table and Bridle Guides' and 'Refine Your Skills'. There is a one-off fee to view these videos, but you can watch trailers for each of them free of charge. As well as visiting the site, it's worth taking a look at The English Woodworker's various social media accounts, including Instagram, Twitter, Facebook and YouTube.



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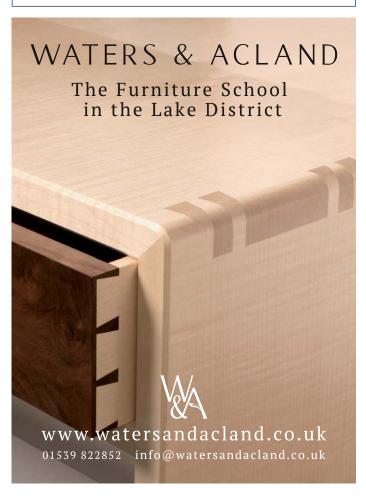
The coarse guide to shaving

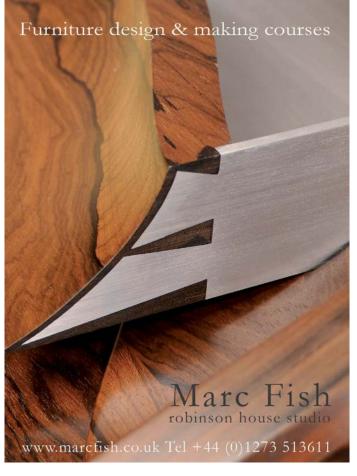
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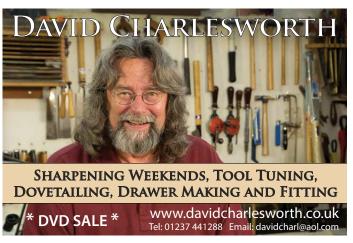






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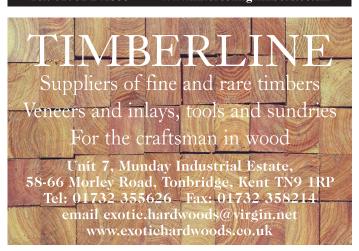
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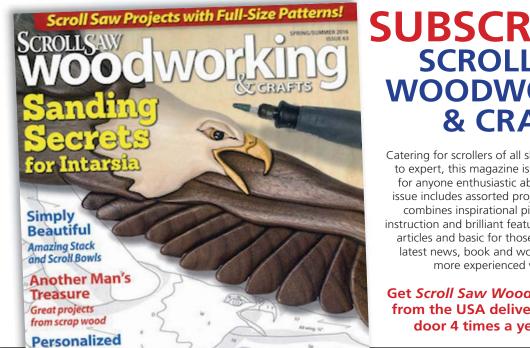
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UNDER THE HAMMER: Late 19th-century French side cabinet

We take a look at a recent lot from Bonhams' Home & Interiors auction



Late 19th-century gilt bronze mounted kingwood, palisander and vernis Martin meuble à hauteur d'appui

his side cabinet, or meuble a hauteur d'appui, is attributed to Joseph Emmanuel Zwiener (1849–95), a German-born cabinetmaker who worked in Paris. It has a breakfront form with a moulded marble top above three panel mounts incorporating a central door enclosing two adjustable shelves. The central vernis Martin (imitation lacquer) scene depicts Cupid in attendance as Venus is presented with armour for her son Aeneas from Vulcan, who sits near his forge. This scene is set

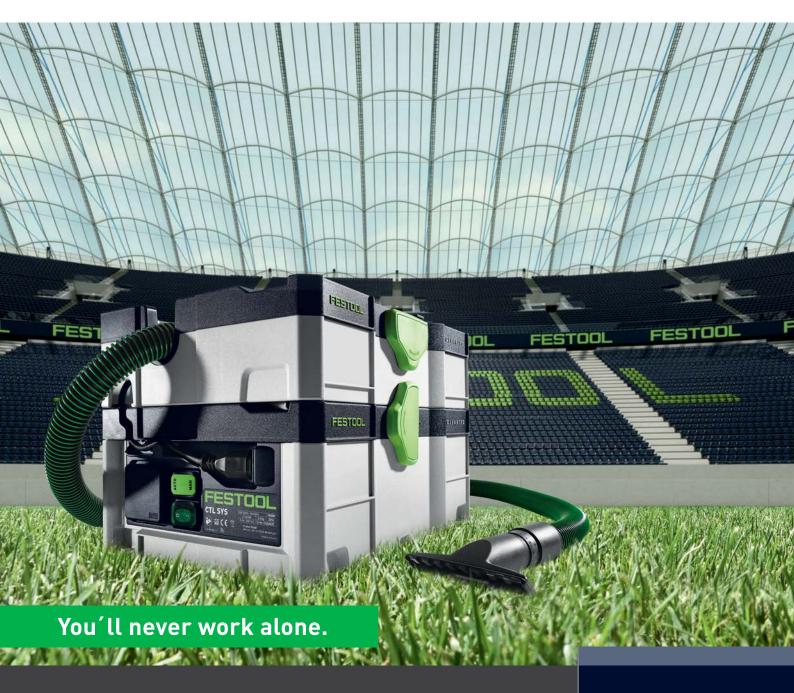
within an acanthus and lotus-leaf cast gilt bronze surround with scrolled acanthus and flowerhead mounted re-entrant angles, flanked by keeled angles with espagnolette mounts, over a central lion mask cartouche mounted apron, on acanthus-headed lion paw sabots.

This piece shares a number of characteristics in common with another *meuble à hauteur d'appui* produced in France during the last quarter of the 19th century. It is dated circa 1880 and attributed

to Joseph Emmanuel Zwiener, and also incorporates a bold central *vernis Martin* panel. This piece is available to view online at www.onlinegalleries.com. The resemblance between both pieces is apparent not only in their triple panel mounted breakfront design, but also in the distinctive frieze mounts and female espagnolette mounts each with distinctive plumed headdress. While even the elegant scrolled acanthus mounts seemingly emanating from the top of the re-entrant angles are virtually identical.

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