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Welcome

... to rejuvenation

I've got a little quiz for you, there's no prize by the way, it's just a bit of fun to warm up the grey matter before we get down to business as usual. So eyes down and fingers on buzzers please. What do Alec Issigonis, Bob Dylan, Dante Giacosa, Mary Quant, Armitage Trail, Ferdinand Porsche and Jean-Francois Oeben have in common? Answer: They were the originators of some of the most iconic, trendsetting and seemingly unsurpassable masterpieces of their genre. But history has a habit of repeating itself and out of nowhere it seems the sacred emblems that define a generation have a knack of rising to the top again, revived, reinterpreted and replicated.

Back to the future

Issigonis's Mini hit the streets in 1959 and lent its name to that other symbol of '60s style, the mini-skirt. The former has since been revived and spawned a dubious lookalike, while the latter has never really been out of fashion. In November 1967 Bob Dylan recorded *All Along The Watchtower* in a recording studio in Nashville and although nobody sings Dylan like Dylan, six months later Jimi Hendrix took the mournful ballad and turned it into a rock classic where it remains an anthem for every angst-ridden teenager refusing to mature beyond 18.

The 1932 film *Scarface* based on the novel by Armitage Trail was about as realistic a representation of a nation's fascination with organised crime as you can get without it being a fly-on-the-wall account, but Al Pacino will always be the name that sticks. The first city car was created by Dante Giacosa in 1957 for Fiat and remained in production in various forms until 1977. Reincarnated in 2007, the Fiat 500, complete with middle-aged spread is back turning heads with versions linked to Ferrari, Felipe Massa, Gucci and even Barbie.

The 356 is considered to be Porsche's first production motor car and a pre-cursor of the 911, but sadly on this occasion it's not the focus of our attention. It is the VW Beetle designed by Ferdinand Porsche senior under instructions from Adolf Hitler that has made a comeback. The



The 356 is considered to be Porsche's first production motor car and looks as good today as it did in 1948

fact that it made a name for itself at all is bizarre given that the fastest growing market outside of Germany was a largely Jewish/American post-war community. So that just leaves us with Oeben's Bureau du Roi, something that regular readers will now be familiar with I hope. The King's Desk set in motion, quite literally, the idea that furniture could be made to function and not just exist way beyond the realms of current thinking.

The makings of a classic

As much as I'd love to spend time adding to this list it's diverting me away from the point and my second question: Which of the aforementioned is the odd one out? Answer: The King's Desk of course; the others were all originals. *F&C* subscriber, Stephen George, sent in a brochure from a little-known museum in Paris called Musée Nissim de Camondo, where he discovered the precursor to the King's Desk and the first example of a roll top. To continue with our theme, not a lot of people knew that, but now thanks to Mr. George they do.

The small, ladies' writing desk was completed by Oeben, perhaps to test a new design before starting work on the famous King's Desk. It became part of the collection of Comte Moïse de Camondo, a collector of 18th-century French furniture, who

commissioned a private mansion to accommodate his collection. Camondo intended to leave the mansion along with its contents to his son Nissim who sadly died in an air battle during the First World War in 1917. The estate was bequeathed to the Arts Decorative and opened a year after Moïse's death in 1935. The remaining family members were to perish at the hands of the Nazis during the Second World War.

You'd think by now we'd have perfected the art of future-proofing our creations by factoring longevity into the design equation but a true classic goes beyond the physical attributes to a place deep in our hearts. The object of desire should lift the spirit and make the pulse quicken. What defines a classic is hard to say and even harder to predict; it isn't necessarily linked to the passing of time but we can say with certainty that we don't all agree on what it is. There, I've said my piece so why not have your say and let me know your classics.

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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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angle joints for comfortable chairs**

Front cover image courtesy of John Bullar

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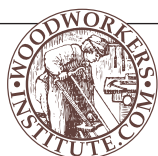
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Get a peek at what we'll be bringing you in issue 204

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



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Contribute to these pages by telling us about matters of interest to furniture makers. Call Miriam Bentham on 01273 402893 or email miriamb@thegmcgroup.com. Please accompany information with relevant, hi-res images wherever possible

News & Events

Lie-Nielsen's Deneb Puchalski comes to UK & Ireland



Deneb Puchalski interacting with students at Rycotewood Furniture Centre

Lie-Nielsen has legendary status among hand tool enthusiasts, due to its blend of high quality manufacturing and uniquely modern take on the historic and valued planes of the past. Deneb Puchalski, Lie-Nielsen's hand tool and sharpening guru, will be visiting Ireland and the UK this March. He will be demonstrating close to Dublin followed by a short tour of the UK.

Made in America

Lie-Nielsen Toolworks began in 1981 as an effort to make top-quality hand tools available again from a US maker and to revive discontinued but useful designs so the average woodworker could obtain them.

Today Lie-Nielsen makes over 100 types of planes, saws, spokeshaves, chisels, floats and more. It has improved and refined designs, using quality materials like ductile iron and manganese bronze for castings and cryogenically treated A-2 tool steel for blades. The plane blades are much thicker than those of any other plane manufacturer. The quality of machining and finishing results in a tool that looks as great as it is to use and will be a pleasure to work with for years to come.

Lie-Nielsen proudly continues its tradition of 'Made in America';

instead of out-sourcing jobs for the cheapest price and short-term profit, it is stubbornly local. By sourcing metal castings from New England foundries and wood from Maine sawyers, everything is made the old-fashioned way at the shop in Warren.

Lie-Nielsen also teaches the craft of woodworking through instructional DVDs, YouTube videos and seasonal weekend workshops. The showroom and factory are open to the public for tours and demonstrations. Through travelling Hand Tool events, Lie-Nielsen collaborates with woodworking guilds, businesses, and schools across North America to promote woodworking education – specifically geared towards hands-on skill building.

Talking Tools

Deneb Puchalski is a recognised authority on how to get the very best from these excellent tools. He can help with advice on sharpening, plane tuning and many more techniques. His passion and enthusiasm for the tools he works with are clear to all who have seen his demonstrations.

Anyone keen to see Deneb in action and learn how Lie-Nielsen maintains its superb reputation can do so at several venues all over the UK and Ireland from 7–16 March, 2013. The full list of dates and venues can be found on page 7, or at www.axminster.co.uk. Also, for a full range of instructional videos, tool usage and more, visit the Lie-Nielsen YouTube channel.



Deneb Puchalski at a Talking Tools event demonstrating with a Lie-Nielsen plane

RSA House refurbishment rewarded



PHOTOGRAPH COURTESY OF BWF

RSA House has been the home to some of the greatest thinkers and social activists of the last 200 years

Sussex-based Icklesham Joinery has been awarded a prize for technical excellence and innovation in joinery manufacture for the outstanding renovation of the Robert Adam designed, RSA House, off the Strand in London.

This Georgian masterpiece, first built in 1774 has been the home of some of the greatest thinkers and social activists of the past 200 years. It boasts a famous glass-domed roof, allowing daylight to illuminate the celebrated paintings *The Progress of Human Knowledge* by James Barry, which adorn the upper walls.

Marc Horsman, Contracts Manager said, "Contemporary solutions had to be found to the client's exacting specification. It has been challenging in terms of innovation, client satisfaction and attention to detail, but worth every minute. We are very proud to be part of this great house's heritage."

Sustainability at The Furniture Makers



PHOTOGRAPH COURTESY OF THINKSTOCK/ISTOCKPHOTO

The Furniture Makers announce a new sustainability award for 2013

The efforts of British furniture manufacturers to become greener are again to be recognised with the launch of the second annual Furniture Makers Sustainability Award.

British manufacturing members of the Furniture Industry Sustainability Programme (FISP), administered by FIRA have been invited to enter the award, which aims to recognise, reward and publicise the good work being done in the British furniture industry to further sustainable manufacturing. This year, current holders of the Furniture Makers' Manufacturing Guild Mark will also be eligible to enter as sustainability is one of the criteria used to assess companies applying for the Mark.

If you'd like to learn more about the award, visit www.furnituremakerspress.org.uk.

The Mixtape Table



PHOTOGRAPH COURTESY OF JEFF SKIERKA DESIGNS

'Mixtape Table' celebrates 50 years of the cassette tape

To celebrate the 50th anniversary of the cassette tape, Jeff Skierka Designs brings you the 'Mixtape Table' – a 12:1 scale replica of a cassette tape. The table is made of high-grade Baltic birch plywood with maple (*Acer campestre*) veneer, solid American walnut (*Juglans regia*) throughout and a hand-rubbed oil finish. Each coffee table is built to

order, hand-assembled and finished in Seattle by the JSD team. The table is completely reversible with sides 'A' and 'B' stamped and numbered on each side.

The table can be shipped both domestically and internationally for an added cost. To place your order or to find out more, visit www.jeffskierkadesigns.com.

Waters & Acland win Guild Mark

We are pleased to confirm that Waters & Acland have been awarded Bespoke Guild Mark 446 for their 'Sukiru' sideboard. The sideboard was designed by Will Acland and made by Graham Loveridge and Oliver Waters. Inspired by the Anglo-Japanese movement the sideboard boasts flick breadboard ends and through tenons. It took seven months to complete. The Worshipful Company of Furniture Makers, the organisation responsible for awarding Guild Marks, described it as, "A nice piece exhibiting good proportions and detail – excellent craftsmanship."



The 'Sukiru' sideboard was awarded Bespoke Guild Mark 446

PHOTOGRAPH COURTESY OF WATERS & ACLAND

News *in* brief

Thermochromic furniture



PHOTOGRAPH COURTESY OF JAY WATSON

It's rare that people buy furniture with the motive of embarrassing their guests in mind, but what other explanation can be offered for Jay Watson's thermochromic furniture? This table and bench responds to the sitter's body heat and leaves a thermal imprint of their body. Made of solid oak (*Quercus robur*), its surface is coated with thermochromic paint so that when exposed to heat, its colour changes temporarily. To find out more about 'Linger a Little Longer' visit the website: www.jaywatsondesign.co.uk.

Furniture discovery



PHOTOGRAPH COURTESY OF HANSONS AUCTIONEERS

The 17th-century furniture discovered

A very rare collection of furniture dating back to the Great Fire of London of 1666 has been discovered in a Staffordshire house. The furniture was found after a routine inspection of an estate near Lichfield following the death of an elderly couple. Auctioneer Charles Hanson said, "On entering the house it was like going back in time to the period of Shakespeare."

Toolshow2013



PHOTOGRAPH COURTESY OF PR INDUSTRIAL

Toolshow2013 aims to build on last year's event

Toolshow2013 is building on the success of the 2012 event and aims to be the largest tool show in the country. Toolshow2013 will be over twice the size of the previous event and takes place at the Amex Stadium, Brighton from 20–21 July this year.

Bespoke book published

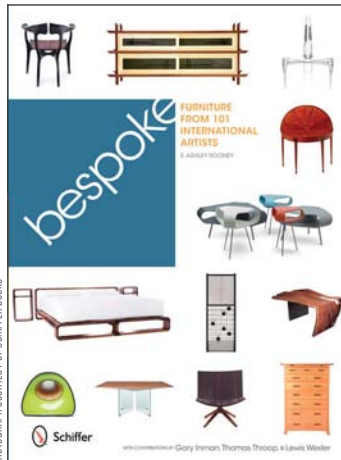
Custom-designed furniture has been around for decades. Today more people than ever before are discovering the joys of custom-made furniture. American writer, E. Ashley Rooney, recently included 10 British makers in her new publication – *Bespoke, Furniture from 101 International Artists* – a colourfully illustrated collection

of 101 international artisans. Interestingly, many of these makers regularly grace the pages of *F&C*.

The British furniture designers selected are William Acland, Joe Della-Porta, Paul Gower, Harry Hare, Alun Heslop, Rachel Hutchinson, Derrick Ibbott, Robert Kernohan, Nicholas Langan and Amanda Ransom.

The custom furniture movement originally developed as a reaction to increasing industrialisation. In his essay in *Bespoke*, Lewis Wexler of Philadelphia's Wexler Gallery points out that, "The studio furniture movement originally developed as a reaction to the Industrial Revolution. In a time when mass production and disposable products are the norm, a younger audience concerned with the environment seems to be gravitating toward items that are made with sustainable materials."

The book, which is published by Schiffer Publishing, is available at Barnes & Noble and Amazon.



Bespoke features a number of F&C regulars

Duke's desk at Bonhams

A George III mahogany (*Khaya ivorensis*) double-sided kneehole desk reputedly owned by Sir Alexander Dixon is one of a selection of desks in the recent Gentleman's Library sale at Bonhams, Knightsbridge, which took place on 30 January this year.

Major General Sir Alexander Dixon fought during the Napoleonic and Peninsular wars and due to his skill and ability in battle, the Duke of Wellington held him in high esteem. Towards the end of the Peninsular War the Duke appointed Sir Alexander to a commander position of great responsibility in charge of 8,000 men. For his efforts during these wars and other conquests he was awarded the Knights Grand Cross of the Order of the Bath.

In 1904, a valuation for Sir Alexander's son recorded a piece of mahogany camp furniture, which is

believed to be the desk in question. The current vendor remains a direct relation to Sir Alexander and acquired the item of furniture from the Great, Great Granddaughter of Sir Alexander, the late Miss P. M. Burnaby.

The George III mahogany desk will be included in Bonhams' Gentleman's Library Sale



PHOTOGRAPH COURTESY OF BONHAMS

Norbord's new name

In a bid to help their customers identify the right board for their requirements, Norbord has renamed its top-selling MDF range. Norbord is the UK's leading panel products manufacturer and the rebranding seeks to group their MDF by way of its end-use rather than its particular qualities. The three groupings: trade, professional and industrial are more descriptive and in keeping with the well-established tradition in the building materials industry.

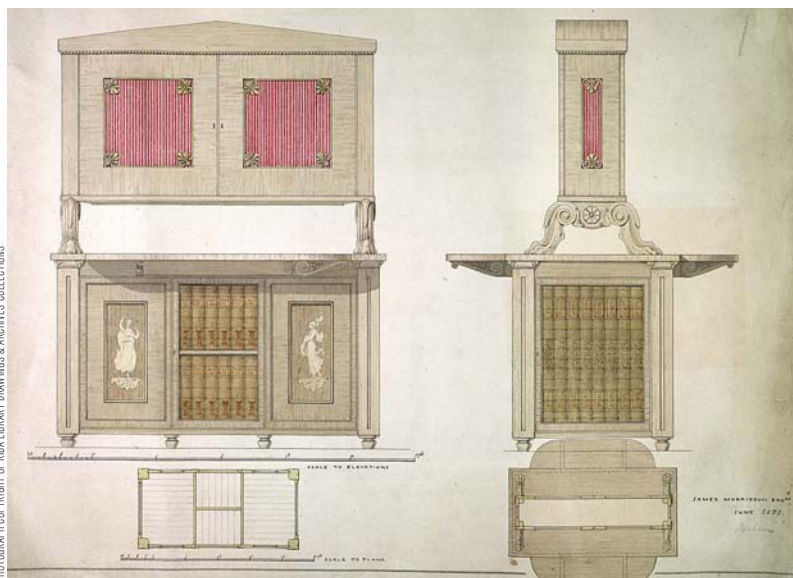


PHOTOGRAPH COURTESY OF NORBORD

Back to basics as Norbord introduce a new labelling system for sheet material

Diary

PHOTOGRAPH COPYRIGHT OF RIBA LIBRARY DRAWINGS & ARCHIVES COLLECTIONS



Design for a sideboard for Dromore Castle, Co. Limerick, c.1867 by Edward William Godwin (1833-86)

The Architect as Furniture Designer

This symposium brings together a number of distinguished scholars and curators to speak on architects from the 18th century to the 21st century and their moveable contributions to the interiors of their buildings. The sessions will be chaired by Charles Hind, Chief Curator, RIBA Library and Julius Bryant, Keeper of the Word and Image Department, Victoria and Albert Museum.

Tickets must be purchased in advance and early booking is recommended. Tickets cost £40 for FHS and RIBA members; £35 for FHS/RIBA student members and FHS/RIBA OAPs and all non-members £45. Ticket price includes morning coffee and afternoon tea. See the website for full details.

When: 9 March, 2013
Where: The Wallace Collection, Hertford House, Manchester Square, London, W1U 3BN
Web: www.furniturehistorysociety.org

Desire Fair

The Desire Fair at Kensington Conference and Events Centre features jewellers working in leather, acrylic, ceramics, paper, glass, copper and wood as well as more traditional silver, gold and platinum jewellery featuring gemstones, pearls, beads and enamel work. Visitors to the event will be able to see and purchase work from around 120 exhibitors all with a genuine passion for the work they create. The fair

also gives visitors the opportunity of discovering the inspiration behind the pieces or discussing bespoke work.

When: 15-17 March, 2013
Where: The Kensington Conference and Events Centre, Hornton Street, W8 7NX
Web: www.desirefair.com

Deneb Puchalski demonstrations

As already mentioned on page 4, Deneb Puchalski, hand tool and sharpening guru from Lie-Nielsen, will be visiting Ireland and the UK this March. He will be demonstrating close to Dublin followed by a whistle-stop tour of the UK. A full list of dates, venues and times is shown below.

When: Thursday 7 March, 2013 – The Carpentry Store Naas near Dublin, open evening event (4pm-7pm); Friday 8 & Saturday 9 March, 2013 – Axminster Tool Centre High Wycombe, open day event (10am-4pm on both days); Tuesday 12 March, 2013 – Classic Hand Tools Witnesham, Ipswich, open afternoon event (2pm-5pm); Wednesday 13 March, 2013 – G&S Timber Penrith, open afternoon event (1pm-4.30pm); Thursday 14 March, 2013 – Brodies Timber (formerly Jean Burhouse) Dunkeld, Nr Perth, open afternoon event (2pm-4pm); Friday 15 & Saturday 16 March 2013 – Axminster Tool Centre Warrington, open day event (Friday 12noon-4.30pm, Saturday 10am-4pm)
Web: www.lie-nielsen.com

South East Woodworking & Power Tool Show

Returning again this year, the South East Woodworking & Power Tool Show includes a great line up of demonstrators including woodturners Mick Hanbury, Tony Wilson, Dave Reeks and Jennie Starbuck. The show will comprise a full range of demonstrations, trade stands, advice and fun. The show includes free parking, show guide and raffle. Tickets can be purchased in advance.

When: 7-8 March, 2013
Where: Kent County Showground, Detling, Nr. Maidstone, Kent
Web: www.nelton.co.uk

Make-it: Furniture Design (for 10-12 year olds)

This family event allows children to create new designs for furniture with artist Sarah Bridgland. Children are able to capture their ideas on paper and make a model. Tickets cost £7.50 per person. Children do not need to be accompanied by an adult but emergency contact details must be provided. Booking in advance is essential.

When: 16 March, 2013
Where: Seminar Room Two, Sackler Centre, V&A Museum
Web: www.vam.ac.uk



One of Heather O'Connor's designs, which fuses wood and metal. Heather will be exhibiting at the Desire Fair from 15-17 March, 2013

PHOTOGRAPH COURTESY OF DESIRE FAIR

Editor's round-up...

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

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



PHOTOGRAPH BY GUY ANTHONY BAILEY

As ever I think we have assembled an eclectic mix of content and products in this issue to help you match your skills to your equipment. My favourite finds this month are the ToolGuard VCI pots and the 5-day course at Dictum's workshop in Germany with Gary Rogowski. You'll have to be quick to sign up for this one as it's scheduled for 8 April, 2013. I've been over to Dictum's workshop in the woods and it's very impressive. If you miss this one don't worry, there are plenty to choose from throughout the year. As for the VCI, I got caught out like we all do sometimes and opened the lid on a box of planes to find rusty finger prints all over the steel. Shield Technology do some great products and I'll be using some of them next month, but this is one of those preventative measures that will spare you the tears. I noticed a chink in my armour this week and invested in a Quangsheng stainless steel spokeshave from Workshop Heaven. The choice was purely coincidental and it may prove to be a trend for future acquisitions for the reasons previously stated. I'll let you know how we both got on next month. Hopefully I've done enough to whet your appetite, so let's have a look at all these and more in greater detail before we head for the bench.

Kamasa hobby knife set

Versatility is synonymous with Kamasa and this is demonstrated with their new hobby knife set which offers 12 blades, each with a different profile, plus two

£9.28



F&C MINI TEST: Elmer's Tinted Woodfillers

Elmer's products are a household name in the USA, but still quite new to us in the UK. They make glues, adhesives and woodfillers. We have already tried out quite a few of their glue products and have been very impressed with them in terms of quality and usability. The tinted range of fillers are formulated using various powdered materials in an acrylic water-based medium. The full range is supposed to be six colours, but currently only four

are available in the UK. They are natural, white, walnut and golden oak in 96ml squeezable tubes.

The fillers are easy to squeeze out of the tube and fill holes and cracks while reducing the amount of shrinkage in larger holes. It can be cleaned off level with a sharp chisel or sanded without difficulty. The colour matches are good and will allow you to make quite discreet repairs.

From: www.elmersglue.eu

96ml
£4.06



PHOTOGRAPH BY GIN ANTHONY BAILEY



£2,634

scribers. The blades twist and lock into the soft grip handle and the range is suitable for both straight cutting and more intricate detail work. The blades are kept secure on a magnetic bar which is mounted within the sturdy storage case.

AirBench EX-A

AirBench EX-A is specified for the extraction of non-sparking dusts with a relatively large particle size in the range of 5-10 microns. AirBench EX models are standard duty downdraft benches, constructed from robust anodised aluminium frame sections and plastic coated leathercloth grey steel outer panels, with galvanised steel inners.

The surface is constructed from 3mm-thick perforated steel and powder coated after fabrication with a smooth finish. Filters are clamped against soft rubber seals and can be quickly accessed via the top for cleaning. Replacement is via removal of the front cover. Filter changes can be accomplished in minutes. AirBench EX is suited to both light industrial applications, and office or laboratory applications, where a high grade of finish is required. Specifications may vary; contact AirBench to discuss the correct model and filter selection for your application.

Axminster Tool Centre 2013 catalogue

Axminster Tool Centre's free 2013 catalogue offers the largest range of tools, machinery, accessories and consumables in the UK and is an absolute must-have for all tool and machinery users. The 2013 full colour catalogue has over 1,600 new lines and a fantastic selection of over 11,000 product lines to choose from. It brings together quality brands and offers all the information you need to decide on the right product for you and there are many price reductions.

This year the information provided makes it much clearer for customers buying a machine, ensuring they are given guidance on the one most suited to the job. There are now three categories: hobby, trade and industrial – an explanation and colour coding for each of these is given in detail in the catalogue.

Magswitch Starter Kit

Featuring a base, 2 MagJig 150s and reversible featherboard, this workholding system features award winning Magswitch on/off magnets. The starter kit includes the universal base, and two removable MagJig 150s – with a clamp force of 150lbs – and the reversible featherboard

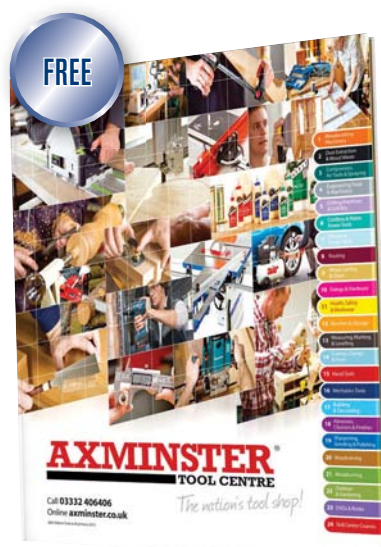
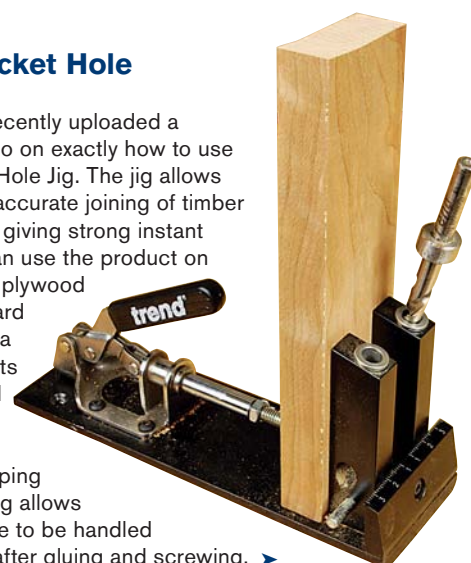


£72.48

attachment. All you need is a steel table or fence. Magswitch featherboards grip with incredible force with a simple 180° turn of a knob. The kit allows fast setup, safety against kickbacks, left or right feeds and precise-feel tensioning – there is no need for a mitre slot. Use anywhere on a table or fence – infeed or outfeed; right or left feed. The Starter Kit is the economical way to get started with a workholding system.

Trend Pocket Hole Jig video

Trend have recently uploaded a YouTube video on exactly how to use their Pocket Hole Jig. The jig allows the fast and accurate joining of timber and plywood giving strong instant joints. You can use the product on timber, MDF, plywood and blockboard and it allows a variety of joints to be created individually. Using square drive self-tapping screws, the jig allows the workpiece to be handled immediately after gluing and screwing, ➤



Contacts

AirBench EX-A

Contact: AirBench
Tel: 01206 791 191
Web: www.airbench.com

Atkinson-Walker variable pitch blade

Contact: Atkinson-Walker
Tel: 0114 275 2121
Web: www.atkinson-walker-saws.co.uk

Axminster Tool Centre 2013 catalogue

Contact: Axminster Tool Centre
Tel: 03332 406 406
Web: www.axminster.co.uk

Elmer's Tinted Woodfiller

Contact: Elmer's
Web: www.elmersglue.eu

Kamasa hobby knife set

Contact: Kamasa
Tel: 01926 815 000
Web: www.kamasa.co.uk

Kreg Multi-Purpose Push Stick

Contact: Kreg
Web: www.kregtool.eu

Magswitch Starter Kit

Contact: Magswitch
Web: www.magswitch.com.au

Numatic SSTD 750 Fine Dust Vacuum

Contact: Axminster Tool Centre
Tel: 03332 406 406
Web: www.axminster.co.uk

Replacement blade for Stanley #80 cabinet scrape

Contact: Lee Valley
Tel: (001) 800 871 8158
Web: www.leevalley.com

Rogowski stool

Contact: Dictum Tools
Web: www.mehr-als-werkzeug.de

ToolGuard VCI

Contact: Workshop Heaven
Tel: 01295 678 941
Web: www.workshopheaven.com

Trend Pocket Hole Jig video

Contact: Trend
Tel: 01923 249 911
Web: www.youtube.com/watch?v=ZHuCMzAlpDs

- thus creating time saving benefits. No clamps are required. If you have just bought this jig, or are thinking of buying it, then check out the video and see for yourself just how easy it is to use.

Numatic SSTD 750 Fine Dust Vacuum

The SSTD 750 has a large capacity and plenty of power which makes it the ideal companion for multiple cleaning tasks. The vacuum is able to separate finer dusts from coarse particles making it useful for recycling

purposes such as shot blasting. Two TwinFlo vacuum motors give an outstanding performance making the vacuum suitable for a whole host of applications.

Each vacuum comes complete with a Filtrex primary filter and secondary Permatex filter, giving a filtration level down to 0.5 microns which is further enhanced by the included pack of HepaFlo disposable bags. The vacuum is ideally suited for use with a 32mm hose but can accept hose sizes up to 51mm via the cyclonic entry fitted to the lower drum assembly. A basic kit is supplied which is ideal for connecting to small hand held power tools such as wall chasers. The supplied kit makes the vacuum ready for immediate use.

ToolGuard VCI

Volatile corrosion inhibitor is the chemical used in small quantities to impregnate the paper that new tools are sometimes wrapped in. Rather than simply creating a physical barrier, the VCI product actively interferes with the electro chemical corrosion process.

Each Shield Technology ToolGuard VCI pot contains an absorbent pad that is literally soaked in the stuff. Once the lid is removed the vapour is released very slowly, providing up to 12 months corrosion protection in a volume up to 2 cubic feet.

The ToolGuard VCI pots are designed to protect tools and components in storage cases, toolboxes and tool chests. In large cabinets, distribute several pots evenly throughout, using the adhesive backing if necessary. In traditional cabinets with wooden drawers, use one pot per drawer. Larger items like drill presses and bandsaws can be protected by placing a ToolGuard VCI pot on the tool and covering it with



F&C MINI TEST: Kreg Multipurpose Push Stick

We've been using a Kreg router table for quite a few months and this is where this little push stick is best suited. The low fence on the table allows you to run tight up against it with the push stick, although not past the overhead cutter guide. There's a steel rule on board and somewhere to store a pencil and even a magnet to attach it to the frame when the job is done. The elevated grip position does generate a lot of downward force that some operations may benefit from. As a workshop safety tool, that's about as far as it goes because the grip puts your hand far too close to the blade for use on a tablesaw.



From: www.kregtool.eu



a heavy plastic bag when not in use. Until the container is opened, its shelf life is infinite.

Atkinson-Walker variable pitch blade

This blade has a random variable pitch of teeth and the shape of tooth has a rounded back which will aid chip flow when cutting. The grade of tungsten carbide used is harder than some general purpose blades which will give a longer cutting life between resharpening and is designed particularly for cutting manmade boards which are quite abrasive.

The sharpening geometry is slightly different to other standard wood cutting TCT blades in that the fronts of the teeth are ground with a 2° alternate bevel to the tungsten tips which will provide a slightly smoother cut. Additionally the tips are ground with an extra fine grade of diamond wheel using a high performance cutting oil to produce a fine finish to the tungsten tips providing the maximum life before they require

sharpening. The steel used is a high grade of carbon spring steel and each laser cut blade is precision surface ground and tensioned to ensure that the blade runs perfectly true to provide a super clean cut and the three laser cut expansion slots are an additional aid.

Replacement blade for Stanley #80

Though it has been out of production for more than 25 years, the Stanley #80 cabinet scraper remains a tried and true workhorse in many workshops. Since finding a replacement blade can prove difficult, Lee Valley and Veritas decided to make one to fit most major brands of #80 scrapers, including all those made by Stanley from 1898 to 1984.

The 70mm wide blade is made from 0.055in thick high-carbon steel, with two finely ground 45° cutting edges that can be burnished to form a durable hook. Because it has two working edges, you can prepare both at once, reducing the frequency of

sharpening sessions. A simple retrofit, and an affordable way to breathe new life into a classic tool.

Gary Rogowski stool making course

Influenced by Scandinavian and Chinese elements, this stool is a perfect combination of convenience and timeless design. Gary Rogowski is the tutor on the 5 day course at Dictum's workshop in Germany demonstrating the use of hand tools and a power router to make the stool's traditional wood joints, as well as shaping the individual components. Learn how to use templates and self-made clamping devices and discover the valuable use of the spokeshave and scraper. Each student builds their own stool. The seat measures 300 x 350 x 700mm. *F&C*





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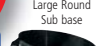
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After the design press feted Benjamin Hubert as the next big thing, he survived the media frenzy and established himself as a consistently innovative designer as Miriam Bentham discovers

Internationally-acclaimed designer Benjamin Hubert founded his eponymous studio in 2009 in North East London. After graduating from Loughborough University with a first class degree in Industrial Design and Technology, Benjamin cut his teeth in several renowned design consultancies including Seymour Powell, DCA and Tangerine before establishing his own studio. Working with multinational brands including Nike, Samsung, LG, Mamas and Papas, Coca-Cola and Eurostar enabled Benjamin to build up an impressive wealth of knowledge.

A unique approach

F&C met the young designer at 2012's Design Junction event where we were immediately taken with his 'Maritime' chair, which later featured in our round-up of London Design Festival. The chair characterises Benjamin's unique take on design. It has borrowed from traditional wooden shipbuilding techniques and makes its supports visible from the outside. Benjamin describes this as revealing a "design language that is in harmony

with the material and production." The ribs allow for a structurally robust chair with minimum use of material.

Evident from Benjamin's 'Maritime' chair is his rare combination of design ability and business nous. His designs don't stop once the finished article is completed; each piece inhabits a place in Benjamin's defining oeuvre and can only be considered as small parts of one complete output of work. He designs beyond his latest project and in this way his keen business sense and ability to establish his name as a brand is perhaps what ensured his support didn't disappear with the hype of 2010.

The studio

Benjamin now leads a dedicated team of industrial designers working across a broad range of sectors including furniture, lighting, consumer goods, architectural installations and art direction. Benjamin Hubert works internationally in a variety of markets including Europe, Asia, Australia, Brazil and the US.

The studio works to the mantra: Materials Driven. Process Led.

Materials driven,



'Pebble' chairs for De Vorm



This focuses on the research of construction, context and application of new materials.

Benjamin Hubert has received international critical and media acclaim and has been exhibited internationally. The studio has also received a number of prestigious awards including: Design of the year (British Design awards 2010), Best Product (100% design/Blueprint awards 2009), Homes and Gardens Young Designer of the Year (Design Classic Awards 2010), EDIDA International Young Designer of the Year 2010, the A+W Audi Mentorpreis 2012 and the winning commission for 'Poltrona Frau Centenary' armchair.

Vision

Benjamin Hubert conducts materials driven industrial design

projects where the starting point of the process is the material or production technique. His studio aims to challenge the everyday application of materials, traditions of construction and ideas of context.

Inspiration comes directly from the studio's network of factories and workshop environments where the products are produced. The resultant objects are therefore inherently connected to the way they are made with a concise honesty, high functionality and appropriate design language.

Benjamin Hubert's design ethos is to create timeless objects that do not rely on trends or fashion but usability analysis, interaction, materiality, sustainability and a process of visual reduction.

This is why research defines the starting point for every project. To create something new, there first must be a good reason for it to exist. Can a product be made easier to use or more efficient? Can the performance

'Float'

process led



The 'Maritime' chair – as seen at Design Junction – and table

MAKER'S MAKER: Benjamin Hubert on Ray & Charles Eames



Charles and Ray were pioneers of design

Benjamin's combination of design innovation and business nous can be compared with that of the Eameses. He says: "I'd like to be involved in pushing a manufacturing process further, like the Eames couple did, rather than just style. Of course, it's difficult to talk about this without referencing specific designers and I don't want to do that. But there are, of course, some designers who do style really well, and create brands from their stylistic direction. From a purely business point of view, it makes a lot of sense."

Ray and Charles Eames were more than designers, they were pioneers. They worked with technologies to advance new materials and working methods, for example, their moulded plywood work and the fibreglass and plastic resin chairs designed for Herman Miller. Perhaps best known for their furniture, Ray and Charles also designed textiles, were architects, furniture and film makers, curators of exhibitions, artists and business people.

In this sense the variety of their collaborative talents achieved what Benjamin speaks of when he talks of designers who create brands from their stylistic direction. The Eameses went one step further by defining the Mid-century Modern look that Vitra have continued to this day.



The iconic
Eames 'Lounge
Chair'



Benjamin in the studio constructing his 'Pelt' chair for De La Espada

➤ be increased or the carbon footprint decreased? These are some of the questions Benjamin Hubert attempts to answer in his designs.

Research

What enables Benjamin to be constantly evolving his designs is the emphasis he places on research. Without this, it is unlikely his studio would be constantly innovating and finding new and useful materials to use, which would hinder the development of new ideas.

A research study can take anything from six months to four years. They take a variety of forms at the studio. A study could focus on analysis of usability and ergonomics – how people really use products – for example. Or perhaps on design language research – how can something be created that is visually new or has a new typology? Not forgetting investigations into materiality – can a new construction or material be found that allows us to increase a product's performance, the user's experience or to challenge the accepted norm?

Benjamin also focuses on the user's perceptions of materiality and challenges preconceived ideas of context or usage. A good example of this is the concrete lighting range with its thin-walled construction drawn from the ceramic industry, created in a specialist factory in Germany. By creating a more refined elegant structure and illuminating it, the project aimed to elevate the user's perception of material worth, rather than accepting concrete as a low-value architectural commodity.

In this sense Benjamin Hubert is unique. By constantly asking questions he avoids stagnation.

Sustainability

Benjamin strongly believes that sustainability shouldn't be a separate subcategory when approaching a project; he sees it as one of the inevitable elements of design that any good designer will look at during the creation of a piece. For him it is a fully-integrated consideration when embarking on a project.

For Benjamin, sustainability is an important part of each project, whether in creating products that will last a lifetime from a perspective of both quality and durability, or from recyclability and a more holistic approach to infrastructure. A good example of the latter is the large pod chair where traditional upholstery, with its multilayered material approach, has been replaced by a lightweight recycled PET plastic felt shell with great acoustic properties and a small carbon footprint due to its stacking design for transportation. The studio is also interested in supporting local or dwindling industry, whether it's utilising the ceramic industry in the UK, or supporting a commercial enterprise under threat, for example the cork industry, which is highly sustainable but its core market is disappearing due to the increasing use of plastic wine stoppers.

Bright future

After weathering the hype of the design press and coming out the other side, intact and intent on creating quality pieces that will add value to the lives of their owners, Benjamin Hubert appears to have a dizzying quantity of designs up his sleeve, so keep your eyes peeled. *F&C*

Contact

www.benjaminhubert.co.uk

Real Bosch! How To Guide



Ever wondered how the professionals do it? Not sure and need some advice on doing a new task?

Not only is there the guide below, but you can also have the workshop wizard Alan Holtham run through this task in the online "How To" video by scanning the QR code with your smart phone or alternatively visit our [YouTube](#) channel at the bottom of the page.



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Making a Raised panel door

In this issue Bosch and Alan help you out with a guide to cutting and assembling a raised panel door using a router and worktop jig.

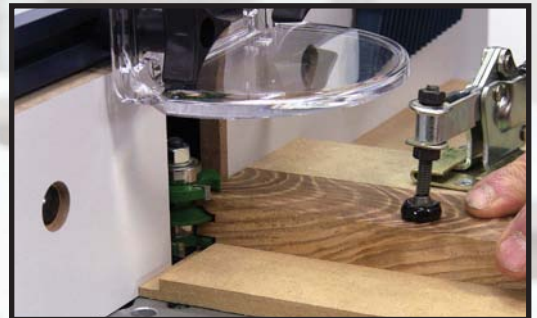
Main tools for the job



You will need a powerful 1/2" router, a router table and a set of panel door cutters



The timber must be thickened precisely



Use a homemade jig to scribe the rail ends



Adjust cutter height to machine profile



Make trial cuts and adjust height until joint is flush



Machine the profile on rail and stile edges



Form the panel mould with progressively deeper cuts



Assemble the door, sand the joints and radius the outer edges



Finished panel

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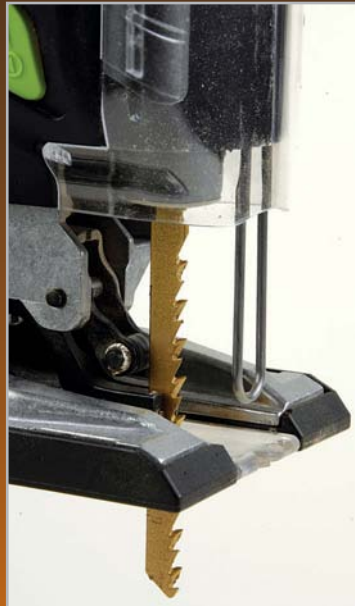


BOSCH
Invented for life

Festool Carvex PS420

With a well-earned reputation for excellence to uphold, Festool took their Carvex jigsaw back to the drawing board for a few tweaks

When we first looked at the Carvex 400 series back in 2010 and greeted it with open arms as it came with some interesting features that were new at the time. Two and a bit years later and Festool has released an updated version in response to criticism from end-users about the earlier model. With a premium product the expectations are disproportionately higher than those of a budget model and as a consequence the backlash on some forums was harsh but understandable. Many Festool diehards reported less than satisfactory results, with the main gripe centring around blade drift and the mechanism used to correct it. A miss, however close, is as good as a mile, so it was time for a rethink and the release of the 420 represents the power of the consumer when his feathers are well and truly ruffled.



Clear plastic blade shield can be raised to allow better visibility of the cutting area

Modifications

On the outside not a lot has changed; there is still a choice of body or stirrup grips, cordless or corded and 240 or 210V. Under the bonnet though things are quite different. Firstly the pendulum lift has undergone a redesign and a second wheel has been introduced behind the blade to help combat the blade drift.

Secondly the 420s have been installed with uprated brushless motors – from 500 to 550W – increasing the amount of energy transmitted through the gearbox to the cutting edge to around 80% of the motor's output. It's doubtful whether new users will notice the uplift apart from the extended battery life of the cordless machines. The 18V models are designed to run the equivalent of 14m through 40mm-thick kitchen worktop.

The 420 now has an electronic monitoring system linked to the motor designed to optimize power output in relation to the workload. A power saving feature, it can be overridden by pre-selecting the speed or activated by selecting the automatic mode. Because there are fewer moving

parts in a brushless motor they do run a lot quieter but as Festool kit is typically well engineered in the first place I doubt if there is any noticeable difference from the earlier models.

Other benefits

Other benefits include a slight drop in weight, largely due to the motor shedding more than 100m of copper wire, and LED lights that can be configured to stay on, switch off or strobe. This is done through a selection process using the two side switches. It's not obvious at first, so don't skip this section in the hand book. Although the improvements on the 420 cannot be retrofitted to the 400 model, the existing accessories are all compatible forward and backward across the range. All the new machines will come complete with a new baseplate that has been modified to accept the new blade guide mechanism.

Extraction

The rate of extraction is quite acceptable with a good vacuum. It's not 100% when cutting thick stock



A new support wheel has been placed above the blade guide which needs adjusting to fit each new blade





The numbers

Stroke speed: 1,500-3,800 (18V)
Stroke length: 26mm
Pendulum stroke: Three settings and off
Max cutting depth: 120mm/wood, 20mm/aluminium, 10mm/steel
Weight: 1.8kg without battery

Price: £320.40
From: Festool
Tel: 01284 760 791
Web: www.festool.co.uk

Speeds can be fixed or set to 'A' to allow sensors to optimise the power delivery

but considerably better on thinner material. Fitting the chipbreaker will result in clean cuts above and below the board. These are not essential for a lot of the work a jigsaw can do and they are somewhat of a hindrance when swapping baseplates or fitting a new blade.

It's all about the blade

Conventional wisdom would have you believe that a thin blade performs better on tight curves. There's plenty of logic behind the theory, but the Festool technicians have proved otherwise by developing a thicker blade with a wide kerf. A wide kerf creates more room for the blade to manoeuvre within the cut and reduces friction. A thicker blade remains rigid under load and therefore absorbs more energy from the gearbox transferring it to the cutting edge. Having a more efficient blade helps to resist heat build-up prolonging the life of the cutting edge and its ability to cut straight under load. In fact, if you're experiencing blade drift of more than 2mm through 40mm stock with any machine, you're either attacking



We were reliably informed that when fitted with the thicker blade the new Carvex would cut round a 10p piece



the cut too aggressively or using a dull blade. For best performance it comes down to one very important factor – choose a good quality blade in the first place and be prepared to change it regularly. Making repeated curved cuts in the same direction – anti-clockwise for example if you're right handed – will dull the blade on one edge causing it to veer off course. A single tooth out of set will have much the same effect. A vital step when fitting a new blade in the 420 is to set the guide jaws to the blade. This is done with the pendulum ➤

TESTS & EQUIPMENT

Festool Carvex PS420



The accessory pack has a cover plate for use on other materials apart from timber and five chip guards



The separate baseplates attach to the body using a quick-lock system



The sole of the bevel cutting baseplate can be adjusted to give support in both planes



The trammel bar works off a centre point to cut near perfect circles

F&C verdict

I wouldn't say that Festool has made a silk purse out of a sow's ear because the 400 wasn't a bad machine in the first place. When it comes down to it, a jigsaw is a roughing-out tool plain and simple. You can guide that first 25mm of blade travel, but for the remaining distance the blade has a mind of its own and is at the mercy of the operator. The improvements to the 420 have made a difference to the Carvex and for me what was already a perfectly serviceable machine is now even better. With the complete system I'd feel happy turning up on site confident that I'd be able to tackle anything that a jigsaw is capable of doing and probably more; that is after all what we expect from the chaps at Stuttgart. My last piece of advice is to make sure you have a second battery.

Pros

Good range of models
Sturdy platform for numerous accessories

Cons

Festool consumables are expensive
Only one battery supplied

➤ switch set to three. Using the Allen key supplied, adjust the jaws to just kiss the blade, not pinch it. Then back off the setting by about a half a turn. After this if the jaws are still in contact with the blade back off the setting an extra quarter of a turn and you should be set to go. A slot for the Allen key is soon to be integrated into the body casing on future models, but for now is part of the Systainer contents. Part of me questions the need at all to go to such lengths to make cuts that in most cases will never see the light of day. What's important though I guess is that you can and the results are largely consistent.

ZH-SYS-Accessory pack

On its own, the Carvex is something of a one-trick pony because the standard baseplate will only allow you to make cuts at 90° to the surface. Given the sloppy way some machines require you to slide the sole forward or backwards and then tilt it left or right to make bevel cuts, it's a distinct advantage. A dedicated baseplate is required instead that will dissect a

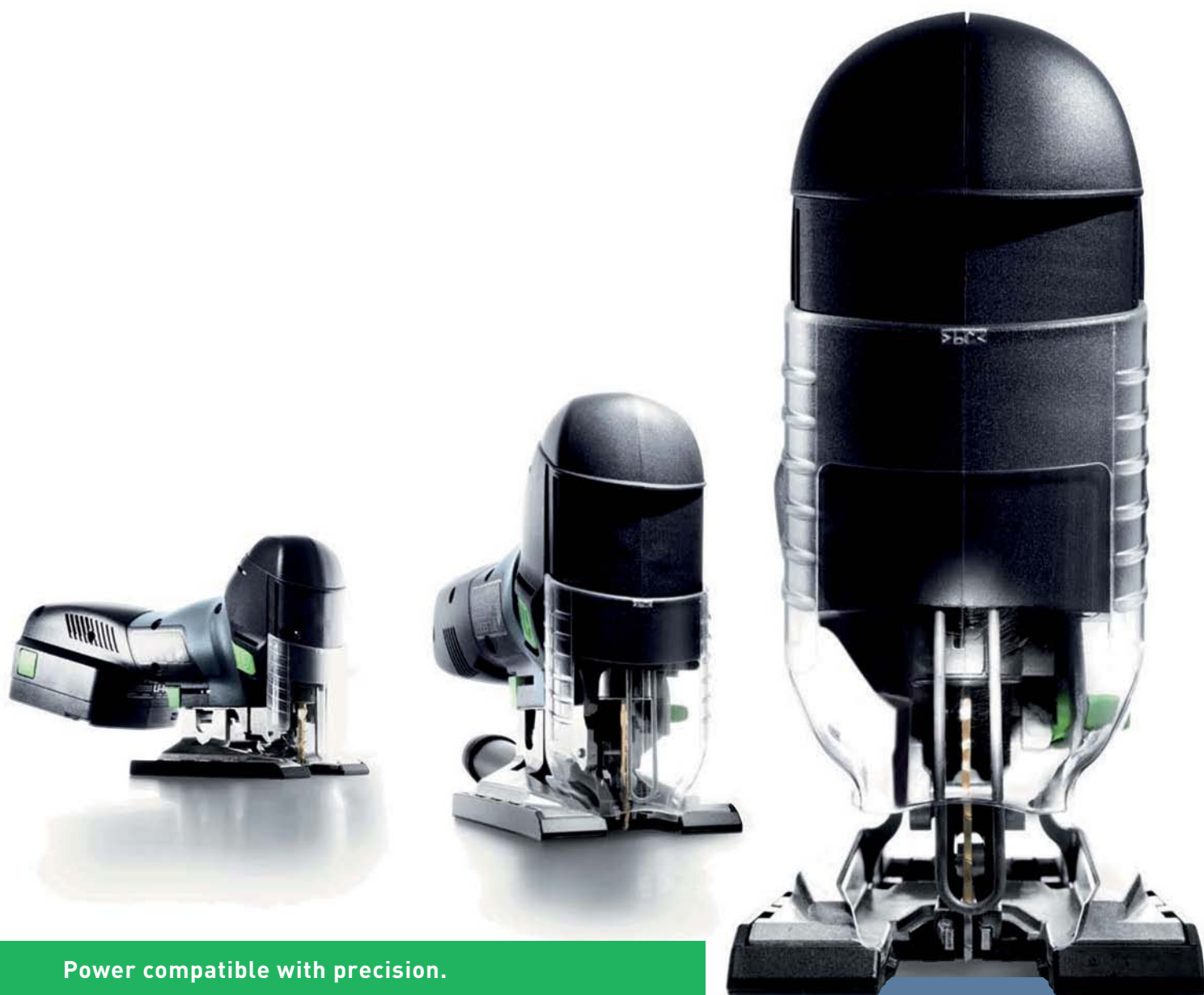
90° edge and leave you with a near perfect mitre. The pack also contains a flexible trammel bar for producing circles and various non-scratch covers for the standard base. These are all available as separate items, but if you're committed to the 'system' way of thinking then an extra £200 spent up front will save you around £50. That just happens to be around the same price as the Systainer they come in.

Cutting circles

Using the trammel bar to cut circles requires a baseplate change. The adjustable trammel resembles the blade of a tape rule. It is marked out in millimetres and will cut a hole from 40mm radius up to about 1,500mm. The key to success here is slow and steady, the larger the hole the slower the feed rate and yes, you guessed it, a sharp blade makes all the difference. It is possible to create some interesting ellipses if you're not paying attention. Just remember that a jigsaw is a roughing-out tool, so don't expect router-like precision and you won't be disappointed. **F&C**

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31.12.2012

Deconstructing the Classic dining chair joints

John Bullar examines the techniques used to produce angled joints for comfortable and sturdy dining chairs with splayed seats

In this article we will look at some of the techniques used in making dining chairs with splayed seats formed by angled joints. We will concentrate on the joints between the rails – or aprons – and the rear posts – or stiles. Beneath the seat, these posts form the back legs and they rise above it to a top – or crest – rail. This top rail can be widened to form a more supportive backrest and we will look at how this may be fitted with a tapered housing joint.

Drawn out designs

Some designer/makers draw up fully-detailed dimensioned plans before sawing the first piece of wood while others keep the plans in their heads, winging their way through much of the project. Many, however, take a middle path: drawing the main dimensions but improvising less critical points. Whatever the normal approach is, I would contend that when building a frame that doesn't use right angles, drawing is essential if all the components are to be the correct length and the joints are to close tightly without gaps.

Angular geometry

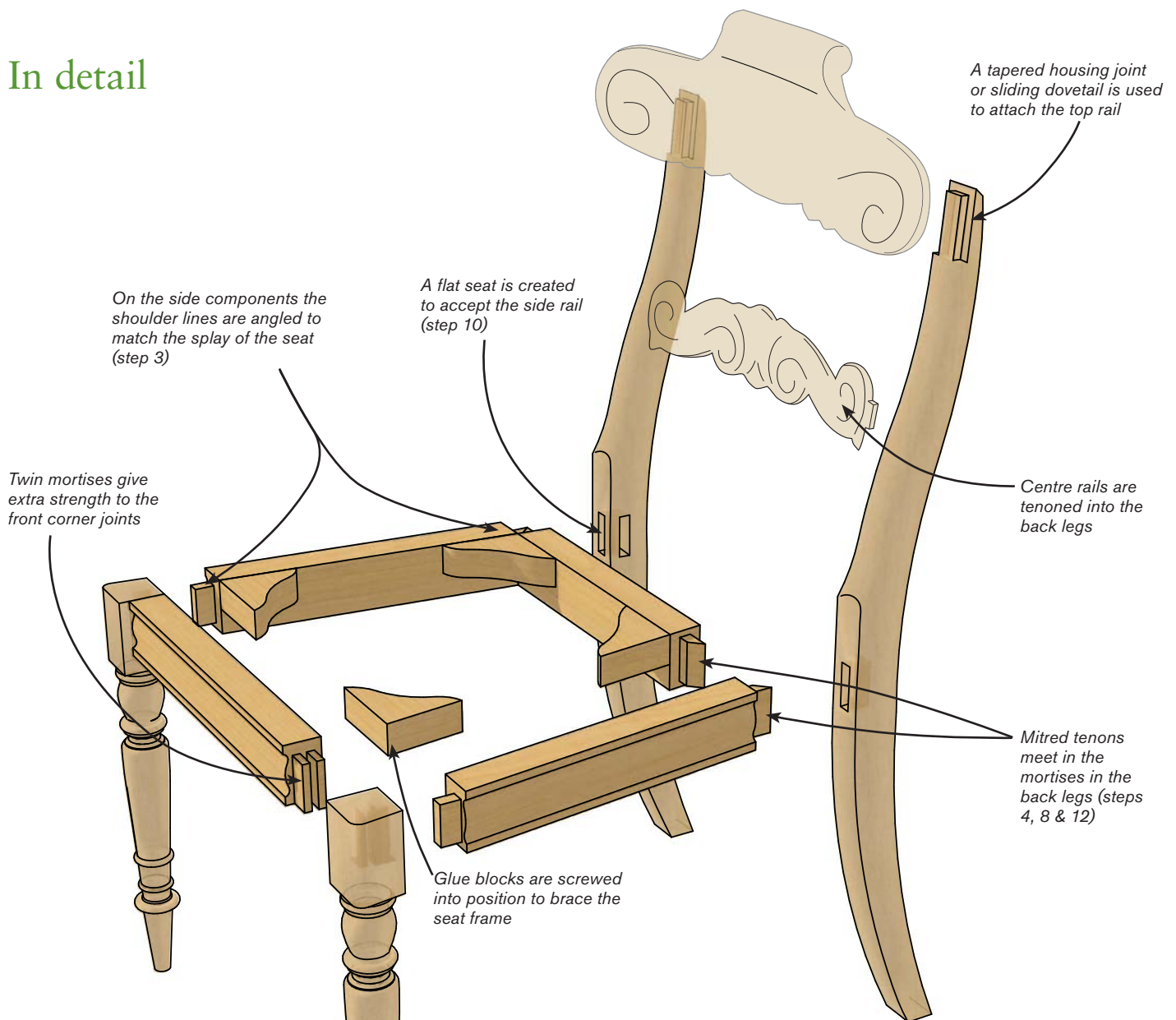
While the rails on this seat frame are not at right angles to one another, the mortise and tenon joints attaching the rails to the legs are. This is because the tenons on the ends of the side rails are purposely made out of line with the rails themselves.

In making the seat frame it is useful ►



MAIN PHOTOGRAPH BY GUY/DEREK JONES. ALL OTHER PHOTOGRAPHS BY JOHN BULLAR. ILLUSTRATIONS BY SIMON ROWNEY

In detail

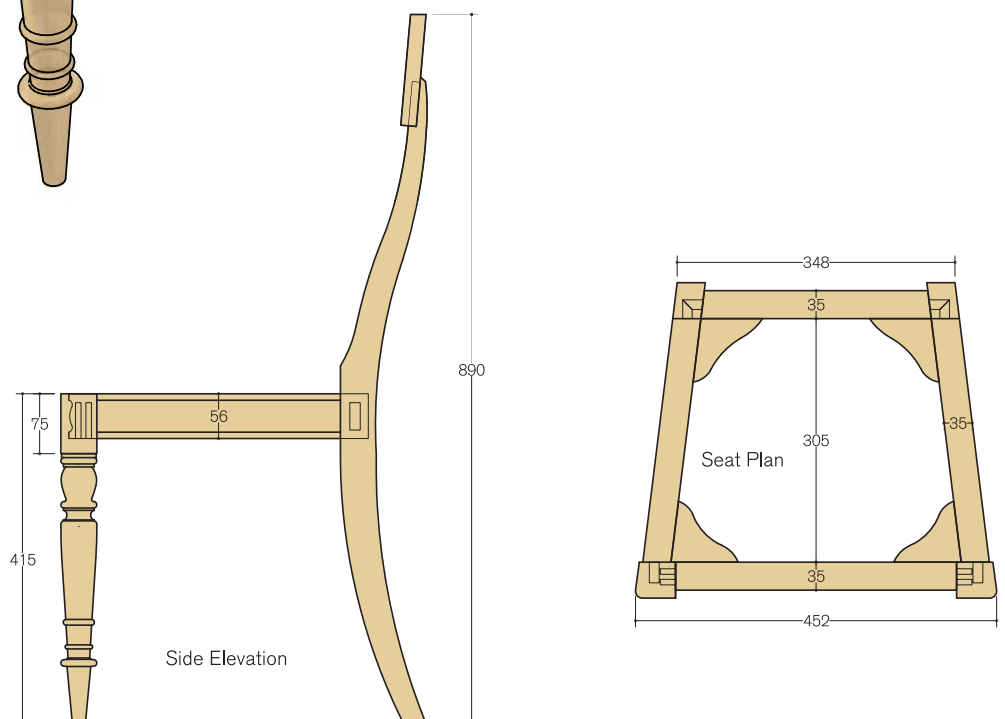


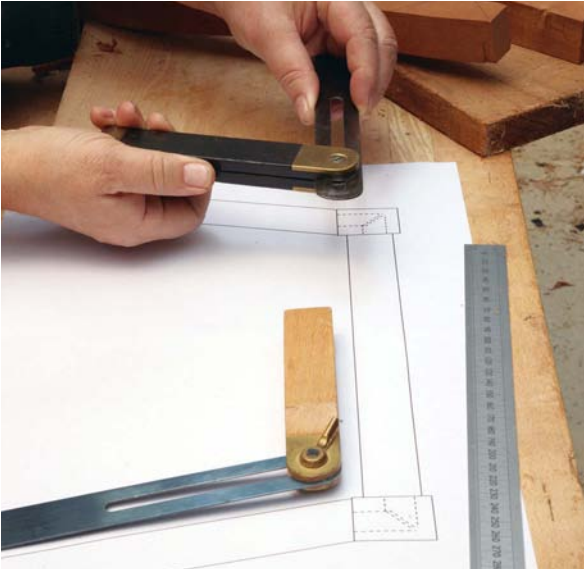
Increasing mortise depth



The depth of the rear post can be increased around the mortise to strengthen the joint

The depth of the rear mortise can be increased by shaping a thicker section in the post around the joint. Although this uses more wood because it prevents the components being as tightly nested when they are bandsawn, it can significantly strengthen the weakest point in a delicate chair. It also allows the inner edges of the joint to be sculpted into curves, if that is consistent with the design of the chair.





1 Whenever design and construction steer away from right-angle geometry, drawings are essential to work out angles and lengths



2 Two angles adding up to a right angle are known as complementary angles – shown here by two bevel gauges fitting together between the stock and blade of a try-square

- to recall a bit of geometry from school maths lessons – two angles adding up to a right angle are known as complementary angles, whereas two angles adding up to 180° or a straight line are known as supplementary angles.

Tenon shoulder lines on the chair's side rails are marked at an angle corresponding to the splay of the seat. The side cheeks of the tenon itself are marked at a complementary angle to the shoulder lines so the tenon will be perpendicular to its shoulders. The angle between the front and side rail is supplementary to the angle between the rear and side rail.

Long tenons

Even with normal, careful use, the joint between the side frame and the back legs of a chair is subject to considerable stress. If a heavy occupant decides to tilt a delicate chair backwards, this joint is likely to fail.

One way to strengthen the joint is by making the rails extra deep with wide tenons and thick legs, but this can make the chair look crude and clumsy. To ensure the joint on a finely-made chair is strong, the tenon needs to be as wide as possible and as long as possible within the constraints of the gauge of the components.

To preserve their length, where the ➤

Angled mortises or tenons

It might be tempting to chop an angled mortise and keep the straight tenon, especially if you are using a hollow chisel mortiser. However, an angled mortise chopped in a narrow leg will weaken it and may not allow sufficient room for the back rail mortiser. In any case, the tenon would still need to have slanting shoulders or else the leg would need to be chopped away around the joint to receive the shoulders, further weakening it. Angled tenons into straight mortises provide a better solution here.

Another alternative would be to use a router, together with a frame mortise and tenon jig. This will cut angled tenons with angled shoulders and matching straight mortises making strong joints. Even so, this method would still require some hand tool work to mitre the tenons or halve their ends together.



3 Tenon shoulder lines on the chair's side rails are marked at an angle corresponding to the splay of the seat



4 The side cheeks of the tenon itself are marked at the complementary angle to the shoulder lines



5 This bevel gauge has a 45° end, making it easy to mark the mitre angle on the tenon



6 The tenon cheeks are hand sawn following the angled lines in the conventional way



Instead of hand sawing angled tenons they can be machined with a router jig



7 The tenon shoulders are similarly hand sawn following the angled lines



8 A finished angled tenon on the side rail (top) butts up to a straight tenon on the back rail (left) in a mitre which will be hidden in the mortises



9 After cutting to shape on the bandsaw, curves of the back post or stile are faired smooth with a spokeshave

- two tenons meet at the back of the joint they can be either bevel ended as shown here or else halved together so the end of the side rail tenon fits tightly above the end of the back rail tenon. Halving joints between tenons offers the advantage that they will lock

together well.

Bevel ended joints have the advantage that each can be glued in place separately. This aids assembly of the framework in stages, which I prefer. Hidden inside the mortise, the mitre on the tenon on the side rail

will butt up against the mitre on the back rail with a small gap to ensure the shoulders seat firmly.

Fairing curves

The rear posts of most chairs are curved or angled to combine good stable seat support with well-positioned back support. The chairs illustrated here have curved legs and back supports. These are marked out from a template then cut on the bandsaw. The rough sawn outlines are then faired into smooth flowing edges using a spokeshave.

The point at which the side rail meets the curved back post needs to be flattened at an angle perpendicular to the side rails. This will receive the tenon shoulders and if the seat is to be raked back slightly, the angle of this flat section is adjusted accordingly.

Meeting in the joint

A pair of mortises is chopped into the rear post at right angles to one another forming an L-shaped socket. These must be positioned



10 The position of the rail joint on the curved post is marked out then planed flat



Two Sgabelli chairs from 1580

A history of the chair...

It was not until the 16th century that the chair became commonly used as a seat. Until then the chest, bench and stool were the ordinary seats of everyday life. The number of chairs surviving from an earlier date is limited; most are of ecclesiastical origin. Our knowledge of the chairs of antiquity is derived from sculpture and paintings.



An ancient Egyptian chair

In China chairs were in existence since at least the Early Dynasty period. They were covered with cloth or leather, made of carved wood and much lower than today's chairs; seats were sometimes only 250mm high. Ancient Egyptian chairs appear to have been of great richness and splendour. Fashioned of ebony and ivory, or

of carved and gilded wood and supported upon representations of the legs of beasts or the figures of captives. Generally speaking, the higher ranked an individual was, the taller and more sumptuous was the chair he sat on and the greater the honour. On state occasions the pharaoh sat on a throne, often with a little footstool in front of it.



11 A mortise socket is chopped into the post using a vertical chisel for a right angled joint



12 Light shines through the L-shaped joint where both mortises meet at the back



13 Both tenons insert straight into their sockets although the side rail (left) is at an angle to its tenoned end

far enough out to allow the tenon bevels to barely meet with a small gap at the back of the joint. This can be done with a mortising machine or with a hand chisel as shown here; either way it is important the socket is perpendicular to the flat surface on which the shoulders will bear.

One advantage in chopping a pair of mortises into adjacent sides of the leg is that you can clearly examine the base of the socket and clean it square by paring in from the other socket. You can also trial fit each bevelled tenon and check its position by looking through the socket side.

Corner blocks

Framed seats like this almost invariably use corner blocks as hidden bracing beneath the seat squab. The triangular shape of the block matches the obtuse angle of the splay of the seat between the side and back rails.

The block is sawn with grain running between the furthest corners so as to present the longest grain possible along the lines of stress, while the inside is shaped to reduce ➤



14 A corner block is shaped to match the angle of the splay of the seat



15 The top of the post is marked out with the depth of a sliding dovetail to attach the crest rail

In the 1880s chairs became more common in American households. There was usually a chair provided for each family member to sit down to dinner. By the 1830s, factory-manufactured 'fancy chairs' like those by Sears, Roebuck and Co. enabled families to purchase machined sets.

PHOTOGRAPH COURTESY OF COMMA AUCTIONS



A family-sized collection of American 19th-century 'fancy chairs'

The 20th century saw an increasing use of technology in chair construction with all-metal folding chairs, metal-legged chairs, the slumber chair, moulded plastic chairs and ergonomic chairs. The recliner became a popular form, in part due to radio and television. The modern movement of the 1960s produced new forms of

chairs: the butterfly chair – originally called the Hardoy chair – beanbags and the egg-shaped pod chair. Technological advances led to moulded plywood as well as chairs made of leather or polymers. Mechanical technology incorporated into the chair enabled adjustable chairs, especially in those for office use.



The butterfly, or Hardoy, chair

PHOTOGRAPH COURTESY OF TRECOWAY GALLERY

PROJECTS & TECHNIQUES

Deconstruct – dining chair joints



16 Sides of the sliding dovetail are formed with an angled saw cut in the same way as when sawing lapped dovetail sockets



17 The sides of the sliding dovetail are pared out with a bevel edged chisel



18 The shoulders of the sliding dovetail on the top edge of the post are cleaned with a fine chisel



19 The end of the sliding dovetail on the post is used as a template to mark out the housing that will receive it



20 A pair of cuts is made in the back of the crest rail with the saw tilted in each direction forming the sides of a housing



21 Waste is chiselled out from between the two saw cuts so the crest rail housing can receive the sliding dovetail



22 The tapered key slides into the matching socket to secure the crest rail

weight and accept the woodscrew holes. A small cutaway section prevents the block from catching on the corner of the leg itself, allowing it to be glued and screwed tightly against each rail.

A similar block sawn to a slightly acute angle – the supplementary angle to the rear block – is used to reinforce the joints around the front of the leg.

Post top joint

A crest rail joins the two posts together at the top of the chair. The crest rail itself may be carved or steam-bent into a concave shape in order to provide comfortable support for the back.

The top of each rear post is marked out with a sliding dovetail section which is sawn and chiselled out in much the same way as when sawing lapped dovetail sockets; however, the joint is much longer so the rail will be fully supported by the top of the post behind it.

Top rail socket

A housing slot is sawn and chiselled across the grain on the back of the crest rail to receive the sliding dovetail on the post top. The position and angle of the housing across the rail is marked against the two rear posts so that together with the rear seat rail they will form a frame. The end of the sliding dovetail is used as a template to mark out the cross section of the housing.

Conclusions

Angled joints and tapered housings need careful fitting to work well, but after carrying one or two prototype trials, these can be judged and any adjustments made so the technique becomes reliable. While there are many clever contemporary chair designs based on right-angled constructed frames to avoid the need for using angled joints, it is worth looking at the full range of options when thinking about possible future designs. *F&C*



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Restore your rasp

With a recent surge in the popularity of their French cousins, Geoffrey Laycock looks at replacing handles on a range of British-made rasps

When I wanted to quickly shape a template for routing a curve on a recent project I immediately reached for one of my old rasps. Over the last few months, much has been written about the amazing rasps available from France and I'm sure they are as good as everyone reports. Auriou rasps are available from Classic Hand Tools and Liogier rasps can be purchased direct from the maker.

I'm pleased to know that I have a wide collection of rasps, all British-made which are just as good; sadly I don't think you can buy them anymore. All of my rasps are hand-stitched – that is to say all the teeth have been individually formed by the file-cutter using a punch and hammer.

RIP rasps

Two things probably led to the extinction of the trade in the UK: cost obviously – as this is intensive, time-consuming work – and health – as the likelihood of contracting various serious repetitive strain disorders was second only to the problems of inhalation of lead dust from the stocks used to support the files whilst cutting. We even had the literally-named and now long-extinct 'File Cutting by Hand' regulations of 1903 to provide basic health protection. If you look at a hand-stitched rasp you can see that the teeth are not in straight lines; this is what makes them produce such a good finish, even though they look and feel so vicious! With practice you can achieve remarkably finished surfaces.



I have included an image which shows a variety of the most typical shapes of rasp, which are half-round, plus one round rasp. Two types of handle can be seen, the one on the largest rasp being the heavy-duty type and of course more expensive. If you really want to spend money on handles you can source hardwood Holtzapffel pattern ones from Workshop Heaven – www.workshopheaven.com – who also supply good quality rasps. I decided to refurbish all my rasps, as one of

my next projects is making a rocking horse and started by cleaning and treating all the handles. None had ever been protected in any way and after stripping they were treated to a coat of sanding sealer then two coats of Danish oil. Two of the smallest handles were previously treated to two coats of acrylic spray as most of my files are used for metalwork and being oil-proof can be useful; I had treated a batch and keep spares and I used two of those. For woodwork they just feel nicer with an oil finish.

Polishing rasps

My polisher is actually a Brooke Gryphon electric motor with adaptor shaft and has served for over 20 years so far happily spinning 200mm mops at 1,425rpm. It lives on the end of my engineer's bench by the door and is simply screwed down once slid into position, debris leaving the workshop naturally as the plywood is not normally

there. I prefer not to use a rear enclosure for this type of work as there is less for out-of-control workpieces to get caught in if they go flying. In this case, gloves are a good idea due to the very sharp teeth should the wheel catch and pull the rasp from the hands. For most other work involving either polishers or grinders, think carefully whether

gloves should be used and what type as when worn near anything rotating, they can increase risks rather than reduce them. When using any metal bristle wheel, eye protection is absolutely essential as metal wires can cause very serious eye injury; always use the bottom three-quarters of the wheel as seen, never the top half.



Polishing with my electric motor

Fitting new files and handles



Straightening the tang of a 4in Parkinson's rasp held in an engineer's vice

To fit new files or handles, many older books make it sound simple: heat the tang of the file – the pointed handle end – until red, then ram the file handle – with a suitable hole already drilled down the centre – onto it. I've tried this and wouldn't recommend it. For one thing, if you are not careful you might just lose some of the heat treatment of the teeth nearest the tang. So here is a simple but very effective method.

Straightening the tang

The rasp pictured with the tang held in an engineer's vice is at least 50-years-old; it's a 4in Parkinson's which were always better quality than Record and recommended if you can find one in good condition. What I am doing is straightening the tang; you can see it is not straight and is positioned so the bend is close to the jaws. Little effort is required to straighten it as the tang is not heat treated so left soft and flexible – think Japanese chisels: an extremely hard brittle edge with a soft backing.

After the rasp is straightened, you need to check it in the other plane. Be careful not to bend the tang excessively or repetitively as you will eventually have a crack and fracture. You can also see that this rasp looks slightly golden as I have cleaned it using a high quality brass bristle wheel on my polisher. This tends to leave a rather pleasing slight golden sheen on metal surfaces, but I am careful not to use it if there is a possible contamination problem with workpieces later. It works brilliantly at removing wood waste stuck in the rasp teeth.

Attaching the handle

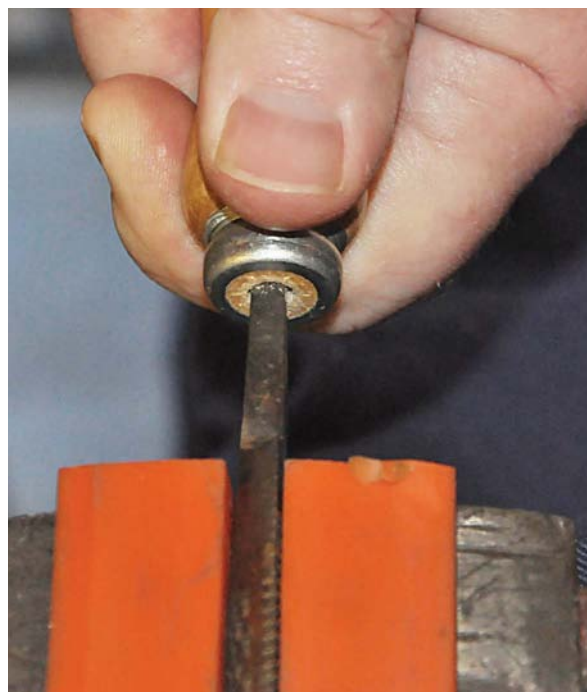
Although it looks as if I am holding the file handle in this picture, I am basically screwing it onto the tang. Note the soft jaws being used to prevent any damage to the rasp surface. This assumes the handle is pre-drilled, and you should find all new ones are. Without any modifications, the tang will act as a good scraper and produce a tapered hole of increasing depth. Keep withdrawing and tapping dust out. Stop when you are a couple of millimetres short of where you want the handle and using a mallet, piece of wood – or in my case the back of my workshop brush – hit the end of the handle. You do not need much force to firmly push the handle those extra millimetres with the edges of the tang cutting into the sides of the close-fitting tapered hole. Make sure you cannot pull the handle off and you are done. The alternative is to remove it from the vice and wearing a suitable glove, rap the handle end on the bench top.

Removing handles

Using this method you should end up with handles that are firmly attached to the file or rasp and straight! To remove, the easiest method – assuming you have an engineer's vice – is to open the jaws wider than the file thickness, but less than the diameter of the handle collar and, holding the file, move it down between the jaws sharply. The file should continue leaving the handle rolling around on the floor and then under the bench – as these things always do! *F&C*



The same technique can be used to correct the tang in the other plane



With the rasp held in soft jaws twist and push the handle onto the tang

Hitachi KC18DKL kit

With 4.0Ah batteries and a brushless motor option the new generation of Hitachi power tools are a force to be reckoned with, at least on paper



An all-metal Jacobs chuck is essential for a big unit like the DV18DSDL



Both units have reversible or detachable belt hooks



It's been a few years since I've had the need for an all-singing-all-dancing 18V combi. Apart for the odd day away from the workshop for an installation they're not something that I pick up that often, until Hitachi's KC 18DKL two-piece set arrived on my desk. The experience took me back 20 years or so to my first 18V DeWalt; chunky, heavy and built like a brick out-house. Don't get me wrong, these were all qualities I was looking for then and I'm not ashamed to say that's pretty much the case today. For one reason or another the DeWalts fell out of favour and by the time I was in the market for replacements, the new ones didn't seem to pack the punch of the originals and my on-site livery turned from bright yellow to lime green. It's remained that way ever since and if first impressions are anything to go by, so it will remain.

What's in the kit?

The KC18DKL kit comprises of a DV18DSDL cordless impact driver drill and a WH18DSAL impact driver with two 4.0Ah Li-ion batteries and

charger. Marrying these two together makes perfect sense as they are ideally suited to heavy-duty use and certainly nothing too delicate. The manual suggests that the 18V 4.0Ah batteries will deliver sufficient power to bore a 65mm-diameter hole through timber. They don't specify which timber, but it's likely to be softwood. As far as driving home screws, they claim 8 x 100mm – if a pilot hole is made before hand – is the maximum. I managed seven 64mm-diameter holes in 50mm-thick ash (*Fraxinus excelsior*) followed by 20 8 x 100mm screws in and out of softwood with pilots before the battery indicator recommended recharging. I felt there was plenty of juice left in the tank, but as overheating is a major factor in shortening the life of a battery it's as well to observe the advice; I had at least satisfied my curiosity and confirmed that the DV18DSDL is quite a beast.

In use

I didn't find a lot to complain about



The DV18DSDL has battery level indicator and LED light switch

with the impact driver either. The power ratio seems to favour the battery rather than the tool, given that it's quite possible to heat up the gearbox to near melting point long before the battery gives up the ghost. The same 8 x 100mm screws were wound in and out 30 times in quick succession before common sense prevailed. To be fair, this didn't mimic real use, but with a recharge time between 45 minutes and an hour, a power failure is unlikely to be a serious problem. A third battery might be a safe bet if you're contemplating heavy use.

Brushless motors

The Hitachi website lists both of these machines as being available with or without a brushless motor. As brushless technology is fast becoming standard across all premium brands of power tool. I would expect this to be temporary as it suggests a period of transition from one power plant to another.

Brushless motors rely on electronics to reverse the polarity

of the current supplied to the electromagnets within the motor, negating the need for brushes. This eliminates the sparking often visible through vents in the machine casing and brings about an overall reduction in electromagnetic interference. With fewer moving



F&C verdict

Given that we don't generally run our tools at their full capacity all of the time, it's rare to find fault with products from a reputable manufacturer. There are a lot of features on the new-generation Hitachis such as circuitry protection electronics, but you can't beat good build quality and an all-metal Jacobs chuck. With impact drivers taking some of the burden off drill drivers we could expect these units to last longer, but it's probably too early to say.

Pros:

*Plenty of power
Great chuck
Substantial casing*

Cons:

None

The numbers:

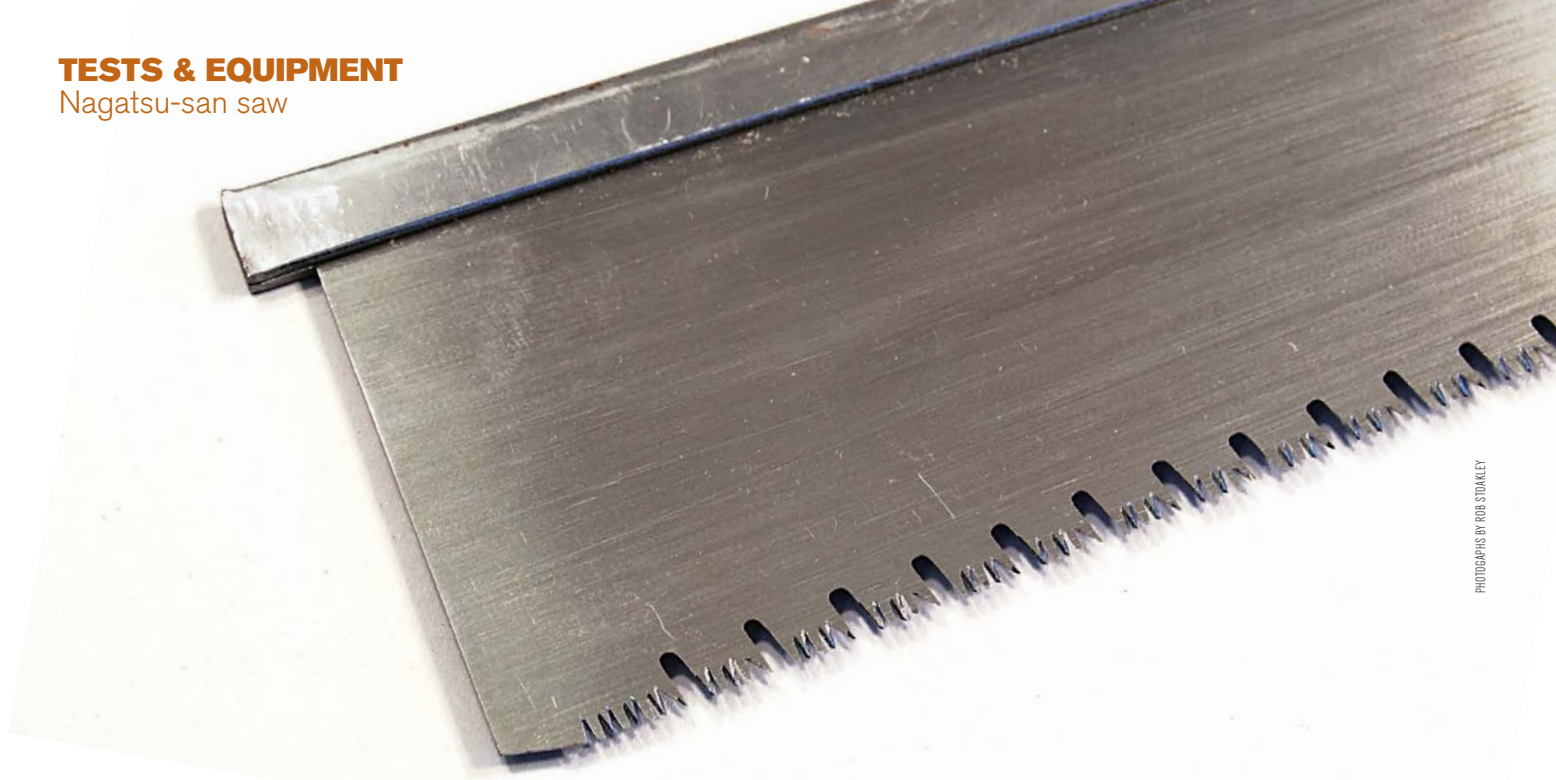
*DV18DSDL Drill Driver
Max Torque: 92Nm
Drilling capacity: brick – 16mm;
wood – 65mm; metal – 13mm
Price: £346.80*

*WH18DSAL impact driver
Tightening torque: 145 N-m
Fixing capacity: M6-M14
Price: £290.38*

From: www.hitachi-powertools.co.uk

parts, the motor is quieter and more compact allowing for smaller casings. By virtue of their design they are easier to keep cool making them more efficient and capable of delivering more torque than an equivalent brushed motor. As far as cordless power tools are concerned, this represents a significant advantage when the power supply is contained onboard. These developments translate into very subtle improvements, but improvements they are and we should be pleased to have them.

Just as important, but equally subtle, is the slightly misleading statistic given to battery performance in terms of Amp hours (Ah). This information can be accurate, but the method of calculating it is not universal, so comparisons are difficult when battery coupling designs are unique to each manufacturer. Like predicted run times, the figures are somewhat irrelevant when the outcome depends on the operator; I wouldn't sweat too much over the numbers. *F&C*



PHOTOGRAPHS BY ROB STOAKLEY

Nagatsu-san saw

Rob Stoakley looks at this Japanese saw which makes for truly effortless sawing

Sawing wood is one of those fundamental things woodworkers have to do occasionally and to do so, most of the time, I use Western style push saws, which work well enough. For a number of years now, however, I've been a convert to Japanese saws, simply because of the effortless way they can be pulled through timber. There is now a plethora of Japanese saws commercially available from various outlets in the UK and, good though they are, they all have one thing in common: they are made in a nameless factory somewhere on a featureless production line.

I've used a number of them with varying degrees of success, but it wasn't until I tried this handmade, crosscut dozuki produced by master sawyer Shoichi Nagatsu-san, that the mud of previous experiences cleared to reveal the sparkling enlightenment beyond. The expression 'hot knife through butter' only goes part of the way in attempting to describe how this saw cuts.

In use

On the face of it, the saw looks like any other, but close examination reveals the countless tiny, pinprick hammer blows from the master where the steel has been tuned and, together with the unique tooth configuration developed by Nagatsu-san, it makes for truly effortless sawing

– even on home-grown, temperate hardwoods. There is little or no conventional 'set' on the teeth as the deep gullets and saw plate – which has been scraped in the centre to thin it – clear any sawdust to produce a kerf of just 0.4mm.

Naturally enough, Nagatsu-san has a website – www.mitsurouwax.com – in Japanese which, for those in the West, may as well be written in Klingon, though the wonders of the Google

translate function go some way to enable the reader to understand his philosophy, which in a nutshell, can be interpreted as 'look at the evidence on the tool and work from that'.

Resharpener

There's one very slight, ever-so-tiny fly in the ointment that ought to be mentioned. Those

eagle-eyed readers with 20/20 vision will have noticed that there's no induction hardening line along the teeth as this saw is meant to be resharpened, which could pose somewhat of a small problem. Easy enough on a Western saw, but one with this tooth complexity requires a very different approach. One answer of course is to send it back to Japan – the other is to do it yourself, which opens another very large can of worms. But help is at hand as it's anticipated that Nagatsu-san will be coming to the UK in the summer of 2013, where a week-long course in saw sharpening should be running in a workshop near Salisbury. *F&C*



The handmade crosscut dozuki produced by Nagatsu-san

F&C verdict

Amongst all the dozens of saws now available, this one stands head and shoulders above its commercial competitors, simply for no other reason than the truly effortless way it cuts through timber. The unwary should take note of one or two caveats before rushing to purchase it.

Pros

*Effortless sawing on softwood and temperate hardwood, excluding hard exotics
Sawdust cleared efficiently through the large gullets
Kerf of 0.4mm
Very little, if any, 'set' on the teeth
The saw can be resharpened*

Cons

*Delicate saw plate, only for experienced users of these types of saws
Specialist knowledge required to re-sharpen the teeth
Not available through commercial outlets*

The numbers

Price: £163 (plus P&P)

*Contact: Michael Huntley
Web: www.hsow.co.uk*

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General gel finishes

Michael Huntley explains how to use a gel finish to restore a 20th-century cedar wood chest



PHOTOGRAPHS BY MICHAEL HUNTLEY

An American early 20th-century cedar wood linen chest recently came into my workshop to be refinished. Most of my work is on pre-20th-century furniture, for which modern gel finishes are not appropriate. However, in this case, the client wanted the chest to match another item which had a very red modern finish on it and in my opinion, totally stripping and refinishing the linen chest using a modern American gel finish would not devalue the item. Sometimes one has to make a judgement based on experience about whether removing an original finish is the right thing to do. In this case I knew from the context that if I didn't do it, somebody else would, and they might not be as sensitive to its history as I would be. So, after fully recording the condition, decoration and any labels, I went ahead.

Contact General Finishes
Web: www.generalfinishes.com

Restoring a cedar chest

General gel finishes are water-based. They are not like solvent finishes so you must learn the correct techniques to use them by reading about their specifications on their very informative website detailed at the beginning of this article. Make sure you read the instructions and follow them. Temperature is important. The colour range is not large and the names are odd, but the colours available do suit most work.

For new work, or where an entire piece is to be coloured to the same colour by a non-professional, they are the easiest finish I have found, but for old work or professional use this system does not offer sufficient flexibility. I prefer, as many readers will know, to use a shellac topcoat.



Here is the chest with the base stripped but the lid left how I received it with ring damage visible

Method

The piece had all the metalwork removed and was stripped in the usual way. This revealed some shrinkage damage due to the panel jointing methods used. I injected animal glue, which is reversible, thereby making it easier for the next restorer. While this was curing I worked on the base.

The client had chosen the colour, not my favourite I must

admit, but the General Finishes colour swatches had made colour matching in the client's house under their particular lighting conditions, very easy. I could have deepened the colour by using a dye stain as well as a gel stain, but I wanted to keep some of the figure of the cedar. There are occasions when one has to direct the client away from what they think is best!



Stripping the degraded varnish off the chest

Application



Applying the stain with a rag folded into a brush shape



Here I am touching in the dotted decoration with emulsion paint

Use a rag as if it were a brush; by this I mean fold the rag in a way that you can control whether you are applying neat, thick gel or a thin coat of dissipated gel that is widely spread amongst the weave of the fabric. Practise first on a scrap.

Rub on thickly, but then swiftly spread it out and rub out any thick smudges. Finally lightly rub along the grain, stand back and check the coating against a raking light for smooth, even coating. Work on one discrete area at a time, then destroy the rag! I burn them; I would rather burn rags than take a risk and have them burning my workshop down!

Bear in mind that you cannot thicken up the coverage as you can with shellac. This is why you must practise first. However, it is worth it because once learnt this is a very



The finished chest

easy finishing method and is more durable than most.

Once everything was properly dry and cured I touched in the dotted decoration with emulsion paint and sealed with Mylands wax. *F&C*

A workshop with a difference

F&C discovers what really goes on behind the green door at the All England Club

I thought about opening this feature with the line 'And now for something completely different', but reconsidered after giving it some thought and deciding that it wasn't strictly true. Throughout the year I get to see my fair share of workshops, and by and large they're much the same when you consider their purpose.

All that changed when I discovered, in the early part of June 2012, that The All England Lawn Tennis Club aka Wimbledon had its own fully functioning, well-equipped workshop. Intrigued, I made some enquiries and subject to timing they were prepared to open the doors and allow F&C in to see what it was used for.

When it comes to major tennis tournaments, there's one that stands head and shoulders above any other. It's favoured by the players, revered by the world's media and worshipped by the fans, so it came as no surprise a few weeks before the most prestigious tennis tournament of the year was due to start, that now wouldn't be a convenient time to drop by. There were plenty of new and impressive sports venues created especially for the 2012 Olympics, of which some will undoubtedly live on as part of the Games' legacy for decades to come.

But as far as tennis was concerned, there could only be one possible venue: The spiritual home of lawn tennis that is the All England Club.

Complete control

Considering there are programmes on TV about hotels and budget airlines that delight in sharing their extreme incompetence with the rest of the world, I can't believe there hasn't been a serious documentary about this institution. The story would be a master class in attention to detail and preparation for the unexpected. I'm sure that behind the scenes they have their fair share of drama, but in opting for the All England Club, the Olympic committee couldn't have been in safer hands. The staff aren't conditioned to respond to the whims of houseguests with deluded notions of creature comforts. Neither are they slaves to the company handbook. They are, quite simply, competent to the point of obsessive.

Wimbledon's woodwork shop

Each year the tournament takes place under the spotlight of the world's media and, as such, no stone is left unturned as plans are drawn out at the end of the year to make the following



Over the years the complex has quite literally grown up



The Felder K7F is the workhorse of the Wimbledon Workshop

PHOTOGRAPHS BY GUY/ANTHONY EALEY, UNLESS OTHERWISE STATED



Further examples of seating created for spectators underneath the raised section of Court Number 1. This is a popular hiding place when it rains; it was a crowded space before the seating was installed, further improving spectator comfort

year's tournament run even smoother than the last. From the top down the needs of all those who participate in the event are carefully considered to see if there is room for improvement to enhance the experience. It's a serious game being the best in the world and that is how Wimbledon is regarded, not only by its spectators but by competitors and media alike. I could fill you with statistics about the number of bums on seats, strawberries and cream and that all-important first serve, but that's not why we're here. No, our focus is on the woodworking shop and to be more specific, the man behind it, Archie Taylor.

Archie's handiworks

If you've been fortunate enough to attend the tournament in the last 20 years then the likelihood is that you

will have either eaten off, sat on or leant against some of his handiwork. Archie has been the chief carpenter on site for 20 years, two decades that have seen improvements on a near biblical scale to a site that was first used in 1922. During those 20 years huge changes have taken place such as the new Number 1, 2 and 3 courts, the roof and added facilities in Centre Court and much improved spectator provisions. Archie's contribution to this has been substantial, including the making of 180 picnic tables for use on the 'Hill', over 300 hardwood benches and recently around a hundred storage containers for the 15,000 seat covers for the recently refurbished Centre Court. Not seen by many, at the end of the Championships all the plush seats have individual covers fitted



Archie Taylor is Wimbledon's chief carpenter in residence

Wet weather roof

To the uninitiated, the wet weather roof resembles a tarpaulin to keep the rain off and in many respects that's its purpose. Behind the scenes though there's plenty to think about before it can be deployed. Given that Centre Court seats 15,000 spectators, simply slamming a roof over the space when it starts to rain is rather

impractical. The target time to re-start play if the roof is deployed during rain is 40 minutes, eight to close and about 30 minutes to balance the internal atmosphere through a vast air-management system. It is not closed for short duration showers but for prolonged bad weather or failing light when closing may only take 20 minutes.



The Centre Court roof is left open whenever possible during play and off-season. Here the closed roof was needed for the Djokovic vs. Troicki 4th-round match, 2012

PHOTOGRAPH BY NEIL TINGLE



A selection of the 300 plus hardwood benches that visitors rest on and planters, all made by Archie Taylor

- for protection until the following year and they all need secure storage themselves when not in use.

Preparation

Each year around 3,000 sheets of ply are used to section off individual areas within the grounds before the tournament, as well as the routine maintenance necessary in preparation for the mass invasion of almost half a million visitors. During the year a typical day could find Archie running out a line of new cherry (*Prunus spp.*) lockers for the players' changing room or solid maple (*Acer campestre*) ones for the members facilities. His expertise is frequently called upon to advise on the fitting out of some of the more obscure spaces beneath the stadium to maximise every last square inch of usable space.

Archie learnt his trade working with a family of carpenters in general carpentry and construction before taking up residence at the club. He's currently training another member of staff, Andy Hughes to take over the role when he decides to hang up his apron in a few years' time.

The workshop also takes on a few projects from outside the grounds in support of the local community. On the day we visited, Archie was putting the finishing touches to a set of 20 A-frame easels designed to display printed artwork by local children made in the Club Education Department.

Inside the workshop

As befits a commercial enterprise Archie has some familiar machines at his disposal. With a preference for Felder equipment the workshop has a dimension saw, belt sander, spindle moulder, bandsaw, planer/thicknesser and Sedgwick tenoner.

The larger kit is supplemented by some smaller items like a Metabo compound mitre saw and the usual assortment of hand and power tools. His most recent additions to an already comprehensive armoury are the Festool Domino XL DF700 and DF500. As furniture makers already know, the Domino DF500 has transformed workshops all over the world, simplifying construction methods and the XL DF700, a larger version aimed at the joinery market, is set to do the same for this type of work in smaller workshops.

Just when I think we've seen all there is to see, Archie leads us into the store cupboard and unveils his secret weapon: a Piranha 550 wallsaw. From chatting to some of the staff as we made our way around the club, the overriding feeling is that Archie and the entire team take everything in their stride. There's absolutely no room for complacency, so the air of quiet confidence comes from realising that, however good you are, there's always plenty of room for improvement. *F&C*



Felder is the choice of kit for the Wimbledon workshop



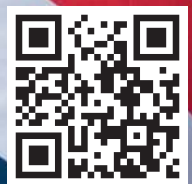
Each year a number of the picnic benches need repairs or replacing. If you have eaten a sandwich at one of them Archie probably made it!



The Piranha 550 wallsaw is a welcome recent acquisition

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Sycamore chest



PHOTOGRAPHS BY JIM HOOKER

Jim Hooker tackles hidden mitred dovetails to produce this extravagant chest from European sycamore

I had laid a pale bamboo floor and made sycamore (*Acer pseudoplatanus*) bath panels for our sleek new bathroom. It was looking good, but the laundry basket was out of character and looking tired and a stool would be handy.

I wanted something contemporary with strong horizontal lines rather than the traditional frame and panel chest. Continuous string lines in a contrasting wood are very effective and could echo a shadow line around the hinged lid. It is normal for laundry bins to have some form of ventilation and a good way of achieving this seemed to be to provide a nicely

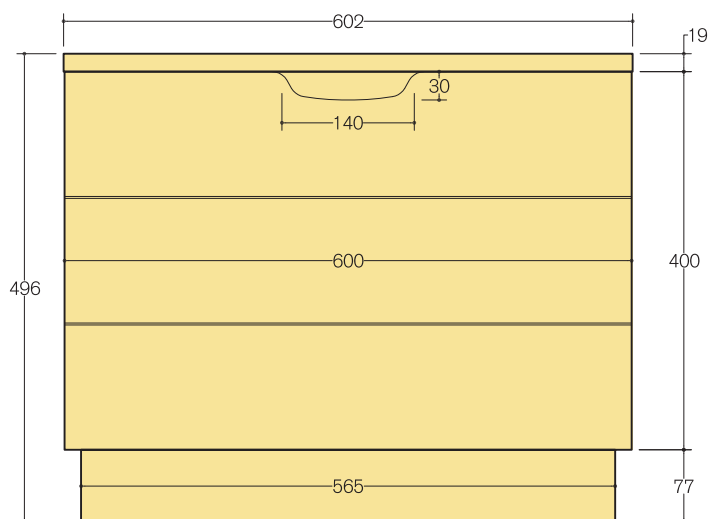
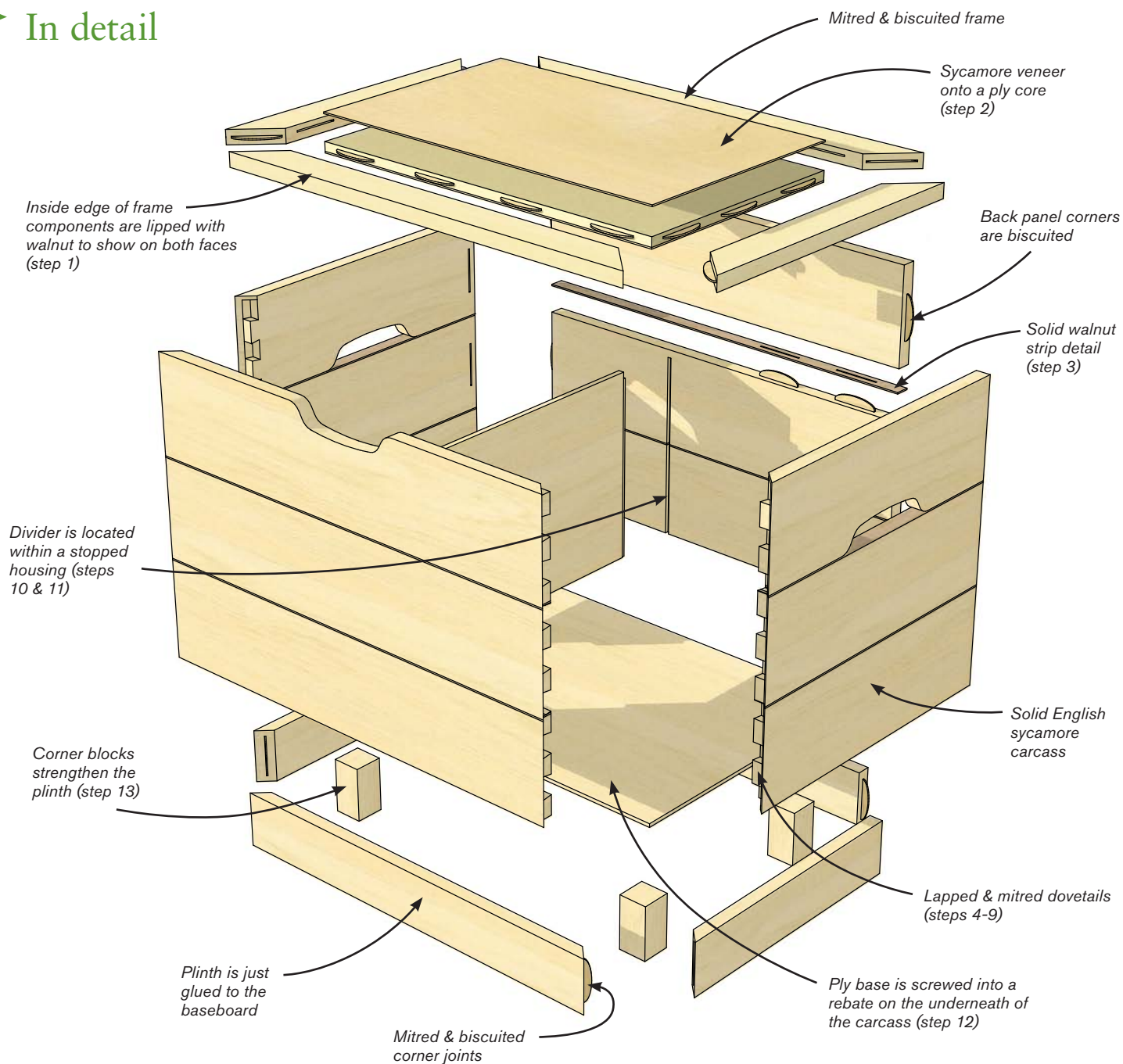
shaped, but simple opening for lifting the lid. This could be repeated in inverted form on the sides to aid moving the chest around in its role as a stool and would make the design more cohesive. A recessed plinth would match the bath panels and add to the horizontal emphasis. It would also allow the chest to be pushed back over the skirting board without impeding opening if, like ours, your floor is at more than 90° to the wall!

This may be a bit over the top for a laundry bin, but this chest would serve equally well as a toy or general storage chest.

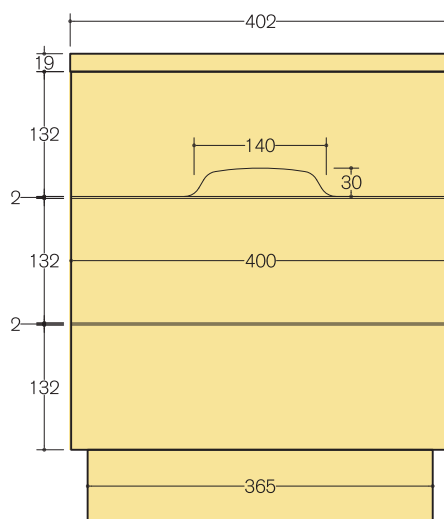
Design – the lid

The hinged lid nicely demonstrates the colour variation of sycamore. The rippled frame is the very pale colour usually considered the most desirable. The centre panel is at the other end of the sycamore colour range, but I chose it for the swirling grain and to give a pleasing contrast in tone. This was the end of a board from another project and there was just enough to make book-matched, bandsawn veneers for both sides of the 12mm birch ply core. You may not like the

► In detail



Front Elevation



Side Elevation

- pronounced asymmetry of the grain pattern, but I have recently been experimenting with more asymmetry in my designs and am very comfortable with it. Veneers from the plainer end of the board were used on the underside of the panel. The frame wood was edged on one side with American black walnut (*Juglans nigra*) so that the stringing appears on both faces of the lid.

The frame

The mitred frame of the box is simply biscuited at the corners and to the centre panel so that frame and panel are flush on their upper faces. It is much better to leave making the lid until the main carcass of the chest is made and its precise measurements are known. That way the frame can also be sized very accurately – the last thing you want is to be trimming the frame to exact size, only to find that the mitre joints no longer end at the corners.

Making the panels

The lower faces of the side handholds have a continuous walnut surface so the stringing must go all the way through the panel. Although this only applies to the upper edge of the middle end panel boards, it's simpler to adopt the same technique throughout. Glue 3mm strips of American black walnut to both edges of the middle board and trim them flush.

Before the boards for the side panels are biscuited and glued together, the hand holds must be formed. These are roughed out on the bandsaw then trimmed on the router table using a template and a bearing guided pattern cutter. Their inner edges are then rounded over to provide a comfortable grip. Rounding the rear edge of the lid opening is not strictly necessary, but it provides an attractive detail.



1 Side hand holds make the chest easy to move. Gas strut supports are expensive but support the lid in any position

Joining the panels

Now we get to the really challenging bit – jointing the panels together. The choice of back-to-side joints was easy; the chest would stand against a wall, so the back could have biscuited butt joints with the sides overlapping the back. Although an end grain to long grain joint is weak, the biscuits provide ample strength.

I pondered over the front joints for a while. Some form of mitre joint was essential to maintain the grain continuity I was after. In use, the chest

would get dragged around quite a lot, both for floor cleaning and when used as a stool. I could have used biscuited mitres but the last thing I wanted was those long mitres opening up at some future date. In the end I bit the bullet and went for secret mitred dovetails; they would give a very strong mechanical joint with the visual effect I was after. Several people have asked why take on all that work for joints which would never be seen? There are two answers. Firstly, nothing else would be as strong and ►



2 The lid shows the colour variation of sycamore and the stunning lustre it can have. The finish needs to be carefully chosen to maintain the pale colour and avoid dulling the lustre



3 All the way through stringing gives a walnut face to the side handholds. The rounded inner profile gives a comfortable grip



4 Long secret mitred dovetails are a demanding technique. Creation of the vulnerable mitre is left as late as possible to limit the risk of damage



5 Time spent setting up the router depth and backstop is rewarded with waste removed accurately to the line and very little left to chop out by hand

➤ secondly, I had never used this joint before and fancied the challenge. And, with joints 400mm wide, it was quite a challenge, but at least I could reduce the drudgery by routing out most of the waste. An advantage of being concealed is that the tail and pin configuration doesn't need to look pretty, they can be equally spaced and sized to suit the removal of waste with a router.

The big Festool router's brilliant depth stop allows 0.1mm adjustments, making it easy to home in onto the precise depth setting to remove the bulk of the waste exactly down to the line. A carefully placed clamped-on backstop gave the same accuracy of cut at the back of the sockets. This painstaking setting up saved a huge amount of chopping out time. Coming back to the big Festool, I think big routers like these are underrated for freehand work. Provided they are properly supported, their greater mass facilitates very fine and accurate control and the 12mm shank cutters they demand give a much smoother cut than the 6mm shanks necessary for most small routers.

I cut the pins first, but it really doesn't matter and, once the bulk

of the waste has been removed, relatively little chopping and paring finishes off the sockets before marking the tails from the pins. Being double-lapped, this is a bit more tricky than a normal single-lapped joint but not too difficult with care and a fine scalpel.

Cutting the rebates

Before cutting the dovetails and pins, the rebates beyond which they are formed are cut on the router table. The projecting section left by this rebate is used to form the corner mitre. Actually forming the mitre was a very satisfying job with a clamped on 45° guide block for my LN skew block plane – since replaced by the far superior Veritas equivalent. Once made, the long mitred edges are extremely vulnerable to damage until the joint is assembled, but lengths of split foam pipe insulation stay in place and offer excellent protection from casual knocks and dings.

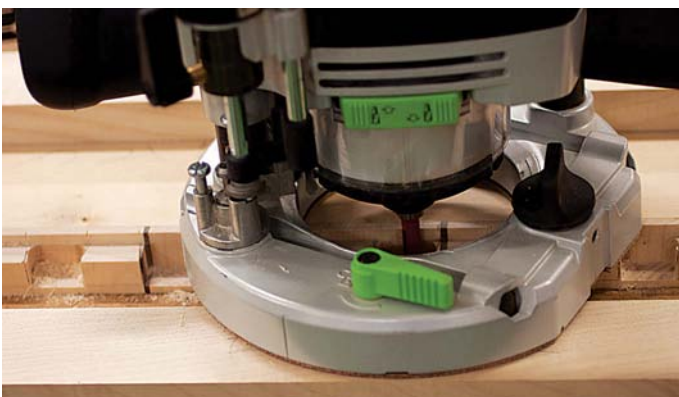
Inside

The solid sycamore divider was included to allow separation of dark and light laundry, but could be useful in other uses. It has a tongue on each

side which slides into routed 5mm stopped grooves in the front and back panels. Creating the tongues using the Veritas skew block plane with its built-in scribing nickers was another enjoyable task. After cutting, the top 5mm of each tongue is trimmed away so that the divider can overlap, and therefore conceal, the tops of the grooves.

The 6mm birch ply floor of the chest, which sits above the plinth, is screwed – but not glued – so that the divider can be removed, if desired, into a routed rebate in the bottom edge of the body of the chest.

The plinth is mitred and biscuited at the front and butt jointed at the back as for the main carcass. All the corner joints are strengthened with substantial corner blocks which are screwed and glued in place. Fixing the plinth to the base posed a dilemma; I dislike exposed screw heads in places where they will be seen, so wanted to avoid screwing through the floor of the chest into the plinth. For this reason, the floor is simply glued to the top of the plinth. Whether this will stand up in the long term, time will tell, but it should be OK given the substantial glue area, and I can



6 Smooth movement and cut make the big Festool perfect for this job if properly supported. Note the clamped-on backstop batten



7 The end panel set up for marking the tails from the pins. Clamped-on stops ensure that the string lines are perfectly aligned



8 Scribing the tails is a little awkward but a sharp, fine scalpel helps



9 An accurately machined 45° block attached with double sided tape and clamped in the vice with the work makes forming the mitre a pleasurable job

always resort to screws if necessary. Felt pads on the corner blocks allow the chest to be moved around on a wooden floor without damaging it.

Lid fittings

Brass fittings would definitely not be in keeping with the modern look of this chest, so I set about searching for some good quality 19 x 30mm stainless steel butt hinges, but to no avail. In the end, I settled for nickel-plated brass items from Rutlands. These are reasonably well finished, but I would have liked to give them that little extra work to produce a really smooth satin finish but, of course, this is something you just can't do with a plated hinge. The lid itself is made a little oversize to allow final fitting. In keeping with the minimalist design I wanted the lid to appear the same size as the chest. In fact, it overhangs by approximately 1mm at the sides and front. This disguises tiny variations in fit and also gives a small shadow line to help

emphasise the strong horizontal lines.

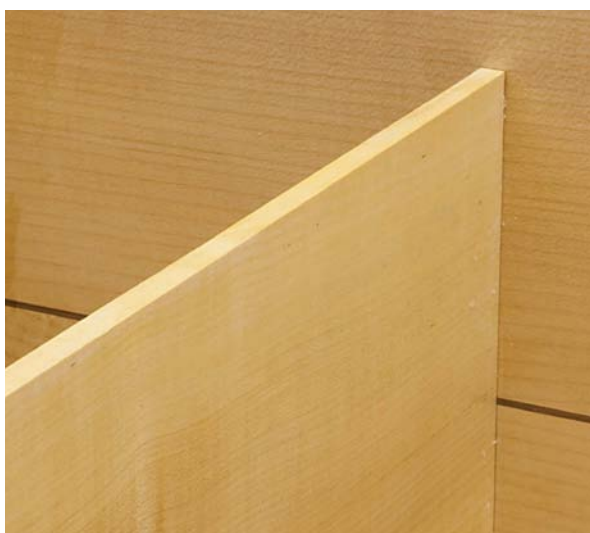
I had more luck with the lid stays. I wanted to avoid the possibility of the lid crashing down while someone was using two hands to remove laundry, but also maintain the sleek contemporary look. Given those requirements, the choice seemed to be between the rather clunky and cheap looking stays used on kitchen units and stainless steel gas struts, so I chose the latter. I bought these from Struts Direct and although they are expensive, the struts themselves are very nicely finished and very effective at supporting the lid at any point between fully open and almost closed, while looking suitably sleek. The fixing brackets were, however, another matter. These are plain stainless steel stampings and needed a fair amount of work with files and emery paper to bring them up to the same standard of finish as the struts. The lid bracket is mortised into the frame to reduce its obtrusiveness.

If you supply a sketch of what you

are making, Struts Direct will produce a dimensioned drawing showing the precise fixing positions for the brackets at the top and bottom of the struts. However, I found that the drawing did not take proper account of the extra 'throw' provided by the types of bracket I had ordered. It is safer to measure carefully and make your own drawing, using the one supplied as a starting point, if you want to avoid the possibility of finding yourself plugging screw holes which have proved to be in the wrong place.

Assembly and finishing

All the inner surfaces of the chest were masked off where necessary and finished before assembly. Although this involves a little more work, it is much easier than trying to finish the inside of the chest later. The fact that the chest is comprised of three separate assemblies – lid, carcass and plinth – means that gluing up is straightforward and stress free aided by the long open time of urea formaldehyde glue. ➤



10 The solid sycamore divider sits in stopped grooves in the front and back panels



11 Forming the tongue on the divider with the Veritas skew block plane. An extended wooden fence is screwed to the standard fence to give a longer bearing length

PROJECTS & TECHNIQUES

Sycamore chest



12 The floor is screwed into a rebate in the bottom of the carcass



13 Blocks made from offcuts of kitchen worktop strengthen the plinth corner joints and provide a place for the felt pads on which the chest stands

► Beautiful though the very pale creamy colour of sycamore is, like all other light coloured woods, it will yellow and darken over time and quite quickly under bright light conditions. This process can be slowed substantially if the wood is treated with a UV block before finishing. I have been using a factor 30, clear, non-oily sunscreen for this purpose for some years to good effect. A word of warning though, I have only tried this on sycamore so it may not work on other pale woods and not all finishes are compatible with it, so experiment first. I use sprayed-on satin pre-catalysed melamine lacquer whose adhesion seems to be unaffected by the UV block. It is suitable for use in a humid environment like a bathroom and also has the advantage of adding minimal colour to the sycamore, which can be a problem with oil-based finishes.

An often recommended alternative

finish is a water-based lacquer and these do add even less colour. However, in my experience, the lack of clarity of these finishes in the tin translates into some obscuring of lustre and a rather cold look. The adhesion of these finishes also seems to be affected by UV block and, although they are often said to have their own UV blocking properties, my experiments suggest that any blocking effect is, at best, minimal. The truth is that there is no perfect finish solution, so experiment on pieces of scrap to find out what you like best. *F&C*

Sycamore

I have long regarded European sycamore (Acer pseudoplatanus), my choice of timber for this project, as a much-underrated wood. It's a common tree in the UK, although not a native, and it grows fast for a hardwood and seeds prolifically. The colour varies from a very pale, creamy white to a warm tan, it's fine-grained and nice to work. Sycamore's botanical name reveals its relation to North American hard maple (Acer saccharum) rather than the true sycamore (Platanus spp).

Sycamore is somewhat lighter in weight than hard maple and correspondingly, a bit softer, but where it really scores is its cellular reflectivity – sometimes called chatoyancy – which is quite a bit greater than hard maple, resulting in a stunning lustre. This is especially evident where the grain is rippled or complex.

I have always struggled to understand why imported North American hard maple is more widely used here than locally grown sycamore, which I think is much nicer. It could be because sycamore requires very particular drying conditions. Get them wrong and it takes on a nasty grey stain. Most furniture makers agree that air-dried timber is nicer to work, but the surest way to avoid grey stain, which is not always obvious in a sawn board, is to buy it vacuum kilned, so choose your supplier carefully.

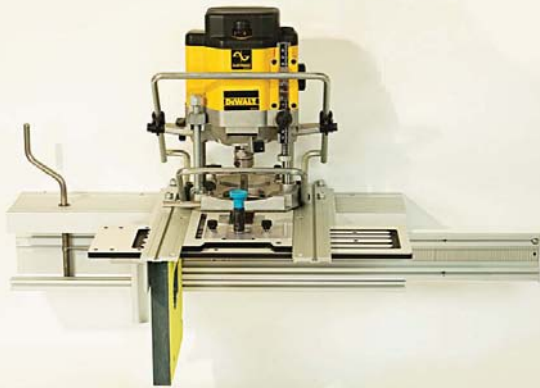


14 Gas strut mounting plates before and after fettling with files and emery paper



15 Top strut mounting brackets are mortised into the lid frame to reduce their obtrusiveness

Simple for the beginner

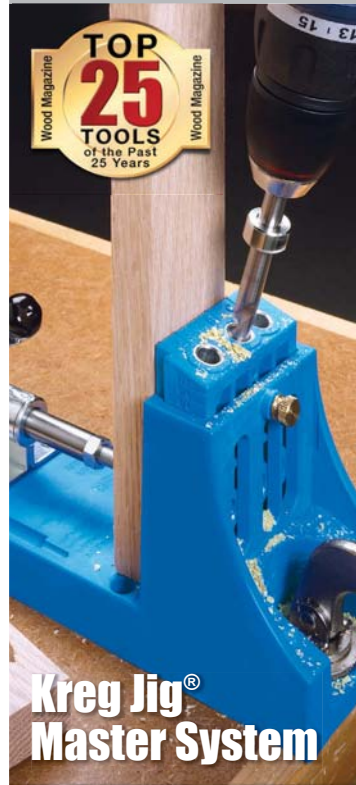


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Gluing up with sandbags

When regular clamps won't do the trick and a vacuum bag is not feasible, try sandbags

When you hear folk say you can never have enough clamps, it usually means they've been through the experience of making something without considering how they're finally going to put it together. As resourceful as we are, even the most dextrous of us can become all fingers and thumbs when it's time to glue up and, despite there being a shop-bought clamp for most eventualities, there will always be the odd shape that just won't play ball. It pays then to have a trick or two up your sleeve and in this case they come in the form of sandbags, or, more accurately, various shapes and sizes of sandbag.

With more than a little help from an experienced sewing machinist I made a selection of bags to demonstrate some of the ways they can be used. The bags are made from a heavy gauge cotton drill fabric filled with silver sand. It's possible to buy kiln-dried silver sand from a builders merchant but play sand is just as good.



PHOTOGRAPHS BY GARY/DEE JONES

An assortment of bags with different amounts of sand will give you plenty of options

When not in use as part of an efficient assembly line sandbags also make a very good rest for tools with a delicate edge

Slopes and mitres

It's not unheard of to use biscuits or a loose tongue to strengthen joints like the one shown in the photo below. It can, however, prove difficult to close the joint

without distorting the shape of the structure. Using a combination of pressure blocks and a sandbag, you can often find a solution quickly to do the job.



Use a sandbag to fill the void between pressure blocks on angled joints

A second pair of hands

I alluded earlier to being less than dextrous when it comes to gluing up and nothing is more frustrating than trying to hold blocks of wood in place to protect the surface from the jaws of clamps. A pair of sandbags clipped in place will make the task of clamping sloping edges a great deal easier. The sand becomes remarkably compact under pressure whilst distributing the pressure over a wide area.



As a second pair of hands sandbags can be used to replace wooden blocks

Repairs to finished work

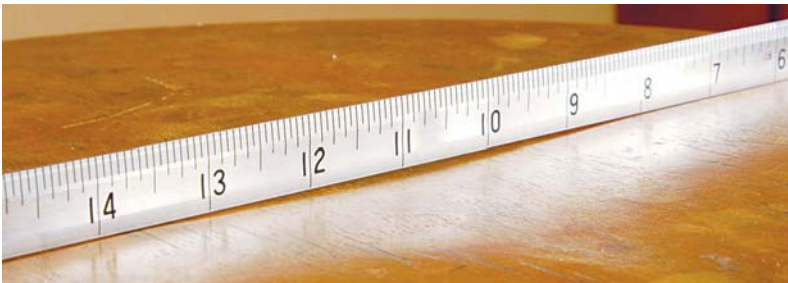
Tight curves, whether on new work or existing components like this Alvar Alto stool, are awkward to put under compression with just clamps and blocks alone. A sandbag and a suitably shaped piece of packing to compress the sand can be clamped into place with the bag moulding under the pressure of the clamp to the exact shape of the curve. Under pressure from the clamp, the sand becomes quite firm whilst taking on the shape of the curve without distorting it.

The seat on this stool has a definite but gentle dip across the middle. In all likelihood it will have been an original feature, but as the laminations are

starting to separate it is important to make the structure sound again without losing the curve. A flat board placed across the top would certainly have brought the laminations together but flattened them. A large sandbag was used instead. The best method I've found to ensure good results is to shake the bag to distribute the sand evenly, then drop it onto the surface. You may need to gently manipulate the sand with a suitable spreader to make sure contact is being made all over the surface and this is where it becomes important to have dry sand. With a suitable flat board and in this instance a caul, apply pressure evenly to the bag. *F&C*



A fuller bag works better on tight curves



Our stool has an obvious shape that needs to be preserved



After shaking the sand loose, drop the bag onto the surface



Distribute the sand evenly across the area



Apply even pressure with a flat board

Adding heat for animal glues

For a lot of repairs the most appropriate adhesive is animal glue and as this is used warm, you can extend the opening time by warming the sandbag up in a microwave beforehand. Try placing a warm bag over the dry joint before applying the glue to gain some extra time

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Traditionally these planes were called mitre planes but with a 25 deg bed and the blade with the bevel up I couldn't think of a better tool for finishing. This plane is without peer. £3,000 inclusive.



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The art of japanning

Tristram Bainbridge explores japanning, a broad term which is used to describe the imitation of Asian lacquer work

Japanning is a broad term used to describe the imitation of Asian lacquer work. Furniture and other works of art started to arrive in Europe from Asia from the 15th century; however, there was never enough supply to meet the demand. From the 17th century, European craftsmen used a variety of techniques to imitate this lacquer using the materials available. In Japan the lacquer is called urushi and comes from the sap of a tree specific to the region (*Toxicodendron vernicifluum*). It can be used in many layers to create a very hard and glossy black surface, decorated with a wide variety of gold and coloured decoration. The background of European japanning is often black but sometimes other colours: red, blue and imitation turtle shell were used.

Technique

Although contemporary texts describing the technique suggest that many layers of shellac were used, most historical japanning is actually much simpler with only a few layers of natural resin being used. The wood had to be smoothed and then a layer of gesso – animal glue and chalk – was applied to fill the grain and create a flat surface. The natural resins shellac, sandarac and copal were all used along with pigments, which included red dragon's blood and yellow gamboge. Raised decoration was created on the surface of items using dabs of gesso which were

then gilded and painted. In the 18th century finishes could be baked on in an oven which gave them greater durability and therefore the finish could be used on more functional items such as tea trays and coasters, rather than purely decorative pieces.

Modern materials can be used to create a japanned effect, with high gloss synthetic varnishes to create the backgrounds and epoxy resin for the raised decoration.

Cabinet on stand

This cabinet, dated to the early 18th century, is japanned with red and black varnish in imitation of turtleshell. When looked at closely the quality is quite crude but from a distance – and in the gloom of a candlelit room – the overall effect is stunning. The surface decoration includes many vignettes of a fantasy Asian landscape, with figures hunting or resting amongst flowers and exotic fauna and elaborate pagodas. Some of the decoration is raised and silver leaf has been used with yellow glazes to imitate gold. The crest and base are carved in wood and silvered, a style derived from the actual silver furniture prevalent in the court of Louis XIV of France. F&C



18th-century cabinet, japanned with red and black varnish in imitation of tortoiseshell

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Precisa 3.0 PACKAGE	Workshop	Inc STC - TWE & TLE (as illustrated)	2.6 / 3.5 / 240v 3.2 / 4.4 / 415v	90mm - 890mm & 1400mm	£1162.50	£1395.00
Precisa 4.0 PACKAGE 1	Professional	Inc 1.4m STC & TLE	2.6 / 3.5 / 240v 3.8 / 5.2 / 415v	87mm - 800mm	£1665.00	£1998.00
Precisa 4.0 PACKAGE 2	Professional	Inc 1.4m STC - TWE & TLE (as illustrated)	2.6 / 3.5 / 240v 3.8 / 5.2 / 415v	87mm - 800mm & 1100mm	£1890.00	£2268.00
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Precisa 6.0 PACKAGE 2	Professional	Inc 2m STC - TWE & TLE (as illustrated)	3.0 / 4.0 / 240v 4.8 / 6.5 / 415v	110mm - 1400mm & 1100mm	£2475.00	£2970.00
Precisa 6.0 VR PACKAGE	Professional	As above and as illustrated plus integral motorised pre scoring unit. Cannot be retro-fitted	3.0 / 4.0 / 240v 4.8 / 6.5 / 415v Scorer 0.8 kW	110mm - 1400mm & 1100mm	£2775.00	£3330.00

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

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Bench Dog Pock-It Hole Clamp



A second pair of hands can make all the difference

Bench Dog has a variety of low-cost, simple solutions to problems and one such device is the Pock-It Hole Clamp.

The idea is very simple; you drill pocket hole fixings for a quick and discreet result, but have no means of accurately clamping the joints together to complete the assembly. Enter the Pock-It Hole Clamp, an aluminium clamp with a 75mm-wide capacity that sits over two mating components with a plastic dowel that slides into one pocket hole and pulls the joint together. You can then screw the other pocket hole joint next to it then remove the clamp and screw the remaining hole. The dowel can be adjusted so it doesn't bottom out in the socket and the threaded clamping rod is chromed so it cannot rust or seize.

The clamp can be used to hold items in the same plane as well as those that meet at 90°. Lastly the T-handle is a lift and turn type, so it cannot foul a close surface such as the bench top. One of these would be good; a second, third or fourth would be even better when putting frames together. The clamp is compatible with any pocket hole system that produces holes at 15° to the face of the workpiece. *F&C*



Also use the clamp to hold components at 90° to one another



Use the clamp to hold frame sections in place while screwing together



The nylon plug locates into the pocket hole

F&C verdict

A handy, well-made device that avoids using long clamps.

Pros

Versatile
Well made

Cons

None

Price: £19.14

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Technical Specification:

wheel diameter	600mm
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depth under guide	370mm
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motor power	2.2 kw 3.0 hp
table size	700 x 608 mm
table tilts	0-20 degrees
blade length	4470 mm
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Shipping	230x860x2080mm

iTECH C300 Universal Woodworker 220v 1 phase



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The new C300 Universal Machine is the latest addition to the iTECH family. It has been specifically designed for the small professional workshop or home user. This industrially rated machine features a table saw and sliding table, planer, thicknesser and spindle moulder unit. The cast iron construction, accurate cross cut fence and superb build quality put this machine in a class of its own.

Features:

Panel saw sliding beam
Scoring saw for veneered boards
Accurate cross cut fence with flipstops
Cast iron tables
Sturdy swinging arm squaring frame
3 x 2.0 hp class 1 motors

Technical specification:

PLANER:

Max planing capacity:	300 x 220mm
Length of tables:	1500mm
Cutter Block Dia :	70mm
Fence angle tilt:	90° 45°
No of knives:	3 300x20x3
Max Stock removal	4 mm
Feed rate:	7 m/min

CIRCULAR SAW:

Blade tilt:	0° - 45°
Blade diameter:	250mm
Scoring Blade	90 mm
Max blade height 90°:	80mm
Sliding carriage:	1250 x 315 mm
SPINDLE MOULDER:	
Shaft Stroke	115 mm
Shaft Dia	30 mm
Speeds	2000/3100/4400/7000 rpm
Max dia of tool	160mm

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iTECH DC001S 1 Bag Dust Extractor is a ruggedly extractor is designed for small workshops. The industrial construction and quality finish sets it apart from others.

It is big enough to handle a 310mm planer or many other workshop machines. The cyclone s filtration system works by separating the waste from the airflow, diverting the waste into the collecting bag. The base is fitted with castors for mobility around the workshop. The 125 mm inlet is fitted with a twin branch 100mm adaptor, allowing connection to either one or two machines. Supplied complete with 1x 3m hose.

Technical Specification:

Fan diameter	300mm
Inlet diameter	125
Inlet holes	2 x 100mm
Air capacity	1490cfm
Bag diameter	500mm
Packing size	920x580x580cm
Motor power	2hp
voltage	240v

iTECH W0501 Oscillating Edge Sander



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The iTECH 501 Oscillating Edge Sander can be used in for getting a superb edge finish. the oscillation reduces marks and scratches free and helps to prolong belt life. The cast iron table combines with a simple rise and fall handle plus an angle adjustment allowing you to use the full area of sanding paper. Mitre fence and slot also included.

A rubber coated drive drum provides positive grip and maximum power transfer. The belt tensioning and tracking operations are a simple and quick process. The sturdy cabinet base includes a storage area for abrasives. The auxiliary table with sanding drum for internal or external shaped work

Technical Specification:

Motor power	2hp
Belt dimensions	2473 x 152mm
Belt speed	1033m/min
Main table dimensions	905 x 305mm
Auxiliary table dimensions	290 x 259mm
Platen tilting	0 - 90 degrees



MiniMax



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MARTIN



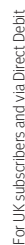
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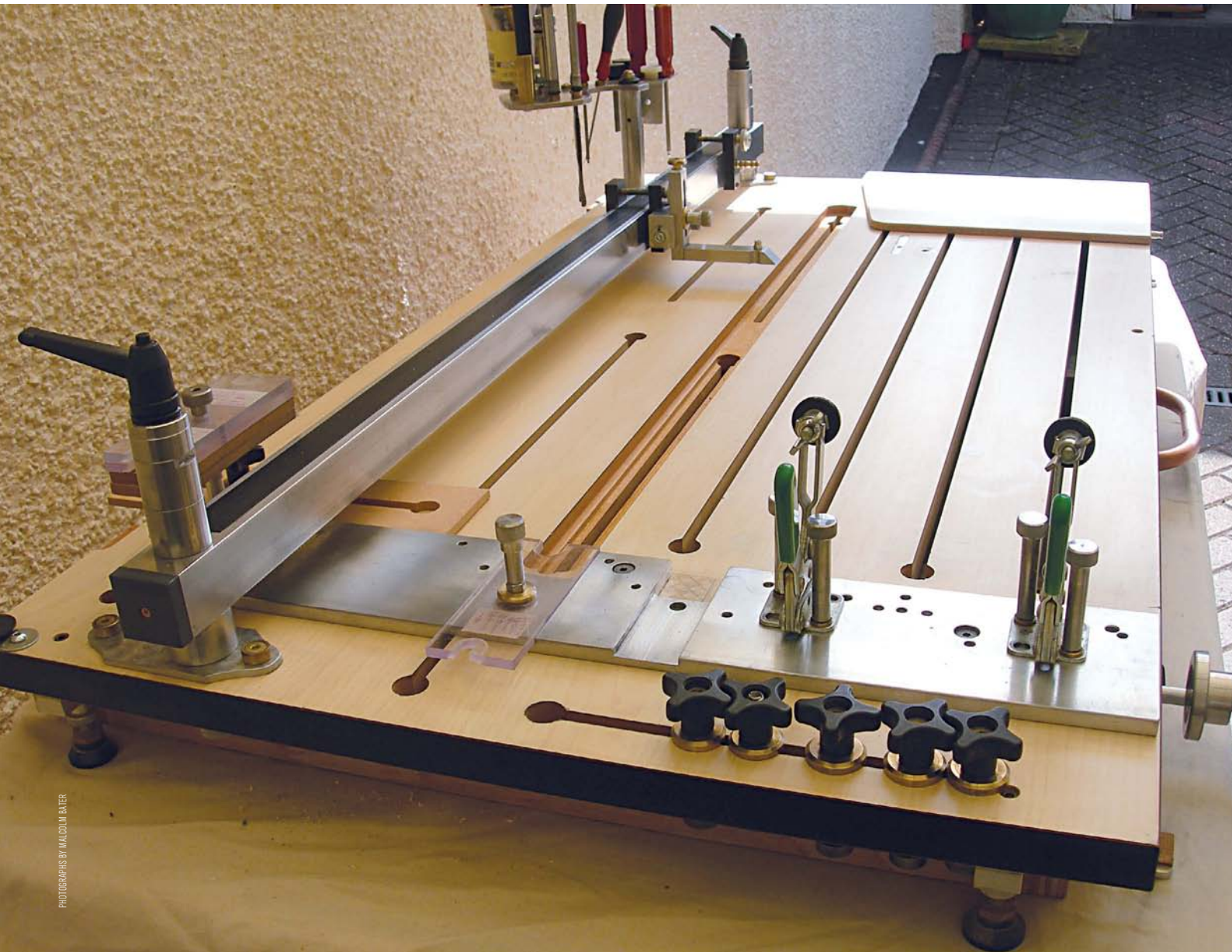
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PHOTOGRAPHS BY MALCOLM BATER

Malcolm Bater takes tabletop routing to a whole new level with his own shop-made system

Having been fascinated by the capabilities of the router, it occurred to me that there might be a missing link as to how this versatile machine could be used with even greater accuracy and efficiency, to complement and aid the construction process.

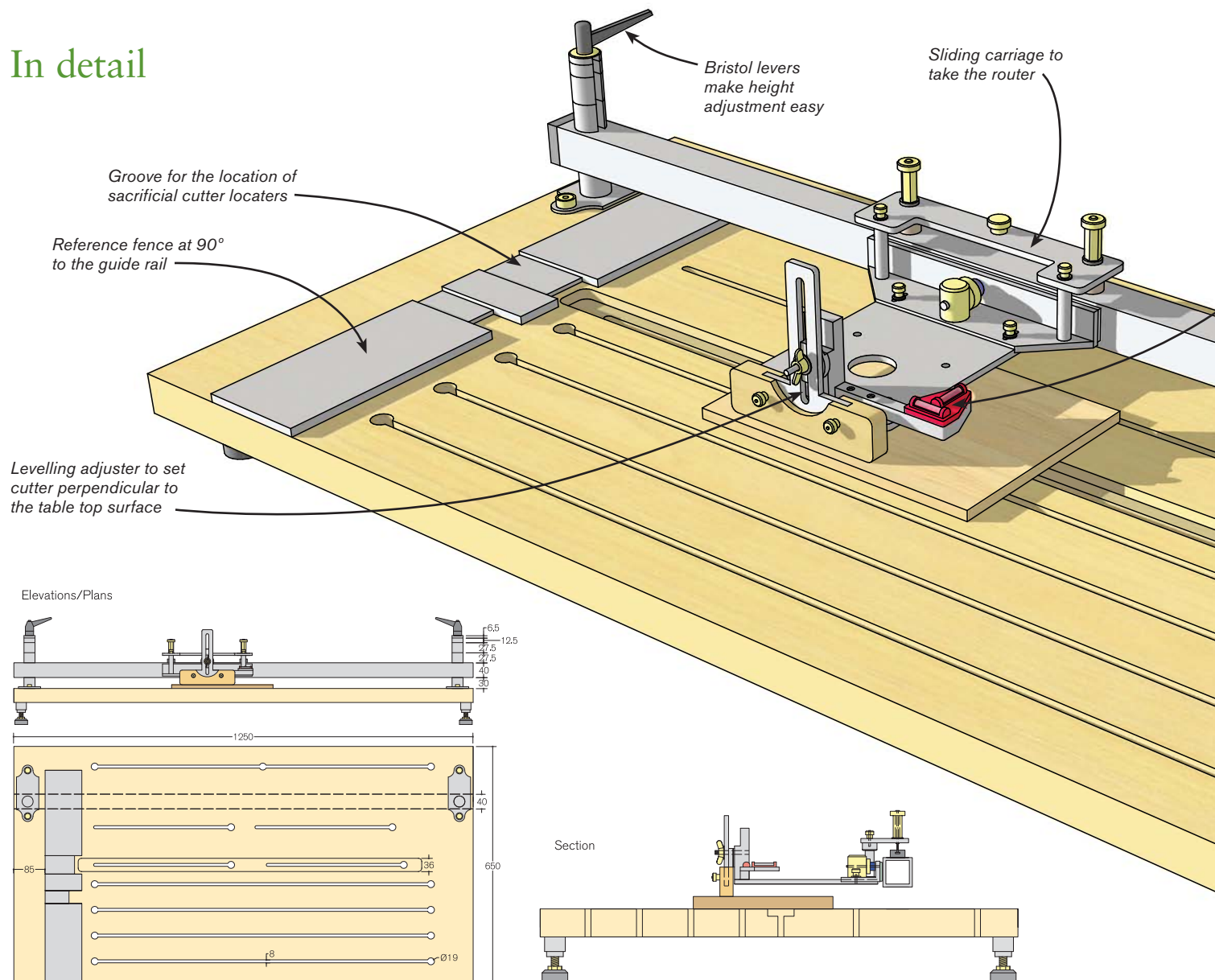
While there are numerous commercial jigs and tables already available, there are always additional components required to cover one-

off projects so I decided to set about creating a system that would bridge the gap. It was definitely something of a challenge to come up with a router table that could eliminate the need for multiple jigs and at the same time produce them quickly and accurately on the table should they be required.

This was the beginning of a lengthy process that led me to develop what I call the 'Routmaster table'. I believe it's an innovative concept and one

that has given me so much pleasure in the making that I would like to share it with like-minded woodworkers. Readers might also be interested to learn that I have approached more than one manufacturing company with an established reputation for precision routing, hoping they would take the project on, but as yet have had no takers. The general consensus is that it would be too expensive to develop. ➤

► In detail



How it works

The table is in effect a master jig allowing the router user numerous options for clamping uniform or irregular shaped material to the table. When routing free-hand in a

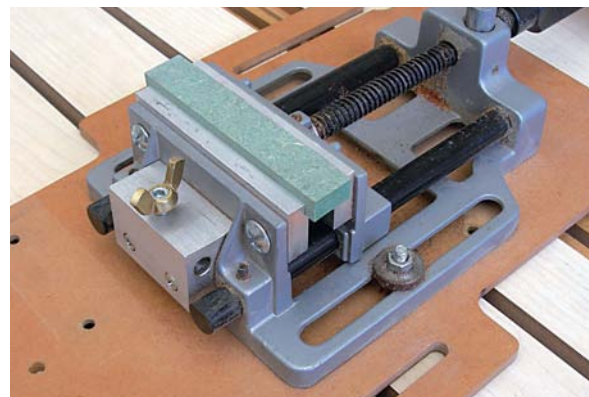


The router is cradled in a baseplate and suspended from a reference fence

conventional way, the fence is used to guide the path of the router. This is acceptable providing the operation is near the edge of the material. As the stock gets wider this leaves the operator with less control due to the distance of the fence from the cutter.

This is where the Routmaster table comes into its own by providing a fixed reference fence to align the work and a fixed guiderail that mimics the router side fence. In addition, the operator stands directly in front of the table with both hands on the router applying gentle forward pressure. This provides better control of the router as you don't have to maintain constant side pressure as you do with the conventional router fence.

The overhead guiderail is positioned above the table surface so that longer stock can slide underneath it and be machined on the opposite side of the table. This requires an additional support rail for the router to travel on. If machining a number of identical

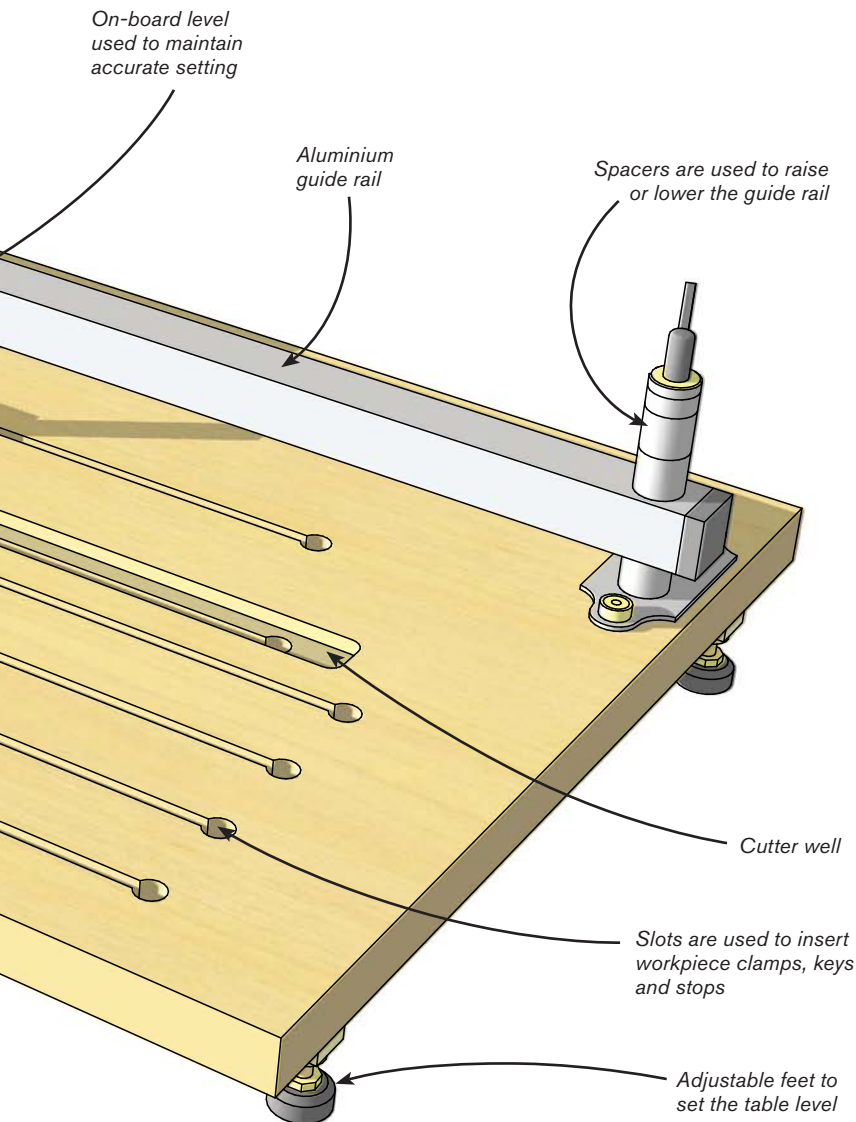


An auxiliary vice can be used to hold small components

components to length, once the first one has been machined, use the table reference bar to locate the boards and repeat the entire process.

Centring aids are also provided on the table aiding the initial set up process by identifying the cutter position, whether it be the centreline or outer cutting circle of the cutter. This feature is particularly useful when

Main functions

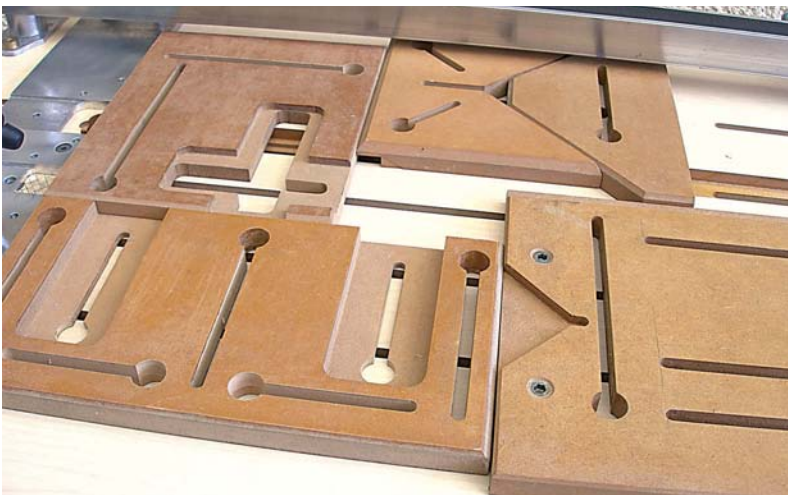


Just some of the items that can be made on the table apart from standard sheet components

With a conventional router table the router is fixed and the work is passed over the cutter, against a fence. With the Routmaster, the work is fixed to the table and the router is moved over the work in a controlled fashion. This method improves safety as both machine and component are either locked down or restricted to predetermined amounts of travel in a given axis.

The main advantage of the Routmaster table is the ability to quickly set up and accurately machine identical components like cabinet sides, doors and drawer fronts. There are a number of aids built into the table design that make setting up a simple process. Some of the functions include edge machining, dado cuts, drilling, rebating, counter boring and even mortise and tenon joints.

Using the appropriate tooling, the Routmaster is suitable for machining plastics and with the use of a digital angular rule accurate angle cuts can also be produced. Like any new system the benefits aren't instantly obvious until it has been used for a few simple projects first, it is only then that you will find ways of adapting it to suit your needs. I've recently fitted a digital Vernier that is hinged onto the table reference fence allowing me to accurately position stock on the table and therefore eliminate the need for additional marking out.

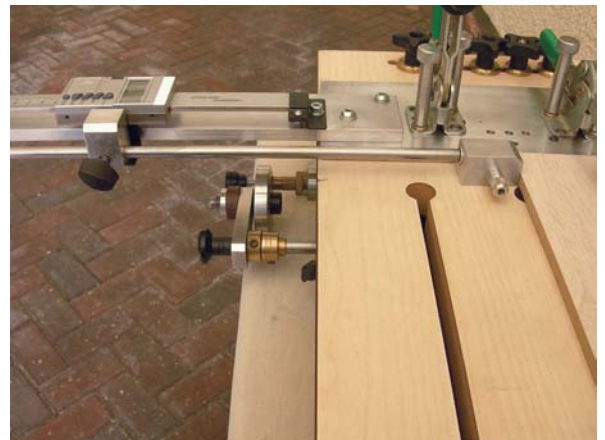


A range of jigs and holding devices made on the table to hold workpieces

making templates or jigs.

Minute adjustments can be made in all directions, allowing you to widen a dado for example or take fine, controlled trim cuts to dimension stock. The same level of precision can be applied to smaller components that

would otherwise be awkward to do with a router if a second alloy vice is mounted on the table. Alternatively, a second auxiliary table can be used by machining an appropriate wooden key on the underside to achieve a snug fit into one of the 8mm table slots.



A later addition is a digital Vernier gauge to eliminate the need for some marking out

► Accessories

With any new piece of new kit it's the accessories that put the icing on the cake and this also applies to the Routmaster table. I've listed a couple that have proven to be useful for the type of work I do.

Cutter reference slides

These slides are located in a dedicated wide keyway machined into the aluminium reference fence directly in line with the table cutter well. They can be made from Perspex or a good

quality ply. The blank is inserted into the slot and secured. The router is used to produce a partial cut in the slide with the appropriate cutter to identify the position of the cut.

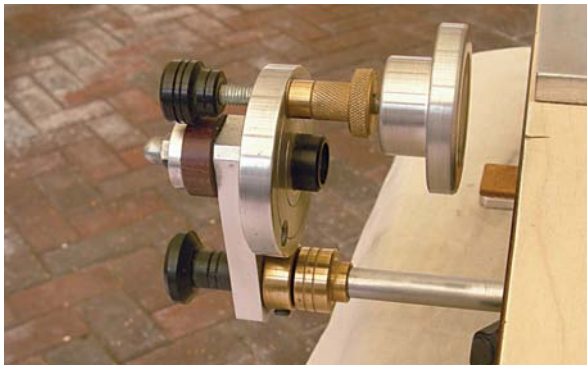
Retractable reference rod

This sits below the table directly to the side of the reference fence and can be withdrawn up to 300mm if required. This reference rod is used to locate stock for identical machining operations and can also be withdrawn

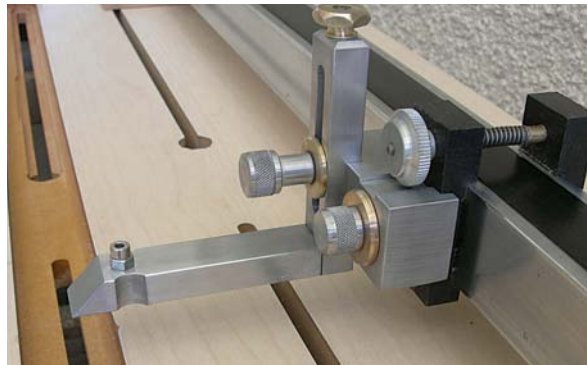
completely and used with various additional table jigs.

Floating cutter centring aids

The first of these is an aluminium pointer to identify the position of the router cutter. It is attached to a router travel stop that can be adjusted vertically in its saddle and traversed along the length of the table. The second is a Perspex gauge that can be used to set up the travel stops on the overhead guide rail.



A reference stop is used to position repeat items without having to reset the machine



A cutter reference guide can be used to identify the position of the cutter against a centreline on the component

Making the table from scratch



Cutter reference guides are used to identify the outer edge of the tooling. These are housed in a purpose made groove within the squaring fence

The tabletop was cut oversize and trimmed up square using a bearing guided router cutter and straightedge. Laminate edging was applied all round to protect the edges. MDF was used for the table surface, which was covered with a melamine finish on the top and underside. The 8mm through slots were marked out on the table surface and machined using an 8mm cutter using the front edge of the table as a datum. Due to the table thickness this was achieved in three passes.

The position of one of the overhead guiderail locating holes was drilled into the table and the guiderail, already pre-drilled, was bolted onto the table. This was squared up to the front face of the table and clamped in position whilst the remaining hole was drilled through the guiderail into the table.

Having machined the aluminium reference fence it was squared up to the guiderail and bolted into position and set at 90° to the guiderail. With the guiderail elevated to its base position the cutter well was machined to complete the table.

Making the fine adjuster

The router base consists of an aluminium baseplate that supports the horizontal and vertical fence assembly. This arrangement allows the router to be guided and adjusted during the routing operation. Firstly the 6mm-base was machined in a milling machine so that all edges were squared in preparation for the fitting of the additional parts. Then the four base fixing holes were drilled using the Tufnol soleplate of the router as a template. A central 32mm-hole was machined on a lathe to allow the router cutter to pass through the baseplate.

Two additional holes were drilled and tapped at the front of the base to secure the adjustable fence assembly. A further 6mm-hole was drilled to accept the fixed pillar that was threaded and allowed the jacking



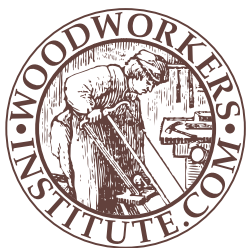
The router baseplate is drilled to match the router fixing holes for a conventional router table

movement of the base. A short length of aluminium angle that was longer than the width of the base was then machined to straddle and sit onto the baseplate. This provided the location of the adjustable fence assembly and was also slotted to match up with the two tapped holes drilled at the front of the baseplate.

This aluminium angle would become the vertical fence and two support pillars, one on each end would carry the horizontal fence. Fixed centrally to this fence was the 6mm threaded Allen bolt and metric scale that connects to the fixed pillar on the base allowing the fine adjustment required. *F&C*



To ensure square cuts the table has to be levelled and the router calibrated similarly. The fine adjuster can be moved laterally by 0-15mm; this allows the router to be adjusted without losing its fixed reference



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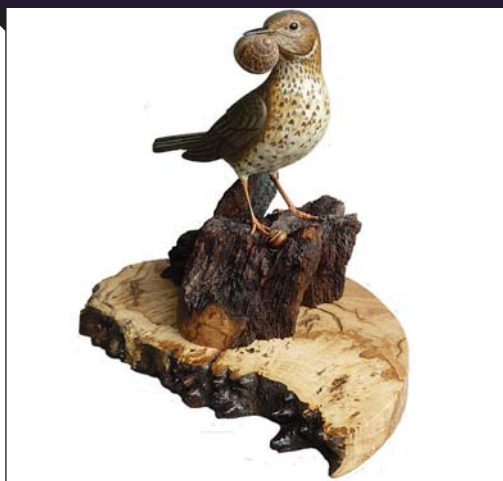
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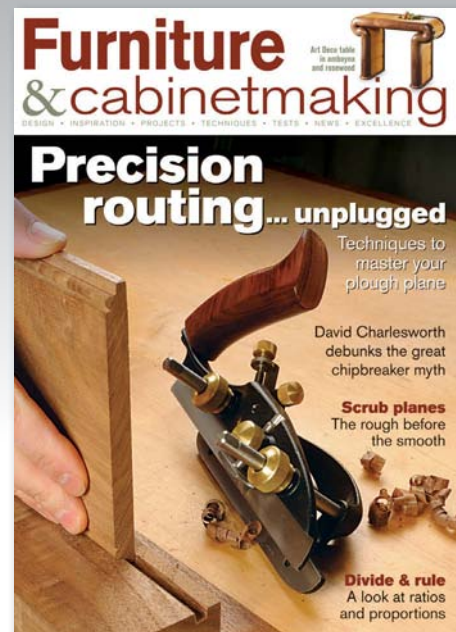


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20 minutes with... Ben Rawlinson

Ben Rawlinson is a maker with a realistic approach to producing beautiful, modern furniture



Ben Rawlinson's furniture features flowing curves that produce subtle highlights and shapes that encourage tactile interaction. Although he's a relative newcomer to the furniture making business, there's nothing amateur about his work, which displays careful craftsmanship and consideration of fine detail.

F&C: What are you working on at the moment?

Ben Rawlinson: I'm working on a small chest in padauk (*Pterocarpus dalbergioides*) commissioned by some friends who have just married. It's an extension of a jewellery box really but with all the trimmings. On the small but detailed projects where one small

slip can be really costly, you have to focus really hard.

F&C: Why did you become a furniture maker?

BR: I was getting the creative urge but wasn't in a position to let it all out, so I decided to retrain in furniture making. The variety and natural beauty of wood is quite astonishing really.

F&C: What inspires you?

BR: This is tricky because I don't think I'm directly influenced into thinking 'that pattern in the sand looks nice' then making a piece of furniture based on it. I'm sure lots of images start to come from the subconscious at the design stage, all based on things I've seen or experienced at some point no doubt, but I couldn't pin it down to anything that specific.

F&C: If your furniture were music, what kind of music would it be?

BR: That's a pretty deep question! I used to DJ quite a bit and have a passion for the expressive nature of hip-hop which is very personal, much like the individual styles of designer/makers.

F&C: What do you admire in the craft at the moment?

BR: I always admire pieces and makers that make me feel like an absolute beginner. When you see a Joseph Walsh or Rupert Williamson that blows your head off, it keeps your ego in check whilst at the same time motivating you.

F&C: Who has been your greatest mentor/role model?

BR: Simon Yates whose workshop I rent space in has been very supportive and encouraging about my ideas and I've also learnt a lot from him about how to deal with people on a business level.

F&C: What comes first, design or technique?

BR: Sometimes design comes first and the work develops to provide a solution, but at other times the experiments and trials of technique lead to something exciting. Inevitably these two must work together no matter where the starting point is.



The 'Warp' table

F&C: Are we too obsessed with outdated modes of work?

BR: No I don't think so, but it's important to embrace new tools and technology because it gives you much more scope for designing and making different types of furniture. It's great to cut traditional dovetails and joints and use solid timber if the money is there, but there's plenty of jobs where you need to adapt to make it pay. I learnt how to draw up rods by hand and that's useful because it can sometimes be essential, but I invariably draw and visualise with CAD because I've been using it a long time and find it faster now.

F&C: How or where do you exhibit your work?

BR: I try and do three or four shows a year to show speculative work and smaller items that people can buy on the spot. It's expensive, but it gets the work in front of a large audience where they can get hands-on and appreciate the quality. Having professional photographs on the website is also an absolute must.

F&C: How comfortable are you with working to someone else's design?

BR: I have made pieces for other people and it can be very satisfying, especially if they are open minded about the work and how it progresses. I've also been in the room when the client has seen it for the first time and not been given any credit and that's not so nice. It's a different kind of pressure and never as absorbing as working up a new piece of your own when the hours disappear in seconds and your heart is really in it.

F&C: What's your creative process like?

BR: It's very simple really. Ideas can come at any time and when one bites, I don't hang around. Bouncing ideas off someone you trust can help, but I'm largely self-directed. Once the making starts it just takes over until I come out the other end, bleary-eyed and happy.

F&C: Do you consider yourself an artist or a craftsman?

BR: It's very difficult to label yourself like that. Anyone who designs and makes the work themselves has to have elements of both, plus business sense to succeed.

F&C: What's the practical process you undergo when moving through the stages of a project?

BR: On a commission it's a case of pinning down a final design quite early through presentation and perhaps slight adjustment to initial ideas. I think I'm quite organised in drawing up cutting lists and a plan of making and quite good at sticking to that plan. I still tend to overestimate timing slightly, but maybe that means I'm getting faster at making. For speculative work, it's more a case of feeling the right path with more scope for experimentation and risk. I'm not a great fan of lengthy finishing processes and really have to force myself to stay focused at the end if necessary.

F&C: Do you think furniture making is in danger of disappearing?

BR: Absolutely not! It's difficult yes, but I think it's one of most respected crafts out there at the moment, especially in the UK and lots of people are willing to train.

F&C: What advice would you give to someone starting out?

BR: I'm only really starting out myself, but the thing I'm finding most important is that being flexible in terms of what you make doesn't mean you have to stray from your prices, goals or standards. Times are tough and if you work for yourself then you have to promote yourself like hell and grab jobs when they come up. That way you will have the time to make the speculative pieces and still be in



The 'Princess Sarah' desk and stool revealing the careful detail within

business when those lovely bespoke commissions come along.

F&C: What irritates you about the industry?

BR: People who say they will contact you and then don't! *F&C*

Contact

Web: www.benrawlinson.co.uk



The 'Helios' coffee table has featured in *F&C* before when the editor took a shine to it at Cheltenham's Celebration of Craftsmanship and Design

■ N.E.J. STEVENSON LTD

N.E.J. Stevenson at the Coronation Festival

It was recently announced that the Gardens at Buckingham Palace will be the venue for a one-off event in the summer for holders of Royal Warrants to celebrate the 60th anniversary of The Queen's Coronation. N.E.J. Stevenson will be taking part in the four-day celebration between the 11–14 July, 2013.

The Coronation Festival will celebrate innovation, excellence and industry, showcasing the broad range of fine brands which have earned the recognition of a Royal Warrant over the years.

Royal Warrants are a mark of recognition to individuals or companies who have supplied goods or services for at least five years to the Households of The Queen, The Duke of Edinburgh or The Prince of Wales. Warrants have always been regarded as hallmarks of quality, excellence and service.

N.E.J. Stevenson was granted its Royal Warrant in 2003 and its prestigious Royal appointment now sees the company join over 200 Royal Warrant Holders at this unique event.

It is delighted to be part of The Coronation Festival next summer. "It will provide us with a great platform to showcase our bespoke hand-crafted furniture and interiors", said Neil Stevenson, Managing Director.



A sitting room N.E.J. Stevenson restored at the National Trust Knightsbrayes property

PHOTOGRAPH COURTESY OF N.E.J. STEVENSON

■ WARWICKSHIRE COLLEGE

Furniture students design memorial for Coombe Abbey



PHOTOGRAPH COURTESY OF WARWICKSHIRE COLLEGE

From left to right: Jamie Ward, Joe Taylor, Jan Waterston, Keith Sealey

The beautiful grounds of Coombe Abbey Country Park will soon feature a woodland seat designed by one of Warwickshire College's Furniture Crafts students.

Students from the college's Leamington centre were invited to take part in a challenge to get out of the workshop and into the woods to design a memorial bench to fit in with the leafy surroundings of the park near Coventry. They devised an impressive range of different designs from a shiny steel-encased hollowed-out log to a hanging seat and a whole felled tree.

The bench will be a memorial to the parents of Keith Sealey, from Lutterworth-based furniture makers,



Sealey Furniture.

The current project gave the students the chance to make a site visit, work to a design brief and come up with a model of their design before presenting their ideas to the panel.

The eventual design chosen by both Keith and Joe Taylor, Coombe Abbey Country Park manager, was an innovative project by 25-year-old Level 2 student, Jan Waterston, but two other students' designs have also been selected as potential future projects for the park.

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

■ WORK SAFE BULLETIN

Work related deaths in the UK



PHOTOGRAPH BY GEOFFREY LAYCOCK

We want all our readers to have the safest year they possibly can so we will continue to provide useful snippets of relevant information, guidance and suggestions over the coming months. To start with though, here's a look back at how we did from 2011–2012. Although the information is about work, it does illustrate how vulnerable anyone can be without proper care; woodworking is relatively safe but not always.

Acute deaths

Statistics published late in 2012 show that we did well at work with only 173 workers killed as a result of work activity throughout 2011–12. We don't know how many were killed whilst doing our types of activity at home though, but compared with an average of 850 people dying every year during the '70s, it's cause for celebration. Well maybe not quite yet. The easiest statistic to collect and publish is what I call 'acute' death, e.g. falling off a roof then dying, if not immediately then shortly after. Of the 173, 118 were employed and around a quarter were in the construction sector, 55 were self-employed and almost half in the construction sector.

Chronic deaths

More difficult to measure accurately is what I call 'chronic' death – which takes a long time. Deaths from previous asbestos exposure number 4,000 every year – with four times more men than women dying, deaths from cancer caused by occupational exposure to cancer-causing agents through work number 8,000 – though may be as high as 12,000, with three times more men than women dying. We mustn't forget that roughly 1,200 are killed in road traffic incidents and were driving, or otherwise killed, whilst working. This puts the total at around 13,500–17,500. Looking at injury and disease statistics would take another article! Now, for the big surprise: in addition 417 members of the public, not engaged in work, were killed by work activities.

Safety advances

This could all sound very depressing, but we are streets ahead of most other countries and compared with one example, India, where I did a short study on construction site safety, there is no comparison – labourers seem to be considered an expendable resource there.

The basic message from all this is we are very good in the UK at having rules about physical safety and mostly applying them, hence so few 'acute'

deaths. Most are due to a failure to comply with law and related guidance. We are not good at all with 'chronic' death prevention, although to be fair, the asbestos related problems date back mostly to '70s and '80s work activities and working standards – much related to stripping out of asbestos materials. We are still pretty poor at controlling exposure to cancer causing agents and maybe in forthcoming articles we will look at basic safety recommendations regarding safe use of chemicals.

Work safe

Until then, the basic recommendation, whether working or enjoying woodworking at home is: think carefully about access to heights, operate machinery correctly using published guidance, if you suspect it's asbestos – don't touch it, and when using any form of substance read the label and material safety data sheet before use!

Geoffrey Laycock

About Geoffrey

Geoffrey Laycock was HM Inspector of Factories (HSE Inspector) and has been a safety and ergonomics consultant for over 30 years. He has been involved in research with personal protection, writing British Standards and has been published extensively. He is a woodworker, metalworker and racing car and vintage motorcycle restorer.

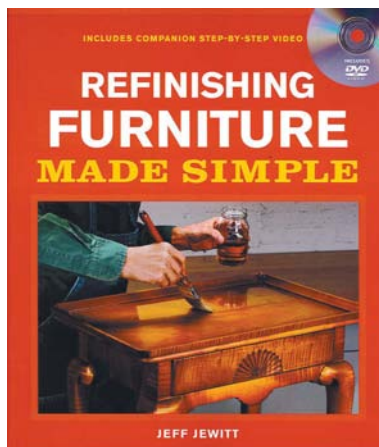
Workshop library

This month Derek Jones and Paul Mayon share their opinion on a selection of books and DVDs plus the app of the month

BOOKS

Refinishing Furniture Made Simple

By Jeff Jewitt



The *Made Simple* series has long been a good entry-level read for anyone looking to acquire new techniques for a wide range of subjects and *Refinishing Furniture* is no different.

It's not easy to make a book about finishing look good when you consider the raw materials used in the process are invariably different shades of brown. This pretty much goes with the territory for 2D manuals on the subject unfortunately, but the accompanying 1 hour 20 minute DVD certainly goes a long way to addressing this. There are some real gems contained within both parts of this tutorial, which begins by assessing whether a project is worth all the effort it will take to renovate it at all. The conservation of modern artefacts is a relatively new science and as such an area of expertise that is not yet complete, so do as Jeff suggests and seek professional advice if you're in any doubt.

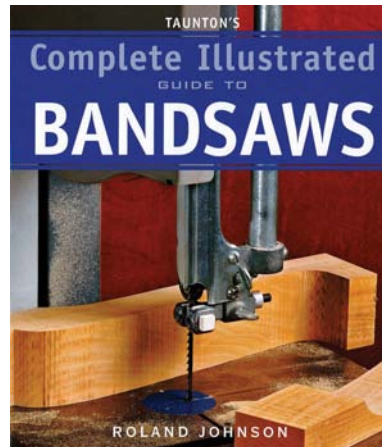
Not all of the products shown in the book are, to my knowledge, available in the UK and this is a good indication of how we differ in our approach to finishing. Varnishing is more popular than oil finishing in the US it seems and there is little mention in the book of the different types of wax finish that can be used on bare wood. I don't believe this to

be an oversight, more an observation of different styles. There's more than a few get-out-of-jail tips and much to be learned from this seasoned pro, as long as you respect the maxim that a little bit of knowledge can be a dangerous thing. That said, *Refinishing Furniture* is a very good place to start and covers what we might consider to be some of the more obscure techniques for reviving a wide variety of finishes.

Published by The Taunton Press
£21.99 Paperback 123 pages
DVD 182 mins
ISBN: 978-1-60085-390-6

Taunton's Complete Illustrated Guide to Bandsaws

by Roland Johnson



As a passionate advocate that a bandsaw ought to be the first powered saw a woodworker buys – rather than a tablesaw – it was good to see that this title really does this workhorse machine justice.

Johnson uses a very logical format to the book, focusing first on what a bandsaw will do and the types of saw available. He goes on to describe each part of a typical bandsaw and its function – including accessories – and offers a buyers' guide. Section two of the book is perhaps the most valuable as it focuses on setup. Though most machines will work passably well when bought, with some time and effort, setting a bandsaw up will reap huge rewards

in terms of smoothness and accuracy of cut. Methods of ensuring wheel alignment, dressing the 'tyres' on the top and bottom wheels and how to safely remove and install blades are all explained concisely. Johnson also covers how to deal with blade drift to ensure that straight cuts remain so.

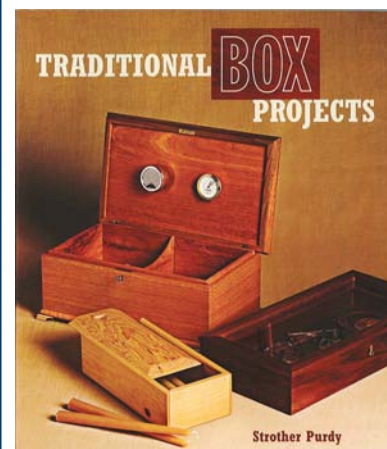
There are a few small errors however; the most obvious one being that the formula Johnson quotes for finding the radius of an arc on page 131 is incorrect due to a typographical error. Likewise there are some missing numbers for the rake angles quoted on a tooth diagram on page 59. It is a shame that the book was not better proofread as the content is mostly well presented with clear photographs and text. Despite these minor quibbles the book is really useful as an overview of how to get the best out of what is one of the most versatile machines in the workshop.

Published by The Taunton Press
£17.99 202 pages
ISBN 978-1-60085-096-7

Traditional Box Projects

By Strother Purdy

Strother Purdy is a boxmaker of some distinction and his book shows the reader a range of boxes that may be constructed using reasonably basic joints. The book contains instructions for a basic dovetailed box, a humidior, a display



box and a fine Shaker lap desk amongst others. The book offers the reader a progression through various techniques – ripping, cutting mitres and dovetailing – as completed using various machines including a tablesaw, bandsaw, table router and planer/thicknesser.

The best way to review a book like this is to make one of the projects and I chose the basic dovetailed box. The instructions for this, like each of the projects in the book, are well set out in how to approach each operation and why each box is constructed in the order stated. For woodworking machine users the book is a respectable guide showing which machine to use for each operation and how to use it safely. That said, it may be argued that some of the projects could be completed just as quickly using hand tools. For this reason I constructed the dovetailed box using only hand tools and found the book still to be useful as, no matter whether a reader uses machines, hand tools or a combination of both, the operations and the order they are completed in tends not to vary.

Traditional Box Projects is a well-structured and photographed manual that really does help beginner and intermediate woodworkers to realise a range of projects. What sets this title apart is that not only is the 'how' of each operation explained well, but also the 'why'. If you build only two or three of the projects in this book and follow Purdy's advice, it will give you an appreciation of and an ability to apply the principal techniques of box making.

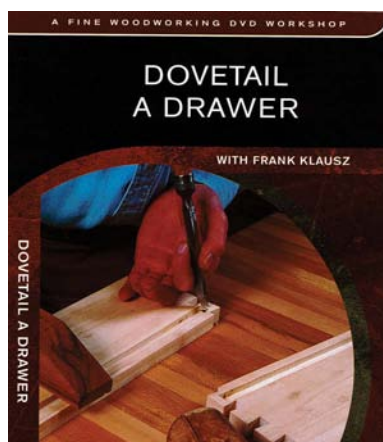
Published by The Taunton Press
£17.99 160 pages
ISBN 978-160085-110-0

DVDs

Dovetail a Drawer

With Frank Klausz

Do not be fooled by this DVD. It is about far more than merely making a dovetailed drawer – though it shows how to extremely well. Any woodworker who aspires to a professional standard of work should pay very close attention to Frank



Klausz. Frank is all business when working and shows us, right from the first seconds of his production, why it is important to do high quality, accurate work, but also to be able to do it repeatably and at speed. Early on he makes the point that, whether professional or a weekend woodworker, no-one really has time to waste if they intend to get pieces made. Of the two dovetailing masters I can think of, Frank is one of them – Rob Cosman is the other – and, when pushed, can complete a set of close-fitting, accurate dovetails in a little over three minutes. Frank makes it clear that when he tenders for work, he budgets for just 20 minutes to make a complete drawer.

Pay close attention to every move that Klausz makes by watching the DVD several times over and you will begin to notice not only what he is teaching in terms of the operations to complete a set of dovetails, but also the economy of effort in every motion, the importance of his body stance and even how time is saved and precision increased by stacking timber for marking and chopping.

This production is over 20 years old but, when the content is this good, that doesn't matter. The asking price represents huge value for what is shown.

Buy this DVD on dovetailing drawers, watch it repeatedly, then go out to your workshop and make 100 vertical practice cuts and 30 sets of dovetails using Frank's methods. You will be glad you did. As Frank says: 'Go for it!'

Published by The Taunton Press
£17.99 76 Minutes

App of the month iHandy Carpenter



I'm not suggesting for a second that you ditch your laser level and plumb-bob just yet, but even the most organised professional can find himself in need of some accurate information with no means of obtaining it. The chances are he will have his phone in his pocket, so all is not lost. iHandy produce a number of measuring and levelling apps, some sold separately and some as a package, like the iHandy Carpenter. The toolbox contains a single axis level, 360° surface level, a plumb-bob, protractor and ruler.

The graphic has a classical look about it with a touch of the Jules Verne style. It relies on the phone casing as the reference for generating data, so for best results, you will have to remove your iPhone from its protective sleeve first.

The surface level probably has the greatest potential, especially for installers of cabinets. Lay the phone on its back in the bottom of the carcass and start adjusting the feet. The sensitivity of the bubble can be adjusted for all the levels to achieve a tool that actually works very well.

There is a short but useful instruction guide to help you calibrate the app before you can use it in earnest. You will require the aid of a level first though, which in some ways questions the need for the app altogether, but then try getting a four-foot level in your top pocket.



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Web: www.itunes.apple.com

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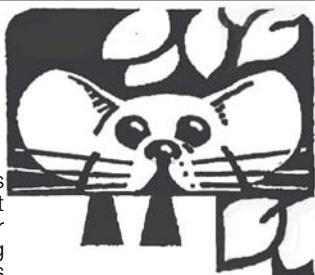
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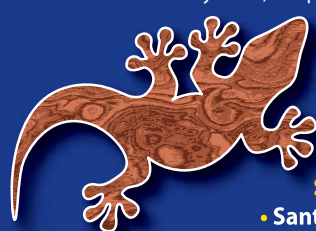
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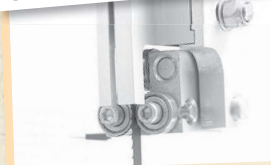
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