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Welcome to...

...The finish line



PHOTOGRAPH BY DEREK JONES/GMC PUBLICATIONS

A new plane from old steel. Giving a cranky old No. 5 a new lease of life

Despite the trade I'm in DIY is not really my thing and as if proof were needed, what they say about cobblers isn't a load of cobblers. Sure, there's some natural overspill between making furniture for other people and maintaining the family abode but there are some customers I'd prefer not to have. And before I get home to find a suitcase on the drive I should make it clear that I'm the difficult customer. Home projects are typically where I step outside my comfort zone of tools, techniques and materials.

My most epic DIY disaster also happens to be one my other half's happiest days, ever. Attempting to dot and dab some dry wall into a space that would eventually be our new kitchen was, apparently, the funniest thing she'd ever seen. It's a great leveller to fail in public and though experimenting from time to time will inevitably lead to success it's the failures that teach you the most.

I paid the price for hasty glue-up at the end of a busy Friday this month that resulted in a pair of badly aligned panels and acres of unnecessary material to remove. Five minutes on the grinder and roughly the same amount of time spent on a diamond stone converted an old No. 5 into an impromptu scrub/fore plane. The reward was some of the most satisfying shavings I've ever produced across or along the grain.

Finishing line

We've themed this issue around the process of finishing and have decided to take a look at French polishing with shellac, burnishing with beeswax and a technique for liming with milk paints. Just as plastering is not a technique I excel at, neither is liming but the more I use modern water-based products the more I appreciate their convenience. The first water-based paints I used were dreadful and it put me off water-based finishing products for years. That was a long time ago and thankfully they have evolved into a range of products that I'm now pleased to have on my list of finishing options.

New tricks

When it comes to choosing a finish I think we're all guilty now and then of going with what we already know. It's easy to understand when the results are generally predictable. After all when you've invested heavily in time and materials the last thing you want to do is play Russian roulette with the final stage. However, when this becomes more of a habit than a calculated process of elimination then maybe we're sliding towards being just a tad lazy? Maybe this is one of the reasons why I make it a habit to experiment with new finishes from time to

time, the same way I flip between Japanese and Western saws or wooden and metal planes. They all have something unique to offer, however subtle the difference. So if you think you've got the whole finishing thing sussed, my advice is to think again and ignore what they say about old dogs.

We're glad to have our roving reporter back with us again this month, Anne Briggs-Bohnett. She caught up with Tom Lie-Nielsen to talk about divorce, farming and tool steel in a candid tale of triumph over adversity. And after a spell in San Diego with Luke Addington and Patrice Lejeune we trekked north of the border into Southern Ontario to meet up with Karen McBride and discover her technique for making round drawer boxes. There's plenty of homespun talent as well, as Jim Hooker puts the Holtey T21 transitional plane through its paces, while our newest contributor Chris Wiseman shares some of the tricks he picked up in the Lake District with Waters & Acland.

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Furniture & cabinetmaking

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

Contents

Issue 246 July 2016



The art of French polishing – see page 34
Front cover image courtesy of Luke Addington

Your F&C

- 1 Leader**
Derek Jones welcomes you to this month's issue of F&C
- 4 News & Events**
A round-up of what's going on in the world of furniture
- 8 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
- 72 Workshop library**
We review three books, *Arts & Crafts Furniture: From Classic to Contemporary*, *British Saws: A History and Collector's Guide* and *DIY Furniture 2*
- 74 Next month in F&C**
Get a peek at what we'll be bringing you in issue 247

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



Design & Inspiration

14 Driving the rebirth of the hand tool industry: An interview with Thomas Lie-Nielsen
Anne Briggs Bohnett meets the man who helped kick-start the hand tool revival

50 Under the hammer: bench-marks of quality
John Adamson reports from the recent David Stanley Auction and tells us about some notable lots that went under the hammer

69 The École Boulle
Amber Bailey describes her experience as a student at the prestigious École Boulle

80 Under the hammer: Elizabethan tester bed
This month we look at a remarkable example of a wooden bed canopy

Projects & Techniques

21 Building Le bureau de l'agent console desk
From commission to delivery, Richard Warmisham covers some of the techniques used in this tricky build

34 The art of French polishing: part 1
Patrice Lejeune and Luke Addington begin their introduction to French polishing

41 Water-based finishes
The Editor asks 'are the new generation of water-based lacquers really a match for old school finishes?'

44 Holtey T21 transitional plane
Jim Hooker puts the Holtey T21 plane to the test

55 Making round drawers
Karen McBride unlocks the secrets behind making these unique round drawers for the Patience cabinet

60 Our correspondent: Sticky fingers
John Lloyd returns with more top tips for stress-free glue-ups

63 Deconstructing the Oak Within sideboard
Chris Wiseman explains some of the key features on the first ever sideboard he made as a student

21



63

News & Events

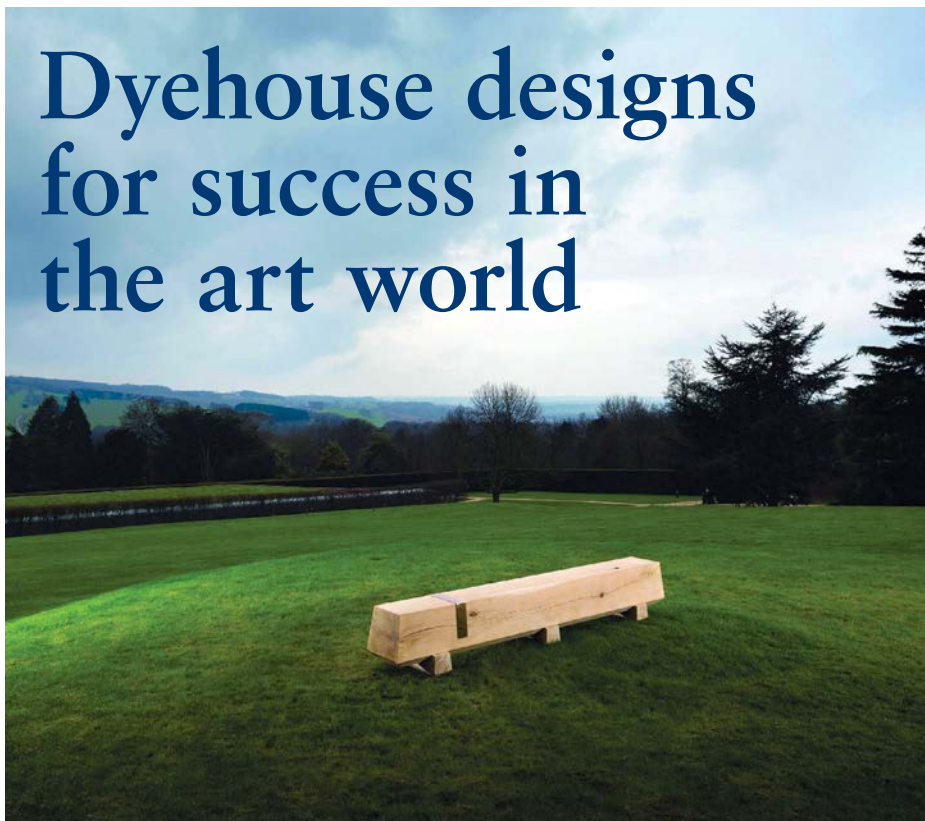
Contribute to these pages by telling us about matters of interest to furniture makers.

Call Derek Jones on 01273 402 843 or email derekj@thegmcgroup.com

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

PHOTOGRAPH BY JONNY WILDE

Dyehouse designs for success in the art world



The FALL bench has been installed at the Yorkshire Sculpture Park

A team of Huddersfield-based furniture designers are catching the attention of the art world thanks to their beautifully crafted, dramatic and sculptural pieces.

The Dyehouse, based at Armitage Bridge, West Yorkshire, and founded by Mark Lee – architect, designer and managing partner at ONE17 Architects – have established themselves as one of the premier furniture designers in the region thanks to forging successful relationships with the world renowned Yorkshire Sculpture Park (YSP) and specialist art boutique, Nomad Atelier in Barnsley. Under the guidance of Lee, the Dyehouse designs high-end, bespoke furniture crafted by local artisans from timber, steel and leather. The emphasis of the Dyehouse Collection is on scale, proportion, quality of detail and finish. The resulting pieces have undoubted sculptural presence and it is this dramatic quality that has been recognised by the region's leading exhibition spaces.

One of the Dyehouse Collection's signature sculptural pieces – a large, oak bench weighing over 300kg – was recently installed in the main visitors' centre at the

YSP in West Bretton. YSP is home to many British and International artists, including Henry Moore and Barbara Hepworth, and is currently displaying the first UK exhibition of work by renowned American artist KAWS. Having one of their pieces sit alongside those from established artists is a major coup for the Dyehouse team who have been operating for less than six months, as Lee explains: "I am delighted with how far we have come in such a short space of time," he said. "We set out to design a collection that is not only striking aesthetically, but is also practical and can be used every day. The FALL bench epitomises this. It's dramatic in its size and execution being cut from one piece of timber, but at the end of the day it's a bench and it was designed to be sat on."

A selection of the Dyehouse Collection is also on exhibition at The Nomad Atelier Gallery in The Tobacco Warehouse, Barnsley – one of the region's top art exhibition spaces.

Contact: Dyehouse
Web: www.thedyehouse.com

Winston Churchill Memorial Trust awards fellowships to craftmakers

The Winston Churchill Memorial Trust has awarded Travelling Fellowships to 10 people working in a variety of heritage crafts. The Churchill Fellows will investigate new ideas and examples of best practice in their craft, working towards preserving a healthy and sustainable framework for the future of the industry.

This is the second year of the Trust's partnership with the Heritage Crafts Association and the Carpenters' Company. During this time 20 Fellowships have been awarded, an investment of over £115,000 in British citizens. Past projects include research into cabinetry, ceramics and shoe making. This year's Fellows include Edmund Jacobs, a furniture designer and maker from London, whose Fellowship is supported by the Carpenters' Company. He will be travelling across Europe to explore sustainable manufacturing and design techniques for bespoke furniture. The other Fellowships were awarded to people working in traditional crafts such as medal making, hand engraving, tapestry weaving and instrument making.

Julia Weston, Chief Executive of the Winston Churchill Memorial Trust, said: "Churchill Fellows travel globally and return with innovative ideas and a commitment to sharing their findings to help others in the UK. Our hope is that these Fellowships will strengthen the heritage crafts industry so that sole practitioners and the traditional crafts can continue to thrive".

Contact: Winston Churchill Memorial Trust
Web: www.wcmt.org.uk



Avocado Coffee Table by Edmund Jacobs

PHOTOGRAPH COURTESY OF EDMUND JACOBS

Reiko Kaneko launches her first ever chair design for SCP

At the recent Salone del Mobile in Milan ceramicist Reiko Kaneko launched a number of new products for UK manufacturer SCP, including her first ever chair design. The Orlando Lounge Chair is the result of two years of design and development by Reiko, SCP and their upholstery factory in Suffolk.

This was an ambitious project for Kaneko, a product designer who has mainly focused on fine bone china, terracotta and glassware. She said: "I set out to design a chair with two specific priorities: to be light enough in weight so that it can easily move position, and secondly it must have a superior comfort level and the very best proportions for a lounge/reading chair. I'm not traditionally a ceramicist but have become specialised in its craft. The challenge was mind bending. The results with the upholstery, walnut and tubular steel is a contemporary version of what I grew up with in 1980s Japan".

The chair sits low to the floor, with a small footprint, yet has noticeably generous proportions. The frame is made from both



The Orlando Lounge Chair is the result of a collaboration between Reiko Kaneko and SCP

tubular and solid steel and has a gentle curving detail between the back and arm rests. A small amount of flex in the back of the frame adds to the sitter's comfort. Kaneko's range for SCP also includes pendant lights and ceramic tableware.

Contact: SCP
Web: www.scp.co.uk

Scientists identify first tree to show strong tolerance to ash dieback disease



Ash dieback is a serious threat to trees across Europe

Researchers from a government-backed Consortium of universities and research centres have discovered 'Betty', an 18 metre high tree, which is unusually tolerant to the ash dieback disease; the disease has killed 90% of ash trees in Denmark and is spreading throughout Europe.

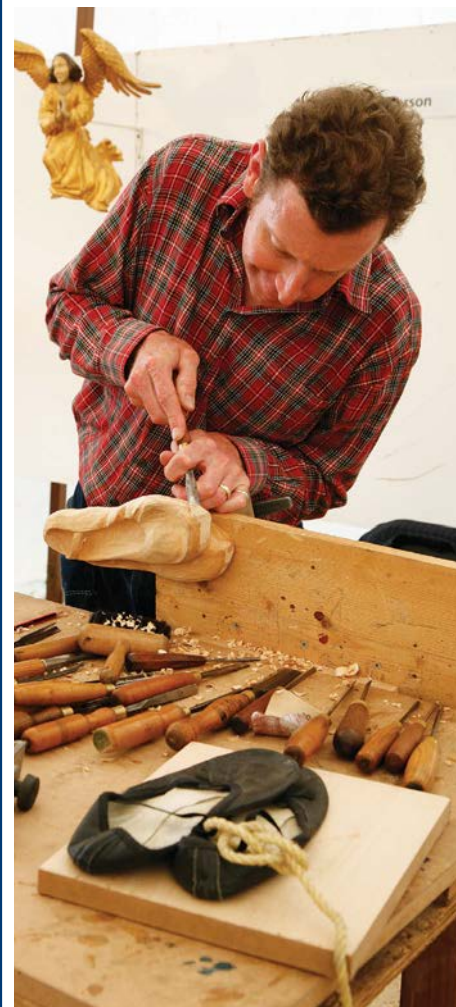
The 200-year-old tree, which was coppiced 50 years ago, is untouched by the fungal disease that has killed half the ash trees in Ashwellthorpe, Norfolk. Ashwellthorpe was the first ancient

woodland in Britain to succumb to ash dieback in 2012.

Lord Gardiner, spokesperson for the Department for Environment, Food and Rural Affairs in the Lords said: "We want to guarantee the graceful ash tree continues to have a place in our environment for centuries to come and this vital work is a major step towards ensuring just that."

'Betty' is offering hope that ash dieback disease will not be as destructive as first feared.

Art in Action to hold final show this July



Andrew Pearson carving at Art in Action 2015

This year's fortieth edition of the Art in Action show will sadly be its last. On 28 April Simon Buchanan, the organiser of Art in Action, announced that the annual show would come to an end due to staff shortages and increased competition from similar events.

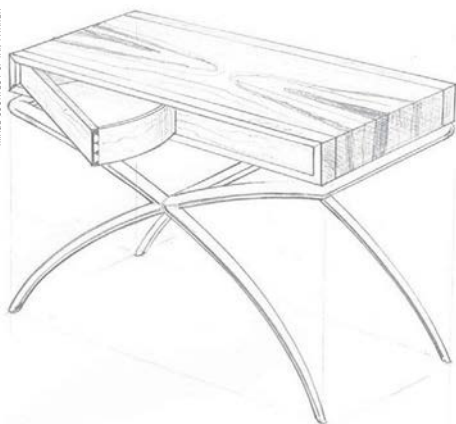
Held in Waterperry House and Gardens in Oxfordshire, Art in Action brings together artists, crafters, performers and musicians to demonstrate their skills and show their work. The event is supported by the School of Economic Science, the charity that owns Waterperry House. In his statement, Buchanan explained that there is still hope for the future: "The School of Economic Science will continue to support the arts and my vision is that Waterperry develop as a centre for the arts in the years to come."

The final show takes place on 14–17 July, 2016 and will feature demonstrations of crafts such as woodworking, sculpture and metalwork, as well as hosting a market.

Contact: Art in Action
Web: www.artinaction.org.uk

Events

IMAGE COURTESY OF IAN PARKER



The Ian Parker Furniture School offers seven project-based courses

Open days at Ian Parker Furniture School

The Ian Parker Furniture School is opening its workshop to the public on 25 and 26 June, 2016. Doors will be open on both days from 10a.m. until 3p.m. On display will be a selection of pieces from a range of seven project-based courses each designed for a specific skill level, be it absolute beginners up to the more advanced student. Each project increases in complexity from the previous, with particular emphasis placed on hand skills.

This is a great opportunity to meet and discuss your ideas with Ian and view the workshop and other facilities.

When: 25–26 June, 2016

Where: Unit 2, Plumyfeather Farm, Lye Green, East Sussex TN6 1UX

Web: www.ianparkerfurniture.co.uk

PHOTOGRAPH COURTESY OF NEW DESIGNERS



Turner Chair by Charles Dedman

New Designers Part 1 and Part 2

The annual showcase of fresh design talent returns to the Business Design Centre in London this summer. Over 3,000 of the most promising graduate talents from Britain's leading design courses will be exhibiting. The show features everything from illustration to animation, furniture to fashion, and gaming to glass. The 'One Year On' feature presents young, entrepreneurial designers who are in their first year of business.

Young furniture designers to look out for at this year's event include Francesca Rossi and Charles Dedman.

When: Part 1, 29 June–2 July, 2016; Part 2, 6–9 July, 2016

Where: Business Design Centre, 52 Upper Street, London N1 0QH

Web: www.newdesigners.com

PHOTOGRAPH BY TONY WHITE ART PHOTOGRAPHY



S Chair by Tom Dixon, 1988

Inside Out: Furniture from the Crafts Council Collection

Inside Out is a partnership exhibition with Platform Gallery at Habitat and features 24 pieces from the Crafts Council Collection representing significant makers spanning four decades. The earliest piece is Chair by Alan Peters OBE made in 1978 and the most recent is Sarah Kay's Helga chair from 2007 with work by Richard La-Trobe Bateman, Floris van den Broeke, Tom Dixon, Tomoko Azumi and Wales & Wales representing furniture through the 80s, 90s and the 2000s. Visitors will gain a unique insight into the featured pieces and their makers through accompanying archival material, maquettes and drawings, film and oral histories courtesy of the British Library's National Life Stories Crafts Lives project.

When: ends 9 July, 2016

Where: Platform Gallery, Station Road, Clitheroe, Lancashire BB7 2JT

Web: www.craftscouncil.org.uk

Courses

As this is our 'finishing' issue, we've brought together some excellent courses that will help you perfect your finishing skills.

Wood finishing at Robinson House Studio

This course is ideal for anyone wanting to know more about the finishing process. Students produce samples of all the finishes in oak, walnut, cherry, maple, sapele, as well as learning about sanding, scraping, raising wood grain, wood stains, wood bleaching, UV protection, oils, waxing, brushing and ebonising.

Course dates: 10–11 September, 2016

Contact: www.marcfish.co.uk

Wood finishing weekend at Chris Tribe Furniture

On this course you will find out how to get a perfect surface that will give you a perfect finish, and then how to apply the appropriate finish to give the best results.

Course dates: 15–16 October, 2016

Contact:

www.christribefurniturecourses.com

French polishing and re-finishing at Peter Sefton Furniture School

The emphasis of this course is on the use of traditional French polishes and stains and 'touching-in' techniques, including the selection and use of finishing materials.

Course dates: 22 & 29 October, 2016

Contact:

www.peterseftonfurnitureschool.com

French polishing at Robinson House Studio

Derek Jones demystifies the art of French polishing. To see what all the fuss is about and add this skill to your finishing repertoire, join Derek at Robinson House Studio this October to get acquainted with the King of Finishes.

Course dates: 22–23 October, 2016

Contact: derek@lowfatroubo.co.uk

Modern hand finishes at John Lloyd Furniture School

Students will learn hand finishing using mainly traditional materials, but with an up-to-date slant. All aspects of finishing wood will be covered, from the initial preparation, to final waxing.

Course dates: 24–28 October, 2016

Contact: www.johnlloydfinefurniture.co.uk



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Editor's round-up...

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

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

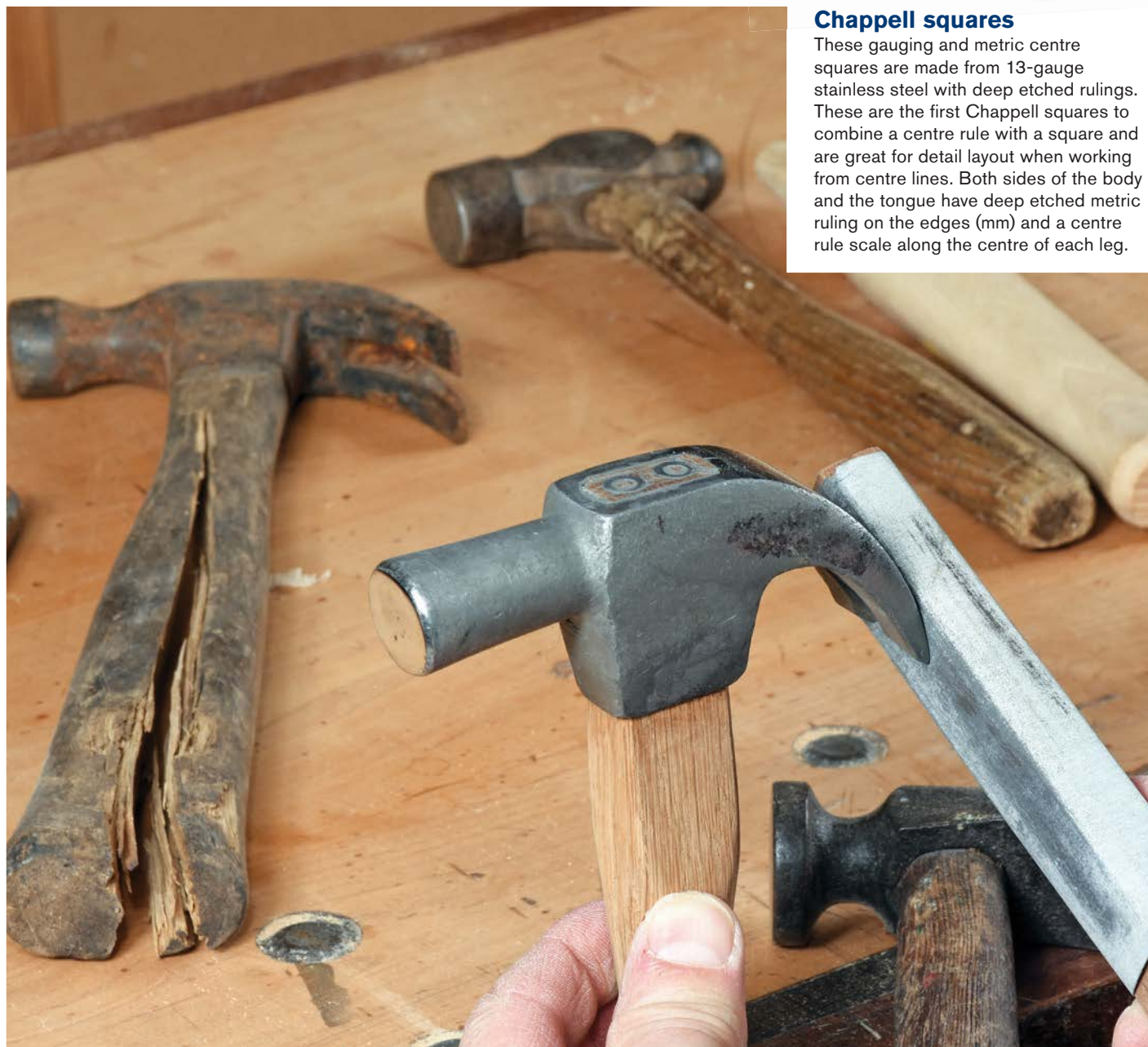
Just how some of the tools that pass over my bench in the course of the month find themselves to be in such a sorry state baffles me sometimes. I mean hammers are generally made of pretty stern stuff and if you have one with a traditional hickory handle it's virtually indestructible right? As long as it's being used as it was intended that is. My re-handling session took up an entire afternoon but should see me through to the

end of my nail banging career, which isn't a bad return. This sort of instinctive arithmetic is second nature to tool users as we grow our collections. The day of reckoning being the day we can honestly say, "No. I'm done. There isn't anything else I need." If you've reached that point already, feel free to skip the next couple of pages, they'll only tempt you to go back on your word but if you're not quite there yet then read on.



Chappell squares

These gauging and metric centre squares are made from 13-gauge stainless steel with deep etched rulings. These are the first Chappell squares to combine a centre rule with a square and are great for detail layout when working from centre lines. Both sides of the body and the tongue have deep etched metric ruling on the edges (mm) and a centre rule scale along the centre of each leg.



PHOTOGRAPH BY GUY/DEREK JONES

MINI TEST: Mirka DEROS 650CV

When you think of Mirka you think of abrasives, and if you're a regular user you'll associate the name with Abranet. So with an abrasive product that's arguably the benchmark for safe and efficient power sanding it stands to reason that the same company would produce an equally sophisticated range of machines with which to use them. The DEROS 650CV (Direct Electric Random Orbital Sander) is the sort of lightweight palm sander that once upon a time had to be linked to a separate transformer. Thankfully though, technology and innovation have made that rather clunky configuration a thing of the past. And as the workshops of the world slowly adjust to the idea that sanding with effective extraction is no longer an inconvenience we're seeing more machines like it on the market. Physically smaller and more efficient motors like the brushless one in the DEROS 650CV result in quieter machines that are more comfortable to use for a number of reasons. At just 1kg the DEROS 650CV falls right into this category and is suitable for use on surfaces

other than those that are horizontal.

The 5mm orbit on this machine means it will remove material quickly and convert nicely to a buffer/polisher with the appropriate backing pad and abrasive. A paddle switch is a common feature on these machines adding to their general ergonomic appeal. An isolating push button switch prevents the machine from accidental start-ups. A range of pre-set speeds between 4000 and 10000rpm can be selected from a pair of plus and minus blister style buttons. Each push adjusts the speed by 1000rpm. Gloved users will appreciate this feature.

The maximum size of backing pad for the DEROS 650CV is 150mm dia. although a 125mm diameter one can be used effectively reducing the peripheral speed at the edge of the sanding disk and affording better contact or access during specific tasks. Extraction via the 22mm diameter (internal) port is about as good as you'll ever get when hooked up to a suitable extractor. Faced with the prospect of sanding for any prolonged period of time I'd be quite happy to have the DEROS 650CV on side.



PHOTOGRAPH BY GARY DREXEL JONES

PS315 panel saw



The Axminster Trade PS315 Panel Saw has been designed for the small trade workshop or keen home furniture maker. The saw features a high torque 2.8kW input induction motor, a deep section cast-iron table, fully welded heavy gauge steel chassis and a cast-iron rip fence holder. The good sized cast-iron main table is fitted with a

cast-iron extension table making a combined surface of 820 x 800mm, plus a further steel plate extension gives a total working surface of 1260 x 800mm. It is supplied with a 315mm Axcaliber TCT fine cut main blade, split scoring blade, a rear feed-off table, small mitre fence, an edge shoe and table support legs.



Bosch multi-cutters

Bosch recently introduced five new professional multi-cutters, all equipped with the Starlock accessory mounting system. The new range includes three corded tools and two cordless, the GOP 18V-28 Professional and GOP 10.8V-28 Professional. The 'snap-in' Starlock system is a uniform standard mounting system, which allows users to snap accessories quickly and easily onto their oscillating power tools. If you regularly find yourself on site working in tight spaces or just generally multi-tasking across trades a reliable multi-tool is a must.



JSS-16A Scroll Saw

Fitted with a powerful DC motor, this variable speed (550-1600/min) scroll saw can cut a wide variety of materials up to 50mm deep. The two blade arms are independently pivoted giving a straight up-and-down motion to the blade for better quality cut. The saw is supplied

with five pinned end blades, but will also accept plain end blades. A quick release tension knob makes for a quick and tool-less change. A flexible line blower helps to keep the cutting line clear of waste material and easily seen. The heavy cast-iron base gives stability and ensures low vibration.

UJK Technology Parf Guide System



The Parf Guide System (PGS) provides an infallible method of making a track saw cutting station on site in less than 30 minutes. With the PGS, you will be able to make a custom bench top or portable cutting board whenever the need arises. The PGS uses two Parf sticks along with a 3mm drill guide and 3mm drill bit to create an accurately placed series of holes with the rows at perfect right angles to the columns. Then the guide block and the special 20mm bit come into play to produce the final pattern of 20mm holes.



Gorilla Gripper

The Gorilla Gripper has been designed to grip, lift and carry large sheets of material from the top, so no more bending or lifting using your back and risking trapped fingers. The Gorilla Gripper potentially turns a two man job into a one man one. In short it's a safer way to carry all manner of sheet materials including plasterboard, MDF, plywood, hardboard and aluminium.



Star-M HSS Screw Drill & Plug Cutter Set

A combined taper drill, countersink and counterbore creates the perfect starter hole for screws in a single pass. You can alter the shank length with the included Allen key and then simply drill to the appropriate depth depending on whether you want the screw proud, flush or sunk below the surface. The matched plug cutter produces an accurate, concentric plug that fits the counterbored hole perfectly. This version features top-spec Japanese high speed steel.

Contacts

Bosch multi-cutters

Contact: Bosch
Tel: 018772 672 499
Web: www.boschtools.com

Chappell squares

Contact: Classic Hand Tools
Tel: 01473 784 983
Web: www.classichandtools.com

DEROS 650CV

Contact: Mirka
Tel: 01908 866 100
Web: www.mirka.com/uk

Gorilla Gripper

Contact: Ironmongery Direct
Tel: 0808 168 28 28
Web: www.ironmongerydirect.com

JSS-16A Scroll Saw

Contact: BriMarc
Tel: 03332 406967
Web: www.brimarc.com

PS315 panel saw

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

Star-M HSS Screw Drill & Plug Cutter Set

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

UJK Technology Parf Guide System

Contact: Axminster Tools & Machinery
Tel: 0800 371822
Web: www.axminster.co.uk



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Clarke CON750*	750W	80/10mm	£24.98	£29.99
Bosch PS1700E*	500W	70/4mm	£44.98	£53.98
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Driving the rebirth of the hand tool industry: An interview with Thomas Lie-Nielsen

Anne Briggs Bohnett meets the man who helped kick-start the hand tool revival

Few people have had a larger hand in the renaissance of hand tool woodworking than Thomas Lie-Nielsen. A self-starter, Thomas has worn many hats in his day – from the earth farmer, dad, wine store owner to, more recently, the maker of some of the finest hand tools on the market. When Stanley, Union, Disston and the other big-name tool makers stopped making quality tools in the 1950s, and as power tools became increasingly popular, hand tool woodworking teetered on the brink of extinction. The disappearance of quality tools from the market made the tradition of hand tool woodworking increasingly hard to perpetuate.

Figuring things out

I asked Tom if he'd ever planned to grow his company this large or whether he'd set out with the intention of inspiring a rebirth in the hand tool industry, but he told me that he started making tools simply because he found the process to be really fun. After he'd seen some success, however, some bigger dreams began to percolate.

"One of my biggest influences early on was in my father's boat building shop. They used mostly traditional techniques. The people who worked there had been doing it forever, and they could make just about anything. Most of the things that went into the boats were fashioned right there. These were the people who didn't run to the hardware store for anything. I visited my dad's friend Francis Herreshoff when I was 16. He rummaged around in his drawings and pulled out a few blueprints he'd made and gave them to me. 'Study these and you'll learn everything you need to know,' Herreshoff said: 'you don't need to go to school to learn, you just need to learn. Immerse yourself in the subject and learn everything about it by doing it.' So I did. I studied the plans and spent lots of time in both his and my dad's shop." The yachts of that time featured a lot of bronze, lots of wood and other materials in their natural state, function and beauty married perfectly. I think those early influences are very apparent in Lie-Nielsen tools even today – function and beauty. Tom told me one of his favourite toolmakers says, "95% of the time,

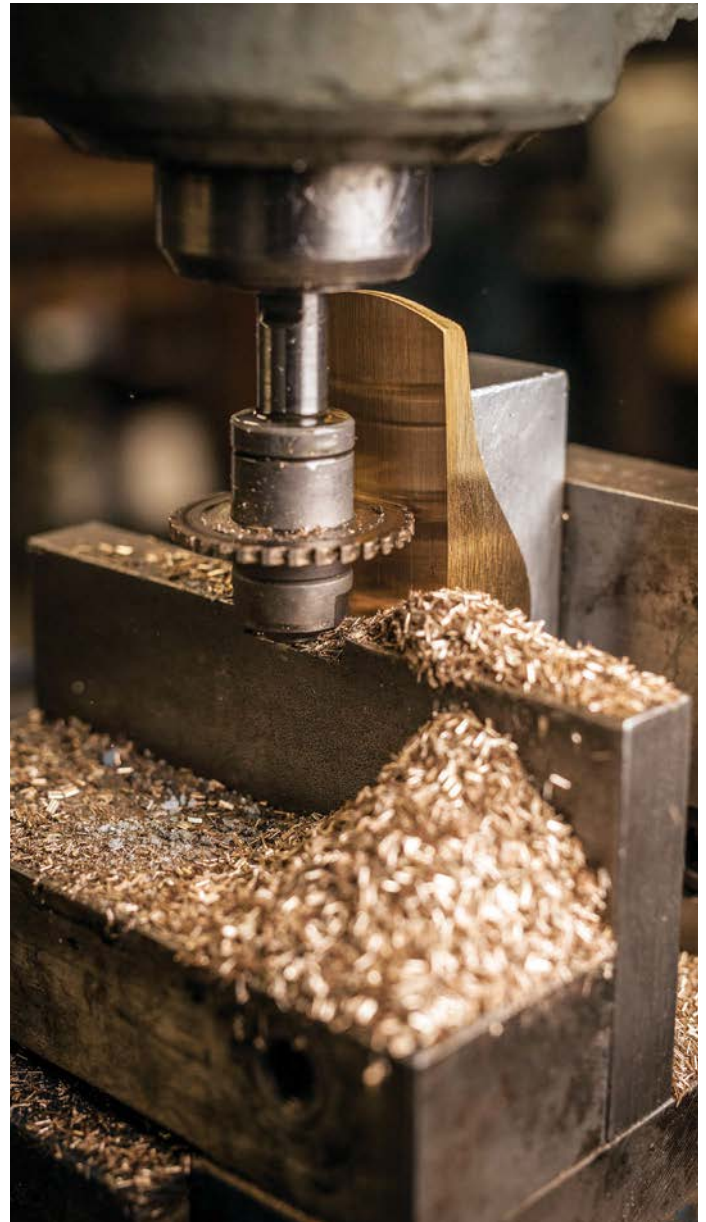
the tool is sitting on a shelf, so it should be beautiful. Looking at it should inspire you." The quality of Tom's tools are an outpouring of his character – his focus, his attention to detail and the fact that he has been involved in literally every aspect of the business from bookkeeping to machining to casting to woodworking to catalogue design from day one. "Things were really different back then, I loved figuring things out as I went, there was no Google. I started with the bronze edge plane, then did the low angle block plane, then the skew block plane and finally the beading tool. No one was making any of those tools back then. Unless you knew a collector or were part of a collecting group, it was impossible to find rare tools. And the collectors were driving up the prices. I felt that people should be able to get their hands on tools that worked the way they should. I wanted to learn how to do everything myself. The first five years or so I was making tools, it was more like an apprenticeship. I outsourced almost everything at first, I worked with a one-man foundry to learn casting, then I learned pattern making and the woodworking came last."



Lie-Nielsen drawknives



Winters in Maine make the summers sweeter!



A bronze plane in the making

Growing the business

Tom and I talked a lot about how well farming and woodwork go hand in hand. "Gardening is very similar to woodwork – creating things, making things, watching things grow. They cater to the same interest. I like making things myself, growing my own food, I love experimenting, seeing what works, what doesn't, what you can do better and more efficiently. Composting, feeding the earth, and helping it feed you. Today I still garden a lot. I heat my house with wood, I like the farm mentality. My tool business was born in my 'back to the land' days. We were in an old farmhouse [he told me, chuckling, 'the place was a dump'], we were doing everything ourselves, growing our own food, selling milk and blueberries. We didn't have any financial pressures – no mortgage, no kids – and, farm chores aside, I could devote myself fully to the business. A while back, I'd worked for Garrett Wade,

a company in New York that had a beautiful catalogue and did everything by mail order. That gave me the idea that I could make a living selling things from a rural area. I published my first catalogue (with three tools in it). I started advertising in *Fine Woodworking* magazine, then one day, while I was raking blueberries, I got a phone call from them and they ended up doing a little feature on me.

"At the time, there were a few other boutique toolmakers, but they all eventually failed. My end goal was to be able to make a living, make tools and supply them to people who needed them. After the divorce and leaving the farm, I got the space that I'm in now (six years into the business, in 1989) and I started to devote myself more and more to the business. I bought my first big milling machine and hired my first helper. After I'd gotten my first CNC machine, we made the No. 62 Low Angle Jack plane. This

is my favourite tool. It's the thing I'm most proud of, and at the time it was revolutionary. It works so much better than the original, which was a good idea that just didn't pan out for Stanley. Around this same time, by happy accident, I discovered ductile iron. Cast iron gets really hard in thin areas, so I had been having problems milling it. Some guys at the foundry suggested ductile, so we cast some ductile planes and they machined beautifully, so then I got to test them. I would make plane bodies and then beat them with a sledgehammer. It was unbreakable, and totally awesome. Bronze is the same way. There were a few things that really set the Toolworks apart from the beginning. I like weight, I like thicker castings, thick blades were a thing I started right off the get-go. I also wanted them harder than the old carbon steel blades, I started with 60 points on the Rockwell scale, several points harder than anything else out there at the time."



Lie-Nielsen tools are the definition of function and beauty

Quality tools

Tom's early tools made quite a stir. His beautiful tools with quality machining, thick blades, and thicker castings set the stage for a major comeback for hand tools. Tom has never been much of a marketer, he is confident that the tools will sell themselves. And they have. He puts out a beautiful catalogue and hosts Hand Tool Events all over the USA so people can learn about hand tools, ask questions and try every tool Lie-Nielsen makes. Tom is famous for taking his time to perfect every tool before releasing it. The newly released honing guide was five years in the making. The much anticipated plough plane he is currently working on has had a similar time-frame. Collectors and users alike anxiously await every new move Tom makes. Something I've come to find really interesting is the progression that happens in the mind of so



Tom speaking at his annual Open House last July

many people when first exposed to Lie-Nielsen tools. First it's: "How can someone charge so much money for one tool?!". Then, after getting their hands on the tools, experiencing the bliss of using a well tuned, expertly designed and

machined tool made in small scale batches in the USA, it's: "How does he charge so little for his tools?!". An interesting thing someone recently pointed out to me is that Tom hasn't raised the prices of his tools in 10 years.



A lesson in throwing axes



Proper form



I couldn't even hit the target!



Proper follow through

Learning in the internet age

When I'm interviewing someone, I always like to ask if they have any advice for up-and-comers in their field. It's been 35 years since Tom got started making tools for the woodworking industry, and everything, literally everything, has changed for us youngsters in woodwork. We now have Google. The entire world is at our fingertips. We have instant exposure to every aspect of every craft. Thanks in large part to Thomas Lie-Nielsen and those like him, we today have the luxury of buying fine tools geared to tackle niche tasks in every area of the workshop. When it comes to learning of a new aspect of the

woodworking craft, be it lathe work, timber framing, chair making, bench building, cutting fine joinery, spoon carving, bush craft, or now even light blacksmithing and tool making, then instantly jumping in with both feet, I am the worst possible offender. I love dipping my toes into new ponds, but I also know that I already have spread myself far too thin. In 10 lifetimes, there is no way I will be able to master all of those aspects of the woodworking craft, especially not in tandem with my equally thinly spread pursuits into farming. The calibre of work Tom produces is the direct result of a slow, focused journey with a

clear end in sight. "Because there was no Google, I was never exposed to a new process or skillset before I'd mastered the one I was currently focusing on. I had the luxury of learning tasks one at a time and I wasn't ever being pushed by the market. I didn't have the exposure or the temptation to get in over my head – I learned each skill and then I moved on to the next thing." In today's world of instant gratification, I think we all have a lot to learn from Tom – if you want to be the best, you have to start small, grow slowly, and learn new skills only with the focused intent to master them.

The future of Lie-Nielsen

Of course, before we hung up, I had to ask Tom about the evolution of his company and what's next for Lie-Nielsen. He told me that the next hole in the market he intends to fill is joinery planes ... and also a really nice mitre box. "I used to make the tools myself, I did everything myself, but now I use other people's hands to make the tools, but I get a whole lot more done that way. Seeing the

Toolworks today, the organism, the growing living thing that it is, is a wonderful thing."

Lie-Nielsen Toolworks has an open house at their facilities in Maine every summer, and with their 35th anniversary this year's celebration promises to be even better than normal. If you're looking for a reason to tour beautiful Warren, Maine this summer, a better excuse can't be found. *F&C*

Lie-Nielsen Toolworks

The 35th-anniversary Summer Open House takes place at Lie-Nielsen's headquarters in Warren, Maine on 8–9 July, 2016.

For details of this and other Lie-Nielsen events, see the website. Web: www.lie-nielsen.com



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**From commission to delivery,
Richard Warmisham covers some of
the techniques used in this tricky build**

Building Le bureau de l'agent console desk

PHOTOGRAPHS COURTESY OF COSTAS MICHALIA



Leg assembly with Macbook Air

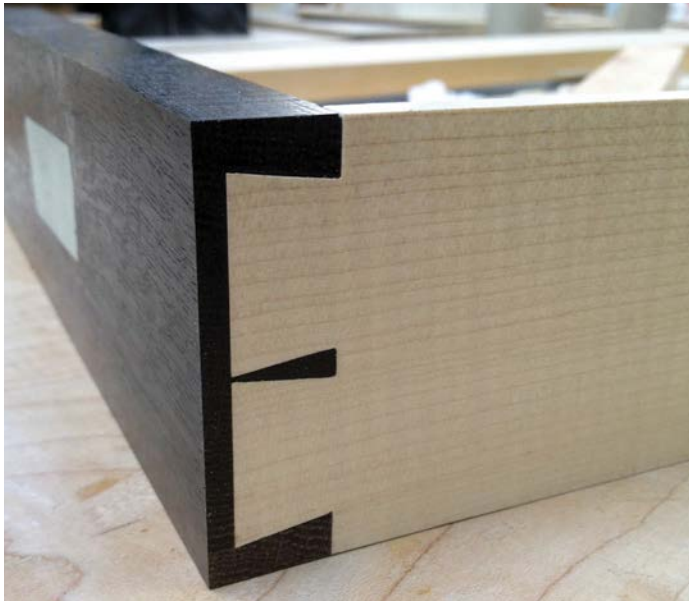
Le bureau de l'agent is the result of a very specific brief from our client. From our initial discussions, we were commissioned to design a slim, elegant console style desk. The desk would need to fulfil several functions. Space was required to store several laptops, an iPad, some peripherals and accessories, camera equipment as well as the usual pens, notebooks and paper. In addition, the client requested that the laptops needed to be stored out of sight. Size was a critical issue too and our design had to fit a specific space and should be no longer than 120cm. If that were not enough, also on our client's wish list was a facility for built-in charging points for his numerous Apple devices.

As with all commissions, a brainstorming session ensued with much sketching and

lots of questions to resolve. Made by 68° was recently joined by award-winning designer Costas Michalia and his input was immediate. It didn't take us long to decide on materials or style. The design reflects our love of Art Deco, but with a nod to modernity. We wanted restrained and understated elegance while also being tactile and inviting user interaction. The addition of a leather desk surface pays homage to all good writing desks. We soon realised that the leather should be extended past the working area of the desk extending down the legs. Each storage area inclusive of the drawers was also lined in leather. This added a sumptuous texture and a much more forgiving surface for all the devices stored.

We presented our thinking to the client and were swiftly given the go-ahead. ►

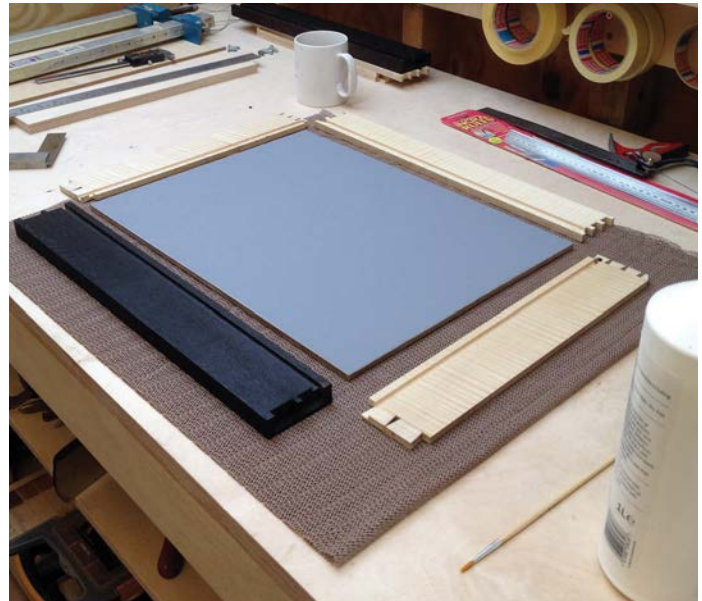
Material selection



Half-blind dovetailed drawers

The materials chosen for the desk were fumed oak veneer, full grain leather, aluminium, bog oak and rippled sycamore. The carcass and legs were constructed from 15mm birch ply. When constructing the carcass I tapered the sides to allow for a slightly larger interior space towards the back. This was to ensure the piston fit drawers did not tighten up as the drawers were slid into position. Each drawer opening is designed to be approximately 0.5mm bigger in both height and width at the back.

The drawers were traditional in construction, featuring fine half-blind dovetails at the front, with solid bog oak fronts and false fronts.



Drawer components laid out ready for assembly

Rippled sycamore was used for the sides and back. The base is made from 6mm veneered MDF, the interior surface is leather lined.

One key area often overlooked by many designers and craftsmen is scale. Does the design, the shape of the piece fit in with its natural scale? We spend a huge amount of time debating the thickness, depth and curves. In fact we do this for every piece we make no matter the size or value. Every object, be it a chair, accessory or indeed an exquisite bespoke desk has a natural rhythm, a natural mass. Finding that rhythm and incorporating it into the design and functionality of the piece is the ultimate objective at Made By 68°.

Leather work

The leather work required special thinking. We had designed curved doors for the secret compartments and they needed to be clad both externally and internally with full grain leather. We didn't want to stitch the hide so all junctions and edges had to be invisible. The process was rather like tailoring. We knew that the success of this piece would depend on the quality of the leatherwork.

Special attention was given to the intersections between leather, wood and aluminium. The leather needed to flow naturally, the shadow detailing, joins and edges required precise craftsmanship.

The leatherwork on the desk is a true testament to the time, effort and quality Made By 68° aim for. Each angle, each fold, each layer is meticulously matched and then

finished, creating an object one wants to engage with and touch. We used a combination of contact adhesive and PVA. The contact adhesive provides immediate grab, which is useful for the tricky concealed folds. PVA was used for the larger expanses, it is not only easy to apply with a roller, but also has plenty of open time and allows for repositioning.



Edges of leather are carefully wrapped and glued into rebates with contact adhesive



Detail shot showing leather and metalwork junctions



Leather cladding for the door panels

Metalwork



The metalwork shooting jig is used to produce crisp and flat polished surfaces

Aluminium was chosen for use as handles as it is not only easy to machine in the workshop, but it can also be polished to a very high grit. Pieces of L-section aluminium were utilised for the door handles and trim for the door shuts. Flat section was used for the two drawer handles. All the components were cut slightly oversize to width on the chopsaw to allow for sanding and polishing.



Before and after shot of door handle

The tablesaw was used to rip the aluminium section to size. Screw holes were drilled on the pillar drill and then countersunk. Using the sanding linisher I set the fence at 45° and took the corners off the door handles.

All the components were then progressively sanded on an adapted shooting board to ensure crisp and flat surfaces. I worked through the grits starting with 180, 240, 400, 500 and



Metalwork in place on the finished desk

then moving on to wet and dry 1000–2500. At each change of grit the component was rotated 90° and sanded until the scratch marks from the previous grit disappeared. I then moved on to Abralon pads up to 4000 grit and finished using compound pastes to achieve a very high level of sheen. This process, although very time-consuming, was essential as all the metalwork is extremely visible.

Former making

Two formers were required for this project. The first was for making the curved lippings for the legs. The second was needed to create the doors to the secret compartments. In each case I used a laser cutter to produce a full sized template in birch-ply. These master templates were then used to rout 18mm MDF components,

which were glued together.

Curved lippings were required for all four legs. I calculated that they needed to be at least 4mm thick and approximately 17mm wide as they would be glued onto the 15mm birch ply. In order to minimise glue-ups, the former was made wide enough to produce one component that could be ripped down

on the bandsaw. Seven layers of fumed oak veneer were glued up using epoxy resin and placed in the vacuum bag.

18mm MDF was used to create the door former and it was made large enough to allow for two components to be made per glue-up. The former was covered in brown packing tape and marked with a datum.



Leg panel is held in the pattern maker's vice while the lipping is flushed off



Lipping is removed from its former



Door former in vacuum bag

Doors and hinges

Each door is made from two components. This was to allow for the concealing of leather edges. Three layers of skin-ply are glued up using epoxy resin. Rebates were created to allow the leather to be wrapped around the edges. The skin-ply was screwed onto the former to prevent the layers sliding around. The former and doors were placed in

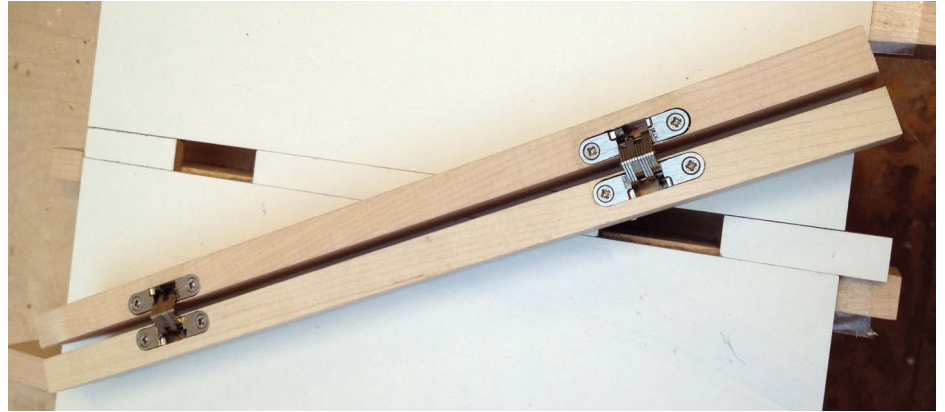
a vacuum bag and ratchet straps were used to provide additional clamping pressure.

It was imperative that there was no visual clue to the presence of the hidden storage doors. Tiny Soss 101 concealed hinges were used to allow the doors to be opened 180°. A simple router jig was made using some scrap 6mm MDF. Using a template

offset calculator (www.diywardrobes.co.uk/documents/templateoffset) I worked out what the offset should be and created two identical openings evenly spaced apart. This was then used to cut the hinge holes in both the doors and rails. Using a guide bush and a 9.5mm twin flute router bit, I achieved a very snug fit.



Interior curved door component being clad with leather



Test cutting hinges with the router jig

When things go wrong ...

As a relatively new maker things don't always go to plan. I had much veneering to do on this project and at times the fumed oak was a challenge. It is very open grained and can be fragile at the edges. Towards the end of the build I noticed I had a problem with glue seeping through on one of the front legs. I had been using Titebond Original and had applied it with a serrated scraper. I now know that too much glue had been applied, and under clamping pressure it had pushed through the surface leaving awful yellow streaks. It was impossible to remove with a scalpel so I decided drastic action was required. The only solution was to remove the veneer and apply a new leaf.

Using 18mm ply, I made a large and stable base for the router.

Two pieces of 18mm MDF were cut to size and clamped either side of the leg. The edges of the MDF were then levelled using a Vernier gauge to ensure a consistent distance was maintained over the entire leg. This was imperative as these edges functioned as a sledge for the router base to run along.

In order to get the depth of cut accurate, I made an identical but smaller setup of the leg on my bench. I used this to accurately set up the router to create the exact depth of cut, this would ensure the newly veneered surface would be flush with the fan arranged veneers at the top of the leg. Like all these things, setting up, making jigs and testing took far longer than the 10 minutes it took to remove the glue damaged veneer!



MDF panels clamped to leg



Preparing to remove the veneered surface on the front leg



Removing the damaged veneer from the front leg

The integrated charging points

A key facet to the design and build of the desk was the need to store and charge several devices. Consideration was given not only to the cable route through the desk and how each device would charge, but also the air flow around each device as it charged.

The desk would be positioned on top of a floor socket allowing the main power cable to run up inside the leg and end at the base of the storage area. The laptop charger is

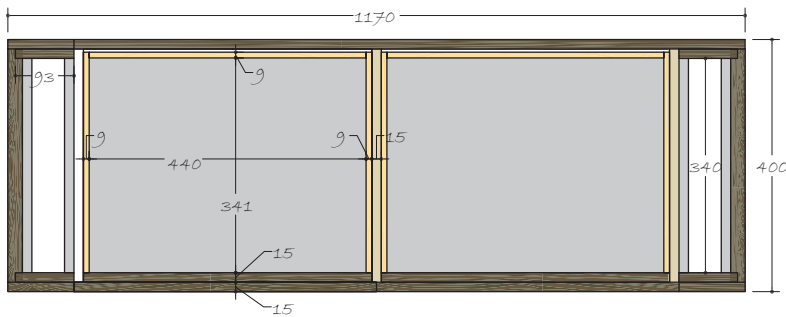
stowed beneath the storage compartment to keep the heat source away from the electrical items. In addition USB charging cables are routed into the base of the storage area.

The other leg and storage pod incorporates a simple box so that the camera battery would be on charge when needed. The light grey leather within the storage pod also made identifying cables and devices much easier as the bright surfaces reflected

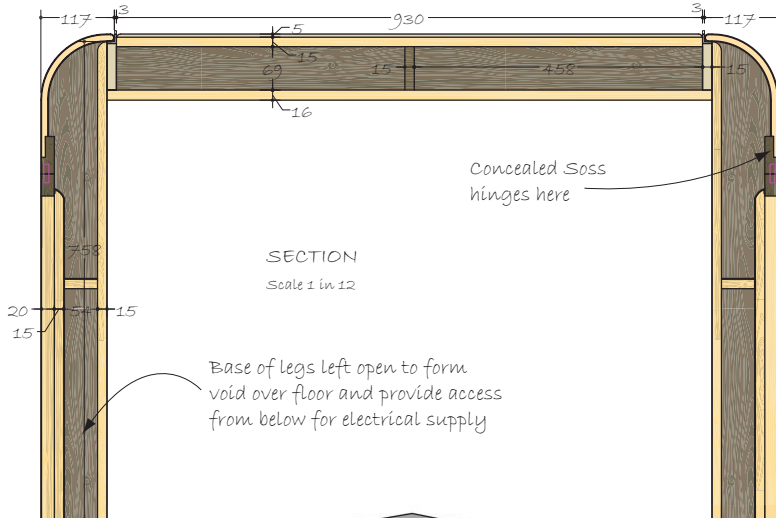
the ambient light to illuminate the base of the compartment.

Wood used

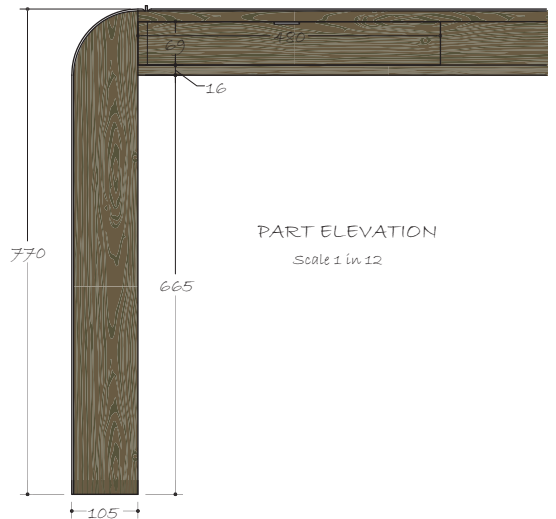
Oak (*Quercus robur*) veneer
Bog oak
Sycamore (*Acer pseudoplatanus*)
Birch (*Betula* spp.) ply



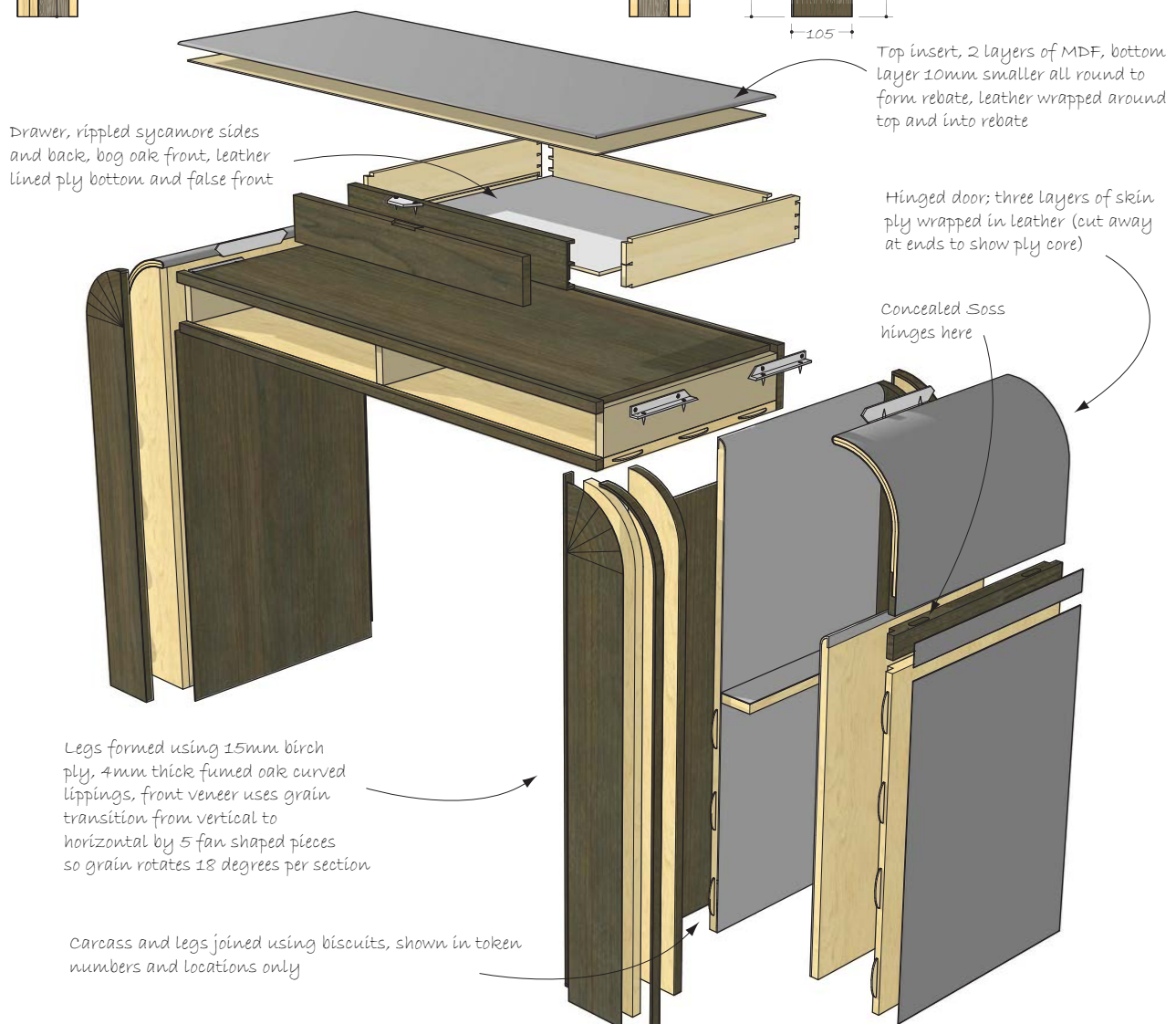
SECTION
Scale 1 in 12



SECTION
Scale 1 in 12



PART ELEVATION
Scale 1 in 12

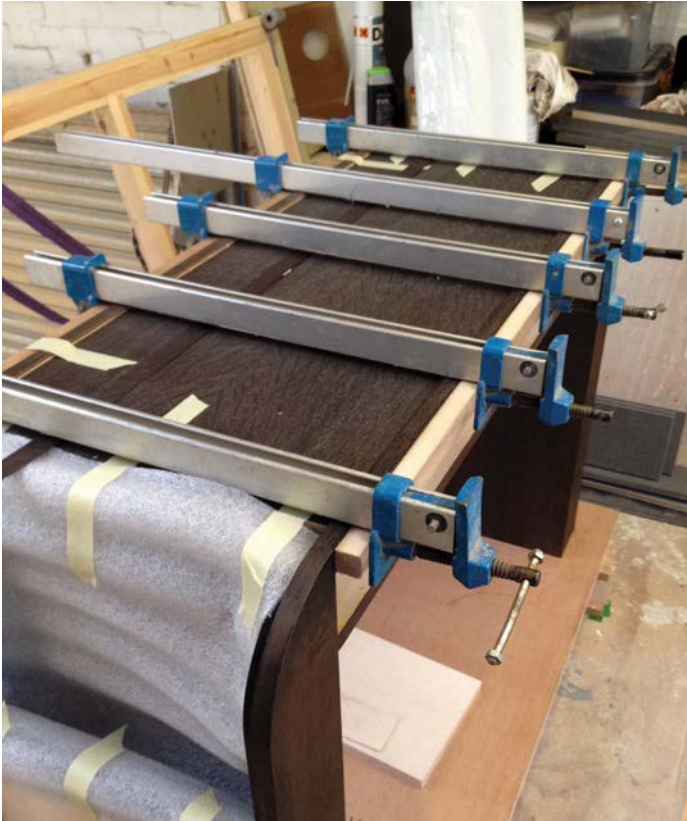


Veneering

I wanted a smooth grain transition from the top of the legs to the drawer fronts and decided on a fan effect. I split the 90° into five pieces. Using a very sharp No.10 scalpel blade I carefully cut five 18° triangular pieces of fumed oak veneer and taped them together. They were then glued into position on the legs.

For the top of the desk, I needed to create a central recess for the leather pad to sit into. I routed 15mm wide rebates across both

edges of the top surface. Into this I glued strips of 6mm MDF. This provided a space of 4mm for the leather pad to sit in. Next I veneered the front edge. And finally, once the legs were attached, two strips of book-matched veneers were applied across the top of the desk and down each leg edge, this was done for aesthetics as well as covering the leg/carcass joint.



Veneering the top front edge of the carcass



Detail shot showing the fan arranged veneers

Richard Warmisham

Richard was a former political researcher in the House of Commons. In 2013, he left his career in Westminster to pursue a long-held desire to make and design furniture. He signed up to study fine-furniture making and design at Robinson House Studio. Richard relocated to the south coast and spent the next year and a half training under the watchful eye of Marc Fish. During this period, he gained much knowledge, honed his hand-skills and developed a visual language and style using colour and mixed materials. During the course he established Made by 68° and his final student piece, the Pop/Deco chest of drawers, won many admirers and even made the front cover of Cheltenham's 2015 CCD exhibition catalogue. *F&C*
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A selection of 18th-century technical treatises. While Roubo's is the most complete treatise published during the 18th century, many of Roubo's entries originate from other contemporary and older publications. Roubo was the son of a carpenter and did not have first-hand experience of all the techniques and materials he described

Historical furniture finishes – the wax polissoir

Yannick Chastang investigates 18th-century finishing techniques

The publication of the English translation of A.J. Roubo's technical treatise on cabinetmaking (*To Make as Perfectly as Possible* published by Lost Art Press in 2013) has sparked considerable interest in 18th-century furniture techniques. His encyclopaedic volume has led to the rediscovery of many long forgotten techniques and recipes and woodworkers around the world are currently carrying out practical experiments to test Roubo's practices. As part of this global inquiry, furniture finishes have attracted a lot of interest¹. However, our understanding of historical finishes is still clouded by myths and misunderstandings. Yannick Chastang has had a head start on many of his English speaking counterparts having had access to Roubo in its original French for the past 20 years. He has been researching and experimenting with original recipes, from Roubo and from other 17th- and



The study of varnishes used by Stradivarius also helps with the understanding of furniture varnish

18th-century woodworkers with a particular interest in wax finishes. Wax finish has, for a long time, been a favoured option for both makers and conservators and its application using the little known 'polissoir' provides an insight into 18th-century finishing techniques.

Myths and realities

Our understanding of historical finishes is

still very patchy and is based on a variety of incomplete historical sources. Material identification, using some of the latest scientific analyses,² is slowly helping to fill the gaps in our knowledge but very few pieces of furniture, if any, have retained their original finish meaning an absence of viable

1 On 14 and 15 November 2014, a two-day seminar was organised by Stichting Ebenist in Amsterdam. Proceedings, published in 2015, on www.ebenist.org

2 Materials identification is typically done using cross section, gas or liquid chromatography.

samples for analysis. The effects of time and regular restoration have destroyed most original finishes. If, by chance, an original finish has survived it's unlikely to be intact; regular dusting, cleaning and natural ageing and drying out of the materials (often referred to as cross linking) would, at best, have resulted in the loss of original transparency, colour and gloss; at worst, the finish will have perished entirely. Even on the highly prized musical instruments made by Stradivarius, many of the finish surfaces have either degraded or been replaced. Great mystique still surrounds the sound quality of Stradivarius's instruments, which is supposedly linked to his unique choice of finish; essentially an oil-based resin varnish. Unlike musical instruments, furniture's original finish was far less valued and was deemed to have the practical purpose of enhancing the wood and protecting the surface. Furniture finishes were regularly renewed, either because they had degraded or as part of a repair of the piece as a whole.

A lack of reliable evidence therefore has meant that the true nature of 18th-century

furniture finish is still the subject of debate. Two schools of thought have emerged in recent years: one believing that most pieces of furniture were finished with wax, the other advocating the popularity of a resin-based hard finish (French polish). Both options were available during the 18th century and Roubo and his contemporaries³ accurately describe many of the available techniques. Ancient treatises suggest that a wax finish was favoured for ordinary furniture while resin-based finishes were favoured for high-end furniture. However, this is contradictory to many historical facts and sources of primary evidence, which prove that wax finishes were prevalent. Do we therefore have to question the extent to which Roubo and his contemporaries were well informed about true workshop practices? Was Roubo a cabinetmaker or an *enclopaedist*; a compiler of information rather than someone actively engaged in all the trades of which he records details?

3 Roubo, Duhamel du Monceau, Wattin, Diderot and d'Alembert, *Secrets des Arts et Metiers* (anonymous), Stalker and Parker....

Archival evidence, such as the bills of the royal cabinetmaker Jean-Henri Riesener, contradicts Roubo's claim that high-end furniture normally had a resin-based finish. In 1776, Riesener, with the help of two craftsmen, was at Versailles restoring the famous Bureau du Roi and a commode. Based on his bill, it is possible to establish that in less than two weeks, Riesener and his helpers dismantled, scraped and sanded the marquetry, cleaned the bronzes and repolished the Bureau du Roi, and worked on the commode (*avoir été avec deux ouvriers....avoir raclé et repoly tout la marqueterie et netoyé la garniture de bronze*). This was obviously an amazingly productive two weeks, the Bureau du Roi being one of the most complex pieces of furniture ever made and its dismantling alone would have taken days. As regards the finish, we know that the resin-based polish available at the time of Riesener (and Roubo) would not dry quickly enough to be applied in this short a time frame. Riesener's bills for mahogany furniture delivered to the crown in 1786 also clearly mention '*poli a la cire en dedans et en dehors*' (wax polish inside and out).



The 'best white varnish' was a rich, translucent finish commonly used during the 18th century. It was made using sandarac resin. Shellac (on the right) was only available in dark red during the 18th century. The shellac pearls on the right are the pure, natural colour of Indian origin seedlac, an unrefined, unbleached natural form of shellac. Compared to the lightly coloured sandarac, it is easy to appreciate why natural shellac was not suitable for light coloured wood and marquetry but was favoured for rosewood or mahogany furniture only

The study of historical recipes needs to encompass the available materials and their inherent limitations at the time. Today it is possible to apply a respectable French polish using shellac in only a few days, 'French polish' at the time of Roubo was much different and its application was greatly influenced by the materials to hand. It is in fact believed that French polish, as we know it today, is a 19th-century improvement on previously used polishing techniques. Most of the techniques described by Roubo, such as the use of pumice powder, and most of the materials described in Roubo appear to be those used in today's French polish. However, Roubo and his contemporaries do not favour shellac but, instead, praise the natural resin sandarac, with its application by brushing. The reason for using sandarac instead of shellac is easily explained by the colour of shellac available at the time. Modern day alcohol used as a solvent in French polish differs greatly from its 18th-century equivalent, the so-called '*esprit de vin*'. Distillation processes have improved to a point that modern alcohol has a water content of less than 5%. 18th-century alcohol is estimated to have contained, at

best, 65 to 70% alcohol and the rest water. The high water content of the *esprit de vin* would reduce evaporation rate and would have resulted in a cloudy finish. Additionally, the shellac available at the time of Roubo differs in colour and wax content. Archival evidence reveals that shellac was only available in a dark version, similar to our modern sticklac, seedlac or the more refined dark garnet shellac. Lightly coloured shellac (commercially known today as de-waxed or blonde shellac) is obtained via a difficult process of removing some of the natural wax content from the pure sticklac and by chemically bleaching the shellac. As a result, Roubo only recommended shellac for dark woods such as rosewood (*Dalbergia retusa*). Applying a dark shellac finish to a colourful marquetry (on both European and English furniture) or to a light-coloured wood would have spoiled it. Instead of shellac, Roubo recommended using the best 'white polish' for light coloured marquetry. According to Roubo, the best white polish was not only suitable because of its almost translucent colour but he also states optimistically that the best white polish would stop the colours of the marquetry from 'evaporating' and stay colourful

longer ('*saisir leur couleur, qui, ne pouvant plus s'evaporer, reste toujours dans le meme etat*'). This is an amusing misunderstanding of the true reason for the discolouration of wood but it demonstrates that UV protective varnish was 'invented' during the 18th century (albeit not very successfully!). Sandarac-based finishes were not invented by Roubo and the best white varnish, as described by Roubo, finds its origin, almost word for word, in the treatise on 'Japaning (sic) and Varnishing' written in 1688 by Stalker and Parker.

On paper, a sandarac-based finish provides the perfect solution. Sandarac finish produces a clear and translucent finish; it beautifully enhances the colour of the wood and does not obscure marquetry. However, without exception, all experiments have demonstrated that sandarac finish is extremely slow to dry and is very difficult to work with. The author's attempts to create a thick and glossy finish, similar to today's French polish, were only successful if layers between applications were left to dry for several weeks.¹ One must therefore conclude that if sandarac was used, it was limited to a couple of applications.

In view of such evidence, it appears that a wax finish must have been the most practical option and therefore the most 'authentic' finish used during the 18th century for the large majority of furniture produced. Darker furniture may have received an application of dark shellac while the more expensive colourful furniture could have been finished with a couple of layers of sandarac, but furniture almost certainly never had the thick glossy appearance commonly associated with French polish.

1 A reproduction of a 17th century commode, finished with sandarac varnish was exhibited at the Geffrye Museum at the end of the 1990s and has been published in *English Furniture 1660-1714* by Adam Bowett, 1999.

The 'polissoir' by Roubo

A wax finish does not necessarily denote a matt finish. The late 18th-century portrait paintings by the American John Singleton Copley often depict a sitter next to a table or a piece of furniture. In the majority of Copley's paintings, the sitter's image is reflected in the furniture's top, suggesting that the furniture was finished to a high level of gloss. It is generally believed that the primitive nature of 18th-century materials would have precluded a wax finish, however the practice of achieving gloss on 18th-century furniture may have been much greater than first assumed. Wax recipes that use a combination of hard wax and soft

wax were discussed in the earlier article 'Is wax the only finish you need?', *F&C*, issue 189, February 2012.

Anyone experimenting with wax will know that it is a difficult finish to apply; for a successful application you must first consider how much to apply and how hard or soft the wax should be. The secret of a good application is the thickness of the wax; too much and the surface remains tacky, not enough and the coverage is poor with application marks. The quality of the wax will also affect the end result as will the solvent to wax ratio. Again, wax recipes were shared in *F&C*, issue 189.

To ease application, Roubo recommended the use of what is called in French a 'polissoir', a wax burnisher used both for application and for burnishing the wax finish. Roubo describes the polissoir well, albeit briefly, on plate 296, figures 8 and 9 and on page 859, section III (1774 French edition). Unfortunately for English readers, the 2013 translation *To Make as Perfectly as Possible* by Donald C. Williams contains some errors and one of these relates

to the polissoir. As a result, the wrong type of polissoir is now being made and marketed in the USA. This criticism is not meant to detract from the mammoth achievement of Don Williams and the authors of this translation, however to fully appreciate the potential of the polissoir it needs to be re-visited. In an interesting parallel Roubo in 1774 already knew of cabinetmakers who were not using the correct material to make the polissoir and wrote that other materials were '*pas bon*' (not good). These materials often result in the marquetry lifting as they overheat the surface and the animal glue used to adhere the marquetry. Roubo described the ideal polissoir as '*un faisceau de jonc ordinaire*', in translation a 'sheaf or bundle of common rushes'. Rushes are also known as *Juncus* and are commonly found in wetlands. Rushes vary in size and, in my experience, the best results are achieved by using tall rushes found growing in small rivers (some compensation for a bad day fishing is the accumulation of rushes collected while wading in the river). Despite the brevity of information Roubo

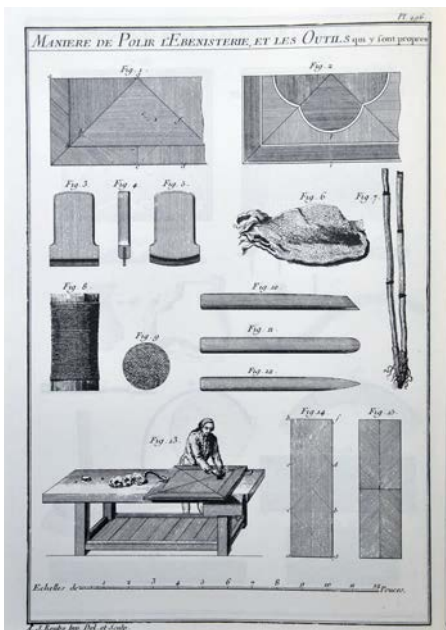


Plate 296 from A. J. Roubo's *L'Art du Menuisier Ebeniste*, published in 1774. Illustrations 8 and 9 show the wax 'polissoir' made of rushes (*Juncus*) and figure 13 shows the polissoir being used



Common rushes (*Juncus*) suitable for making a polissoir



Portrait of Mrs Richard Skinner by John Singleton Copley, c.1772. Portraits by Copley often depict fine mahogany furniture with a very reflective surface. Based on Copley's paintings and various other sources, scholars are re-evaluating how glossy 18th-century furniture actually was



Modern polissoirs. The polissoir on the left has not yet been filled with beeswax. The others have been soaked in molten wax



Rubbing the polissoir hard on the surface will polish the wood (fine sanding), fill the grain and lay a coat of melted wax all at the same time



Some wax can be added when using the polissoir, to replenish the wax lost from the polissoir. My favourite wax for this work is $\frac{1}{3}$ shellac and $\frac{2}{3}$ beeswax

accorded to the description of the polissoir, he puts great emphasis on the use of the correct material and stresses the importance of using rushes rather than any other reed or straw on page 862. Wetland rushes are entirely different to the corn grass or broom straw used by Don Williams and in the commercially available American polissoir. Common rushes have a soft foam-like interior and a relatively thin external wall. Growing in wet sandy conditions, common rushes are also believed to contain other beneficial minerals.

Making your own polissoir is very straightforward, once you've identified which rushes have the correct natural properties. The polissoir can be made as follows: cut common rushes into 200mm lengths; dry them and fasten a handful of dried lengths together with cord. Once the bundle is securely bound, soak the polissoir in melted wax of any type (my favourite wax is $\frac{1}{3}$ shellac or carnauba and $\frac{2}{3}$ beeswax). Thanks to the porous nature of the rushes' culms, the wax is absorbed along the bundle. Once the polissoir has cooled down and the wax hardened, saw

the end off the bundle and then smooth the end with rough sandpaper. I make different sizes of polissoir as I like to have some with a small diameter that can better access recesses and corners on my furniture.

Using the wax-impregnated polissoir is very easy but also very physically demanding. The flat end of the polissoir is rubbed over the wood surface but you need to apply considerable pressure and energy. Sufficient heat must be generated to warm the wax and force it into the pores of the wood filling the grain with wax. If necessary, some extra wax can be added at the same time. Witnesses are often amazed by the quality of the burnish and the speed that the wood can be finished.

When I first learnt French polishing, I was taught that 'you cannot have a good polish without a good grain filling' and I still adhere to this advice. I therefore religiously sand the surface as thoroughly as possible with pumice powder so that the grain is filled prior to applying the French polish. However, the polissoir technique works virtually to perfection even on open grain timber and

even if poorly prepared. The success of the polissoir is clearly down to the mineral content of the rushes. The rushes appear to be slightly abrasive and the combined wax plus abrasion clearly helps fill the grain. Inevitably, the polissoir will leave some application marks, however, those can be removed by polishing the surface with a clean cloth, if necessary adding a little more wax to the surface at the same time.

Wax surfaces finished in this way are durable and easy to maintain. Wax can easily be added at any time on the surface and burnished back to a fairly high gloss level, depending on the wax used. Although Don Williams apparently achieved great results, my own experience of a corn grass polissoir compared to a rush polissoir has demonstrated that the rush version is far superior. This reinforces my belief that, once again, Roubo (preferably in its original version) is the most reliable source for anyone studying 18th-century furniture traditions and can teach us much that is relevant today. *F&C*



This sample of plantation mahogany came straight out of the planer/thicknesser with an open grain and was finished with the polissoir. Unfinished surfaces like the one in the photo are, of course, not recommended for fine cabinet manufacture but this picture illustrates that, even on very poorly finished timber, a wax polissoir will work its miracle. The waxing and polishing happens almost immediately, no oil or grain filling being necessary

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The art of French polishing – part 1

Patrice Lejeune and Luke Addington begin their introduction to French polishing



PHOTOGRAPHS COURTESY OF LUKE ADDINGTON AND PATRICE LEJEUNE

Open a book or read an article about French polishing and you will invariably be left with the impression that it is a straightforward process. In my experience that's somewhat misleading as generally speaking French polishing is like any other skill; only easy when you know how to do it. As there are almost as many techniques as there are French polishers, it's important to distinguish between the various approaches before weighing up the options for your next project.

In this series of two articles Patrice Lejeune and I have chosen to look at a traditional method that we have developed over 25 years and shared with hundreds of students. While it may not be the simplest approach, with practice unbelievable results are within everyone's reach. It's our intention to pass on our knowledge and experience so you can develop your own technique as professional finishers have done for centuries. The key to developing a technique is to recognise that French polishing is a tactile process that puts you in contact with the materials at every stage. There is no other finish that lends itself quite so readily to a hand finished object.



The materials needed for French polishing are basically the same the world over although some local differences may require you to find alternatives or equivalents

Materials

When it comes to choosing materials for French polishing there are some standard products available worldwide such as shellac flakes and others, mainly solvents, that may have restrictions on use. Here's a list that includes alternatives and equivalents. See our suppliers panel at the end of the article.

Shellac flakes

Shellac flakes need to be fresh, dry and kept away from light. They come in a variety of colours. For French polishing, we use blonde or super blonde shellac the most. Garnet or ruby shellac can enhance the colour of dark, reddish woods such as mahogany. Beige and orange shellac can be used to warm up the colour of woods like walnut and cherry.

Alcohol

We recommend using pure ethanol or 190 proof *Everclear*. If these items are not available in your area, we suggest using methylated spirits (denatured alcohol).

Pumice

Silk pumice (ponce soie) is best. If you cannot get that, then Behlen's 0000 pumice is your next best choice.

Mineral oil

Any mineral oil free of additives will work.

Popote

Popote is a surface finish cleaner widely used in France. We like Super Nikco.

Cloths

This includes wool yarn, coarse and fine muslin and fine linen. Source natural, unbleached materials and check to ensure the fabrics are not permanent pressed as they are treated with a variety of chemicals (including formaldehyde) that can be damaging to your health and polish. Avoid fabric softeners as they form a 'scratchy' coating on the cloth that can leave marks on your finish. Many fabric softeners also negatively impact the natural moisture diffusion of the materials. Run your fabrics through a washing machine without detergents or fabric softeners, then on multiple cycles in a tumble dryer. This helps remove lint and loose fibres.

Mèche a vernir

Mèche is a fine gauze that has many uses in finishing.

Glass jars

It is a good idea to have at least two mason jars to store your pore filling and polishing pads separately. That way, you will avoid contaminating your polishing pads with pumice. Wide mouth jars are preferable. Make sure they are airtight so the pads do not dry out.

Surface preparation

Because French polish is a highly reflective finish, it will amplify any defect in the surface of your board. Therefore sand your work using rough to fine sand paper, ending with 400 grit. Use sanding blocks on new work to ensure a flat surface. After sanding, remove the dust thoroughly with an alcohol soaked cloth or brush. We advise against using tack cloths as they do not remove dust from deep inside the pores and can leave a sticky residue on the surface. Knock the grain back down with fine paper and wipe with alcohol again as this will reduce the amount of raised grain during pore filling.



An example of a poorly sanded and pore filled surface



A properly sanded and pore filled surface

Setting up your work station

It's good practice to deeply clean your finishing area the night before you begin pore filling or polishing. Mop the floor, vacuum, dust, do whatever you can to reduce the amount of airborne particles in your work space. You can even mist the air with a water bottle to remove floating dust particles. Just before you start work the following day cover your immediate work surface with clean paper. To secure your piece to the table there are a few options. Our favourites are using nails on the back of the piece, or wood blocks to hold them tight to the table. Position the work pieces with space between them.

Small blocks are useful when you need to polish both sides of a piece. These blocks need to be slightly thinner than your board and placed strategically at the corners to secure your piece. If you want to protect your work surface, cover a 20mm piece of plywood with paper, clamp it to your workbench, and drive the nails into that. If the back of the

piece will not show in your finished product, you can drive nails directly into the back in each corner. Trim the heads of the nails and firmly press the piece down, driving the nails into the work surface, thus preventing your piece from moving. If the board you are polishing is softer than your work surface, then put the nails into the work surface first. Both of these methods allow the edges of the board to overhang the table. This makes it quick and easy to polish the edges and the face at the same time.

While French polishing, you should not work for an extended period of time on a single piece. If you do not have to finish a piece right away we recommend waiting until you have more projects to work on, thus optimising your workflow.

Place your work station next to a window and use the natural raking light to check your surfaces. Make sure you also have good overhead lighting. Both forms of light help you assess the quality of your surface at all times.



Your work can be secured to the table using wood blocks. Deeply clean your finishing area the night before you begin pore filling or polishing. Mop the floor, vacuum, dust, do whatever you can to reduce the amount of airborne particles in your workspace. You can even mist the air with a water bottle to remove floating dust particles. Cover your work surface with paper to keep it clean.

Pore filling pad

When building a pad, start from the inside and work your way out. For the core we recommend using *mèche*, a material that will gradually compact into a hard, flat surface as you work with it, making it ideal for pore filling. Think of your pore filling pad as another form of sanding block. Fluff the *mèche* by pulling it apart gently with both hands and work it into a ball about the size of an egg. If you cannot get *mèche*, wool yarn may serve as a substitute. Ball the yarn up into a dense, egg-sized shape. Next, wrap a web of tightly knit wool (about 125 x 125mm) around the core. The wool distributes moisture very evenly. Then, wrap a web of coarse muslin (about 180 x 180mm) around them. All of these elements are permanent and only replaced when necessary. The next layer is a replaceable web of fine muslin (about 200 x 200mm) that will take the majority of the abuse. At the final step of pore filling, a web of very fine muslin



Start building the pad from the inside and work your way out

can be used to achieve a silkier surface. We recommend having multiple outer webs. Try to use them on like-coloured pieces of wood to avoid dragging contrasting colours into the pores of your surfaces. Some polishers

choose to use a string to close their pads. As we prefer to work quite dry (meaning we refill our pads more often with smaller amounts of shellac and alcohol throughout the process), a pad closed with a knot makes refilling difficult.

Polishing pad

The polishing pad is very similar to the pore filling pad. We recommend a tennis-ball-sized bundle of wool yarn for the core. Wool's hydrophobic exterior and hydrophilic interior make it the ideal material for moisture management during French polish. The wool core will compact over time and conform to the shape of your hand and the way you hold it. It makes your pad very personal. Next, wrap a 180 x 180mm web of fine muslin around the core to isolate and hold the wool in place. The outer layer is a replaceable polishing web. Like a good wine, a good web gets better over time and is only replaced when totally worn out. Take care of it and you will be rewarded with great finishes. You can use a 200 x 200mm web of either very fine muslin or linen. If you choose muslin, make sure it is of the highest quality and take extra care to remove as much lint as possible to



Wool yarn is the ideal core for a polishing pad

avoid leaving fibres in your polish. Linen, while mostly lint free, can be a little more difficult to handle. Try both and see what works best for you. Never let your pads dry out. Your mason jars are their humidors.

About once a week, check the pads and add a little bit of alcohol if needed to keep them moist. Once a pad dries out, it can be rehydrated but may never be the same. Store all of your materials in a dark, cool place.



Squirt the alcohol or shellac onto the core

There is a very simple procedure for opening and closing the pads, but first we need to learn some terminology. We will refer to your dominant hand as your polishing hand and non-dominant hand as your testing hand.



Flip the pad upside down

With your testing hand, hold the pad from the bottom and shake it open. Make sure not to touch the core, as it will stick fibres to your fingers. Use your squeeze bottle to squirt alcohol or shellac onto the core. Flip the pad



Gather the cloth and twist it closed

upside down so the tail hangs. With your polishing hand, gather up the cloth and twist it closed at the same time. You will use this quick and easy procedure for both pads every time you need to refill.

Shellac

Consistency and high quality materials are crucial to French polishing. We have found a 1:4 ratio of shellac to alcohol works very well. Measure out 100 grams of shellac to 400 grams of alcohol and mix them together. Once you have obtained a homogenous solution, filter the shellac into a squeeze bottle with an auto paint strainer. If your shellac does not mix properly and there is cloudiness or gummy suspension, your shellac has gone bad and should not be used. To ensure freshness, make a new batch of shellac each time you polish or at least every three months. Alcohol is hydrophilic and water makes shellac gummy, thus altering its properties and workability. It is again very important to keep all of your materials air tight and in a cool, dark place.

We prefer dewaxed shellac, as waxed shellac is softer and more elastic, leading to a less durable surface. As a general rule, the lighter the colour, the more refined and stronger the shellac. Garnet, ruby, beige and orange shellacs will enhance the colours of your wood. After at least a week of drying time they should be followed by blonde or super blonde shellac to create a harder protective surface. We strongly advocate against using pre-mixed canned shellacs for French polishing as you have no control over the quality of the flakes, alcohol or the ratio in which they are combined.

Shellac has multiple properties that make it an excellent choice for finishing. It is reversible and can easily be repaired (without stripping) and reworked at the molecular level, which can be very difficult or impossible to do with synthetic finishes. If it needs to be stripped, it can simply be soaked with alcohol and removed without raising the grain or damaging the wood and, with care, without removing the pore filling. It is also much more durable than commonly believed. It is less brittle than lacquer and does not scratch as easily. It is natural and renewable. Keep in mind that French polish is more aesthetic than functional. However, it is the best polish to enhance beautiful surfaces such as highly decorative and



Excess squeeze out can be cleaned with cold water and a cloth



Lighter coloured shellac is generally more refined and stronger

figured wood and is ideal for marquetry. It highlights and deepens the colours and grain of carefully chosen veneers, elevating the pieces to their highest potential. French polish is a wonderful and sturdy finish but we do not recommend using it for high-use areas such as table tops, whose maintenance would require labour intensive conservation procedures.

Maintaining a French polished surface simply requires wiping with a cold, damp

cloth or using popote.

One of the French methodologies in furniture making is to pre-finish the pieces while they are disassembled. When the furniture is glued together using hot hide glue or liquid hide glue (like Old Brown Glue), the excess squeeze-out can be easily cleaned with cold water and a cloth. This pre-finishing approach allows you to create a highly polished, beautiful finish in even the most difficult to reach corners.

Suppliers

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Laverdure
www.laverdure.fr

Shellac.net
www.shellac.net

John Penny Restorations
www.jpennyltd.co.uk

Workshop Heaven
www.workshopheaven.com

Gold Leaf Supplies
www.goldleafsupplies.co.uk

Rest Express
www.restexpress.co.uk

Jenkins Wood Finishes
www.wsjenkins.co.uk

A G Woodcare Products Ltd
www.agwoodcare.co.uk

Authors

Patrice Lejeune is a professional furniture and marquetry maker and restorer working in



San Diego, California. He is a partner of Antique Refinishers Inc. and teacher at The American School of French Marquetry. A graduate from the École Boulle in Paris with majors in furniture making and design and minors in marquetry and finishing, he has been practising for 20 years. His work can be found online at AntiqueRefinishersInc.com and PatriceLejeune.com. Luke Addington is a professional furniture maker, teacher and marqueteur working in Tucson, Arizona. He owns and operates Addington Furniture where he recreates 17th–19th century furniture. He is a graduate of The American School of French Marquetry. His work can be found online at AddingtonFurniture.com F&C

In the next article we will delve into the intricacies of producing the finest French polish possible.

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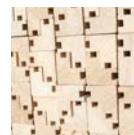
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Water-based finishes

The Editor asks 'are the new generation of water-based lacquers really a match for old school finishes?'

If you think the list of accessible finishing products is a long one then just maybe consider the number of possible outcomes there are when you mix and match the techniques for applying them. My youngest daughter's maths homework this week was on the subject of probabilities. She's learned that the chances of getting a Royal Flush in poker are about 2.5 million to 1. Fortunately the chances of achieving a perfect finish are more in your favour and it's with this in mind that I've decided to shorten the odds even more by looking at water-based finishes and whether there is a place in the 'shop cabinet for a small selection of reliable alternatives to solvent-based products.

First observations

In the run-up to preparing this article, almost everyone I spoke to about water-based finishes had had a bad experience using them or were either just irrationally averse to trying them, period. Old habits die hard and as I've had a foot in both camps in the past I can identify with that. I also know that all it takes is one positive experience for you to adjust your thinking. The most common argument against them was that they don't go on the same way as oils. That's true. The second was that they aren't as hard wearing as oils or lacquers. That's not true, so before

we go any further let's start by scotching a few rumours about water-based finishes.

Why use water based anyway?

For a start they are better for us and those around us, which should be a good enough reason to try them out. In many cases the compounds used in their manufacture are the same as those used in solvent-based finishes so it's the solvent that has been replaced and not always the important stuff. Solvents have a great effect on the way finishing products behave in the tin, while being applied, while they are drying and in some cases long after they have cured. Some oils, alcohol and spirit derived solvents are toxic, unpleasant to use and also require specific arrangements to dispose of excess, so it makes sense to limit our exposure to them. The trouble is we've got used to having them around.

Application

It's a fact that water-based finishes raise the grain more than oil-based ones. Dampening the surface with a mist of water or a damp cloth, allowing it to dry and re-sanding will generally overcome this. If a thin top coat is your desired outcome, water or oil for

that matter, do this at least twice in your surface prep before sanding with a 180g abrasive and then again with 240g. If you're intending to build a thick layer there's hardly any point in going finer until you have built up a good layer of product. There will always be exceptions to the rule and I know a lot of finishers that prefer to dive in straightaway with product onto bare wood without going through this procedure, but none of them use water-based finishes.

The first thing you notice when changing over to a water-based product is that it doesn't lay as flat as oil straight off the brush. Faced with this the temptation is to rework the product to improve things but because water-based products gel much quicker than oils you end up pulling at the surface while it's still tacky and making things worse.

The second most obvious difference and the one that catches most folk out is that in warm conditions water-based products do the opposite to what oils do. They tack up even quicker and when it's cool or humid they slow down, or worse, stop drying altogether. So if you can get your head around that switch they really do behave in much the same way as oils, just at opposite ends of the warm/cool, dry/humid spectrum. ►

Water-based effects

The process of liming is effectively the same as grain filling and typically uses a filler that contrasts with the colour of the substrate. For the best effect, timbers with an open grain structure such as oak, ash or elm respond better to the technique than those with a fine grain.

Traditionally the effect was the result of applying a lime paste mixture to hardwood surfaces to ward off attacks from bugs and beetles. The caustic nature of lime means this method is no longer practised. However, the appearance of lime has been a popular decorative style falling in and out of fashion for the last couple of centuries.

First of all if you want to achieve that look nowadays, it's not difficult and won't strip

the skin off your hands either. The simplest option is to source a proprietary liming paste. These are generally wax-based pastes that are applied to the surface and require little or no further treatment. They also offer little or no protection from the rigours of daily life.

Step things up a notch and you can seal over the filler with a protective coating of your choice for a more durable surface. I don't want to cover every possible permutation in this article, you wouldn't thank me for it, so instead I'm going to focus on an effect that mimics that of liming with acrylic milk paints. I've chosen those made by General Finishes. Just so we're clear, this is not liming but a technique that mimics the effect of liming.



General Finishes' Whitewash and Top Coat

Preparation

Preparation as they say is everything and for a limed appearance that means scrubbing the surface with a coarse brush, preferably a wire one to remove all the pith and dust from the grain of the wood. Sanding might have been a good idea up until now but once you have brushed the surface don't touch it again with any abrasive. Instead, reach for the vacuum and remove all the loose particles from the surface. If you like the idea of surface preparation without the use of abrasives then now's a good time to try it out. A finely set smoothing plane or card scraper will serve you well.



A heavy-duty wire brush will remove all the dust and pith from the grain



Vacuum all the loose particles from the surface



If a wire brush is too aggressive try preparing the surface just with hand tools

Laying down colour

Strictly speaking paint isn't the best medium for liming. It can dry before you have had time to force the solids into the grain and wiping the excess off has to be done quickly. And given that the colour in paint is partly due to the use of dyes and not pigments, staining the surface is a real possibility. It would be wrong to suggest that some colours work better

than others as colour is subjective in terms of quality. It's not even fair to assume that better quality solids or pigments or a higher density of them will result in a better paint for liming. To get the paint into the open grain, work the brush or pad across as well as along the grain. Air gaps and dust in the grain will cause bubbles to appear so you'll need to be vigilant

to achieve an even look. Before the paint dries take a clean cloth and wipe away the excess. Dampen the cloth with water if the paint begins to dry. Although this won't offer a great deal of protection to the surface of the wood, it may be the finish you want. For something a little more robust recoat with something like a General Finishes clear Top Coat.



The Whitewash has a high solids content so needs a good stir before use



Pay attention to air bubbles and loose dust in the open grain of the wood



Wipe away the excess before the paint has a chance to dry

Water-based finishes in general

Water-based finishes take longer to dry than you think. If it says dry in 30 minutes that's really all it means. Dry is not the same as cured and this can take up to a week in low temperatures and four days under normal conditions for some products although it probably won't say that on the tin. During that time, however, the products are typically safe to handle and it's really only excess moisture that

you will have to avoid. Try to resist the temptation to apply wax until the product has cured. It will only slow things down and be equally cautious about burnishing or rubbing out too soon after application.

There were a couple of products that really stood out for me while compiling this article; General Finishes Enduro-Var and Liberon's Water based Hardwax Oil.

Enduro-Var



This urethane varnish is quick to build and is remarkably self-levelling. A foam applicator is the best method for applying by hand but a brush works just as well. It tacks up quite quickly

so you need to work fast on large areas if you are applying by hand. It sprays straight from the tin so there's no need to thin. In fact doing so could affect its performance. The product is translucent and slightly pink in colour but this is not transferred to the timber. On pale timbers you may initially experience some slight warming of the general tone but this fades as the product dries. Sanding between coats is recommended and a pre-sealer is not required. It offers a good level of protection for interior use although not in very wet areas and resists scratches.

Hard wax oil



You wouldn't usually expect to find the words water, oil and wax in the same sentence let alone in the same tin but that's what Liberon have done and it works a treat. Unlike solvent-based HWO this isn't a saturation

product meaning it doesn't crosslink with the wood. Instead it becomes a membrane-like layer like a traditional varnish or lacquer. It goes on with a brush and skins over quickly just like shellac so try to avoid overlapping brush strokes. It has a milky white appearance on application but soon clears and when it does, unlike oil-based HWOs, it won't cast a yellow hue. Sanding between coats is recommended but not nearly as important as wetting and sanding before applying the first coat. For a quick drying general purpose finish on interior work it'll give oil-based HWO a run for its money.

Quick dry varnish



By fine finishing standards this is crude but effective. It builds to a very thick coat easily, is less susceptible to runs on vertical faces than the other water-based finishes I tried and more so than oil varnishes. I applied

this with a cloth French polish style on a new handrail where the window of opportunity for finishing was limited. Even though it says quick dry on the tin you do need to wait a couple of hours before re-coating. Despite this the job was completed in a day with a minimum of disruption to other trades. To slow the drying time down and to help with work in higher temperatures the instructions suggest thinning with water by 10%. That's good to know but perhaps best left for horizontal surfaces only. Like all the other water based finishes it's virtually odourless and brushes or rollers can be cleaned with water.

Water-based for outside



Ronseal's Quick Drying Woodstain is a finish and stain in a single application

Exterior work is perhaps where you have to be a little more cautious about where and when to apply. Your working conditions are likely to be more extreme and avoid the end



After a winter out in the open the Woodstain retains its colour and still repels water

of the day if you suspect a dewy evening or rain. My experience with exterior water-based products is limited to garden furniture. It's the one and only time I've used a varnish/stain combination. By my reckoning they seem to be aimed at the DIY/amateur market as an easy fix for tired old timber. Over-coating is a real problem if you want to avoid patchy areas that obliterate the character of the wood. For extra protection consider applying a clear top coat to build up layers.

Conclusion

If you were to base your choice of finish purely on ease of use then water-based

products should win hands down every time, although they're a long way from replacing oil and solvent-based ones for the majority of new interior fixtures and fittings. For post-installation flooring products however, the split is around 50/50. Water-based finishes result in a surface film being applied much like a traditional varnish or lacquer so good surface preparation to ensure reliable initial adhesion is important. They can appear at first to be rather cold on virgin timber but this it's often short lived as the wood changes colour on exposure to UV light anyway. The only difference being that the change you see is in the colour of the wood and not the finish. *F&C*



On everyday pieces it's hard not to like a water-based finish

Holtey T21 transitional plane

Jim Hooker puts the Holtey T21 plane to the test



PHOTOGRAPH BY JIM HOOKER, UNLESS OTHERWISE STATED

Karl Holtey is famed for infill and latterly, metal planes, made to standards of precision and finish not previously seen. What he is less known for is his keen interest in plane history. His initial steps into plane making were fed by extensive research into 19th-century English and Scottish infills both theoretical and, at a practical level, by restoring these planes for collectors and dealers. There is nothing like taking planes apart if you really want to understand how they were made and if, like Karl, you are a perfectionist, how they might be made better. The shortcomings of infills and how he worked to minimise their impact in his own planes is another story, but his research introduced him to the planes of John Gage and his son John Porcius Gage (see the panel on page 47). Karl's admiration for the ingenuity and simple unadorned lines of Gage planes created an itch that just had to be scratched and the T21 is the result.

The birth of transitional planes

Go back 200 years and all planes were almost entirely wood. While these planes had the virtues of simplicity and low friction soles, those soles wore down, opening up the mouth to the detriment of performance. Blade adjustment was a matter of trial and error and plane bodies



Stanley's No. 26 is the best-known transitional plane. Their production volumes meant they could use an iron casting to carry the main components

PHOTOGRAPH COURTESY OF DAVID STANLEY AUCTIONS



A Gage 'self-setting' jointer

PHOTOGRAPH COURTESY OF DAVID STANLEY AUCTIONS

were subject to the vagaries of natural wood movement. So, ingenious engineers set about finding a solution and the infill plane with its fabricated metal body filled with beech (*Fagus sylvatica*) or exotic hardwoods was the result. These planes, initially without adjusters, solved the wear problem and promised levels of consistent accuracy of blade location and dimensional stability not possible with wooden planes. But the skills and time required to make an infill plane meant that they were always expensive, causing inventive toolmakers to look for other solutions.

One result was the birth of what are now known as transitional planes – hybrids consisting of a more or less traditional wooden body, with varying amounts of metalwork to precisely locate the blade and provide some means of adjustment more progressive and predictable than the hammer used to adjust a traditional wedged blade. Easily the best known transitional planes are those made by Stanley, such as the No. 26, which has a boat-shaped cast-iron frame screwed to the wooden body and carrying the blade, its location

and adjustment mechanisms and handles. But others had ideas too. In the 1880s John Gage bought the patent covering a somewhat different interpretation of the idea and developed it further. The result was the Gage Tool Co. Self-Setting Plane. Its plain unadorned design always appealed to Karl Holtey and the T21 is his interpretation of and tribute to the Gages and their products. The result is a low, foursquare form that closely resembles Gage's larger planes, Karl's first, and almost certainly, only plane with an all wood body.

The T21 in detail



The Norris type adjuster is beautifully made. Brass pads are in fact rods bonded into the base of the body to minimise the effect of wood movement on blade bed angle

While the T21 may bear a superficial resemblance to a Gage plane, no Gage plane was ever made like this. Instead of a lump of beech you get a two part body of rippled maple (*Acer saccharum*) and cocobolo (*Dalbergia retusa*) – my wife thinks it's flashy but I've shown it to a lot of



Both the sole and body have machined dovetail slots at 45° allowing the two to be slid diagonally together

woodworkers and none has thought it less than stunning. Less flamboyant wood choices are available if you are of a retiring disposition when it comes to tools. Intriguingly, the two parts of the body are jointed together with dovetails on sides and ends, a seemingly impossible feat at first sight.



A stack of T21 bodies with sole and body bonded with polyurethane glue

If you are puzzled as to how this is done, a look into the plane's throat provides a clue to the fact that the two parts of the body have a series of dovetail slots machined across them at 45° enabling them to be slid together at the same angle. The joint is permanently bonded with polyurethane glue.



The A2 steel blade is finely ground flat so polishing the back and sharpening are very straightforward

The T21 also departs from the Gage formula in the matter of blade location and adjustment. Here it follows familiar Holtey practice rather than replicating Gage's metal 'self-setting' throat box. The 60mm wide A2 steel blade is a massive 5mm thick and is bedded bevel down at an angle of 45° with no back iron. The mouth is plenty fine enough for the sort of work a plane of this size – at 505mm long it is equivalent to a conventional metal jointer – is likely to be used for. The mouth geometry ensures that it will take a great deal of wear to the sole

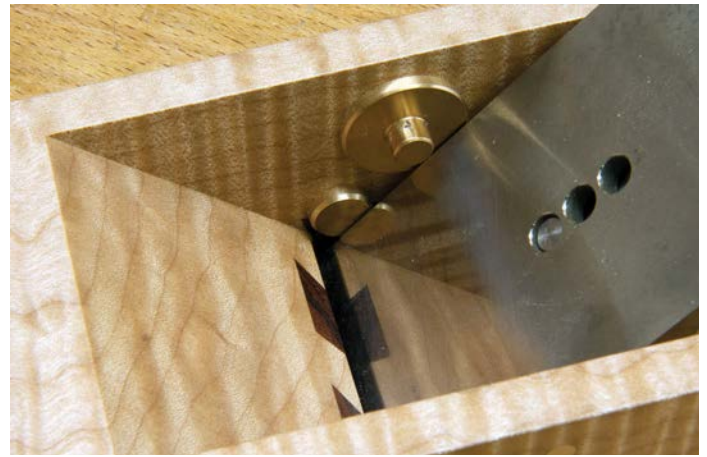


The mouth is fine but not superfine as befits a jointer that may be used to take quite thick shavings

before the mouth opens up to the point where it might be considered too wide. The blade bed has what appear to be two brass pads embedded into it to support the upper end of the blade. In fact, these pads are the visible ends of gunmetal rods with annular rings formed in them, which pass through, and are epoxy bonded into, the plane's body, the annular rings combining with the epoxy to form a positive mechanical joint. The purpose of these rods is to minimise changes in the bed angle resulting from seasonal movement in the plane's body. ➤



The lever cap has scroll recesses that locate over pegs on the gunmetal 'spider' bonded into the plane sides. The cap screw has finely machined knurling and square thread for long life



With the lever cap removed, access to the blade is unobstructed allowing removal and replacement without bumping its edge. Note the brass kickers below the 'spider', against which the blade pivots for lateral adjustment



The 'spider' is a real challenge to make but an elegant way of transferring the clamping stresses of the lever cap into the plane's wooden sides



The ends of the 'spider's' legs are an attractive feature on the T21's sides

One of the joys of Holtey's own design planes is the lever cap. This has scroll shaped recesses in the sides in which small metal dowels in the plane sides locate, enabling the lever cap to be locked in place and clamp the blade. The advantage of this arrangement is that once the lever cap is removed, the user has almost completely unobstructed access to the blade, adjuster and blade bed where, in more traditional

non-Bailey type designs, access is obstructed by a captive lever cap or a permanent bridge bar. In all metal Holtey designs the metal dowels are fixed in place by integral rivets that pass through the plane sides, but these rivets can exert considerable forces on the sides if the lever cap clamping screw is over-tightened. While metal sides are well able to cope with these forces, Karl was concerned that a single fixing through

the T21's wooden side might not cope in the long term. His elegant solution in the form of a five pronged gunmetal 'spider' bonded into corresponding holes in the sides is ingenious and beautifully made.

Longitudinal and lateral blade adjustment is by means of a single thread Norris type adjuster that operates to standards of accuracy and smoothness you would expect in a plane of this quality.



A great plane makes producing a pile of shavings like this a real pleasure

With the blade back polished and the edge sharpened – a task made easy by the fine and flat surface grinding – I had a lot of fun using this plane to make quite a large pile of shavings of thicknesses varying between quite thick and gossamer thin, in sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), oak (*Quercus robur*) and utile (*Entandrophragma utile*). While, at 45°, the blade is set at standard pitch and therefore not specifically designed to cope with difficult woods, I experienced no tear-out, even on boards with some grain reversals.

The Gage Tool Company

John Gage was born in 1802 into a very poor family in Litchfield, Herkimer County, New York State. He left full-time education at the age of nine to work in his father's brickyard, attending school for three months each winter until he was 15. Apprenticed to a foundry at 18, he left home at 22 to seek his fortune. After working in various foundries, building, and later running, a steam powered flour mill in what was then the small town of Chicago, he eventually became a wealthy and highly respected farmer and property developer, settled with his family in Vineland, New Jersey.

In the early 1880s David A. Bridges, a Vineland cabinetmaker and pattern maker, had an idea for developing an earlier design of plane having a wooden body with a metal throat assembly to

hold the blade and provide adjustment, but lacked the money to develop it, make it in numbers and market it. John Gage put up the finance required and with his son, John Porcius Gage, and Bridges, a new Vineland company Bridges, Gage & Co. was formed with all three as directors and three-quarters of the relevant US patent on the plane design being assigned to John Gage. Bridges' original design seems not to have been made in significant numbers and a further development was patented in the name of John P. Gage in 1886. This was to be the design of the transitional plane, made in various sizes, with only minor changes, by the Gage Tool Co. (as it soon became) for the remainder of its existence. Gage sold the company in 1917 and it was acquired by Stanley Rule & Level Co. soon after, but Stanley continued to make Gage planes for many years.

Apart from its appearance, the Gage Self-Setting Plane was distinguished by its blade carrier and adjuster. This consisted of an iron throat box, which provided the blade bed, mouth and a screw depth of cut adjuster which operated via a series of slots in the blade rather as in many modern block planes. The position of the throat box could be adjusted to take account of wear to the wooden sole. There was no lateral adjustment because the blade location arrangement ensured that the blade was automatically held parallel to the throat and was thus 'self-setting'. This was Gage planes' unique selling point and featured heavily in all marketing material although, if the careless craftsman neglected to keep his blade sharpened exactly square to its length it would, of course, always self-set with the edge out of parallel with the plane's sole.

John P. Gage was certainly a highly effective promoter of the company's planes,



This recreated wooden box contains the plane securely but allows it to be viewed. The red text on the label reads: 'Self-setting plane, a child can set it'

devising many innovative marketing schemes. One of these took advantage of the often long distances the planes travelled to customers via tool dealers or mail order, by packing them in wooden boxes, which ingeniously contained the planes securely while allowing them and their promotional labelling to be clearly seen by everyone who handled them as they found their way to the four corners of the US and beyond. There are no known production figures for Gage planes and the company seems never to have had more than four or five employees, but the company was clearly well organised and made a lot of planes in various sizes – certainly enough to have been a thorn in Stanley's side.

I am indebted to Carl Bopp, a US authority on the Philadelphia, PA area plane makers. The information on and images of the Gage planes are from Bopp's two-part article in the CHRONICLE of the Early American Industries Association, June 2014 and September 2014. Image of recreated Gage packaging kindly provided by John Speigel.



John Porcius Gage surrounded by Gage Tool Co planes. The bottom of the iron blade box is clearly visible in the sole of the long plane in the foreground

Wooden planes – the difference

Many woodworkers never get to use wooden planes and there is no doubt that they are a very different ownership proposition from modern all metal planes. In use, they glide over the wood with very little resistance in a way that is a revelation if you haven't used one before. Obviously, the cutting effort is the same as a metal plane with the same effective cutting angle, but overall, the effort required is significantly lower. However, wooden planes do require more commitment from the owner because, as any serious woodworker knows, wood is a natural material that may move significantly in response to changes in humidity.



When abrading the sole of a plane to remove longitudinal concavity it is important to avoid downward pressure in the centre which might distort the body

When the T21 arrived, I was immediately struck by the flamboyant wood combination and the stunning standard of making. But, I was keen to get it onto a reference surface to see how flat the sole was, and it turned out to be pretty close to dead flat with negligible concavity along its length of just .0002–.0003in measured with a feeler gauge. I decided to put it in my tool cupboard for a few weeks to see what would happen. On re-testing, the concavity had increased to a less desirable .0007–.0008in.

Over the next couple of months, in an attempt to establish exactly what was going on, I removed some concavity by abrading the sole on abrasive paper stuck to my flat planer bed and also gave the plane spells in

both my warm handwork shop and my almost unheated machine shop, which I believed to be drier. The final step in solving the puzzle was a spell in the warm with my dehumidifier on for a week or so. During the whole period of this experiment the concavity of the sole fluctuated up to a maximum of .0020in.

What all of this established was that Karl's workshop on the east coast of northern Scotland is drier than mine on England's south coast and, contrary to what I thought, my machine shop is damper than my warm handwork 'shop. When returned to a more normal non-dehumidified atmosphere for a couple of weeks I removed the remaining concavity and it has stayed consistently flat since then. It is important to emphasise that

none of this is a criticism of the Holtey T21 or its maker. It is what wooden planes do and one of the reasons why metal planes have become predominant. It is also true that these effects are likely to be more pronounced in a relatively long plane like the T21 than in, say, a smoother of only half its length. If I were the owner of the T21 I would now expect it to remain reasonably stable, albeit with some seasonal variation. As I said earlier in this review, wooden planes require more commitment and understanding from their owners than do their metal cousins. For some, this will be too much of a commitment but, if you love the way they glide smoothly across the work, their warmth to the touch on a cold day and relatively light weight, then you will love the T21. *F&C*



Here the sole shows longitudinal concavity of the sole of about .0020in due to wood movement caused by changes in environmental humidity

F&C Verdict

I loved the T21. It is exquisitely made and I could not fault its performance. It has all the virtues you could hope for in a transitional plane but, of course, it cannot escape the natural properties of the material from which it is made. If you love wooden planes, perfection in making and have the money to spare you won't be disappointed by the T21.

For:

- Performance
- Flawless standard of making
- The handling qualities that are unique to wooden planes

Against:

- Price
- As with any wooden plane, wood movement may mean you need to do some work on the sole to keep it flat

The numbers

Body: rippled maple and cocobolo.

Dimensions: (l,w,h) 505 x 85 x 155mm.

Weight: 2478g.

Blade: 5mm thick A2 steel, 60mm wide.

Price: £4560

From: www.holteyplanes.com

Union Mfg. Co. transitional planes

A less well-known brand of transitional plane was made by the Union Mfg. Co. New Britain, Connecticut. The company was active in the late 1800s producing ironmongery and hardware and various machine parts. They made the transition to hand tools somewhere around the turn of the 19th century. A catalogue from 1905 shows a comprehensive list of every popular plane around at that time, both wooden bodied and metal. The wooden bodied planes could be bought with a metal sole that was screwed onto the bottom of a wooden body. Whether this was intended to counter movement in

the body between seasons is doubtful and more likely to do with wear.

The adjusters and bedding on these planes is superior to a basic wooden plane but at the mercy of movement in the wooden body. Don't let this put you off buying one as this can usually be remedied by tightening the screws that hold the cast-metal 'infill' in place. The company ceased manufacturing planes in 1919, making them rare when you consider the volume Stanley produced. Some say they are better made but we couldn't possibly say for fear of starting a run on old Union Mfgs. *F&C*



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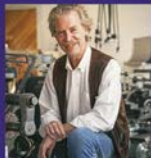
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Under the hammer: bench-marks of quality

John Adamson reports from the recent David Stanley Auction and tells us about some notable lots that went under the hammer

When Albert Camus, in his short story 'The Silent Men', described a long plane as 'groaning' as it hit a knot in the wood, he conjured up succinctly the ambience of a busy workshop of the early 20th century. Writing in the 1950s, he was looking back, perhaps not without a hint of symbolism and nostalgia, at a world of workmanship already under threat of extinction. As a boy, he knew the cooperage in Algiers where his uncle worked, and the sounds and smells of working with wood

must have stayed with him all his life. Many of the woodworkers and collectors gathered at David Stanley's 67th international auction, held once again at the Hermitage Leisure Centre at Whitwick, Leicestershire, on 26 March, 2016, must also have been thinking back to a golden age of craftsmanship epitomised by the perfect plane. The gavel's decisive tap marked the sale of more planes than of anything else. Significantly, out of the top 25 highest selling lots in the auction nine were planes.

Norris planes

The best Norris planes always fetch high prices. A little-used dovetailed Norris A11 adjustable low-angle mitre plane with rosewood (*Dalbergia retusa*) infill and Norris-stamped iron (lot 993) stole the show at £4000 (not including 15% buyer's premium), selling to a postal bidder from Ireland, and a Norris No. 11 (lot 994) from the David Russell Collection was knocked down

for £3000 to a UK buyer on the internet. Both planes were from the interwar years, when Norris's output was at the zenith of its design. By 1941, however, the firm was being wound up voluntarily only to become a subsidiary of Aeronautical and General Instruments Ltd of Croydon, and in the 1950s to disappear altogether. But nostalgia for the quality of planes from Norris's heyday

came soon enough. The Henley Optical Company manufactured a series of planes in the late 1970s that were clearly inspired by the old Norris tradition, yet showing a new eye for quality of design and workmanship. The Henley Optical Company's low-angle mitre plane up for auction as lot 516 brought £1650 – from the same Irish bidder who bought the Norris A11.

Lot 993: Though marked on the lever cap as a Norris A11, this dovetailed-steel mitre plane with patent adjustment mechanism does not look at all like a Norris No. 11 plane. Featuring only in the Norris catalogue of the 1930s, the plane is sleek in line but austere. Note its handsome stern-shaped heel. Interestingly, the *SS Normandie*, France's superlatively stylish ocean liner was making headlines at around the same time, setting out on its maiden voyage in 1935



Lot 994: The dovetailed-steel Norris No. 11 mitre plane with its original snecked 2¼in plane iron bears little relationship in design to its adjustable successor, the Norris A11



PHOTOGRAPH BY JAMES AUSTIN, COURTESY OF DAVID RUSSELL



The maker's mark and model number in an ellipse on the lever cap

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

£1650

Lot 516: An adjustable steel-soled gun-metal mitre plane with rosewood wedge made by the Henley Optical Company, 'precision plane-makers', uses the Norris-inspired 'pin-and-hole' adjustment mechanism for the plane iron. Both its box and original invoice were sold with the plane



Spiers and Mathieson tools

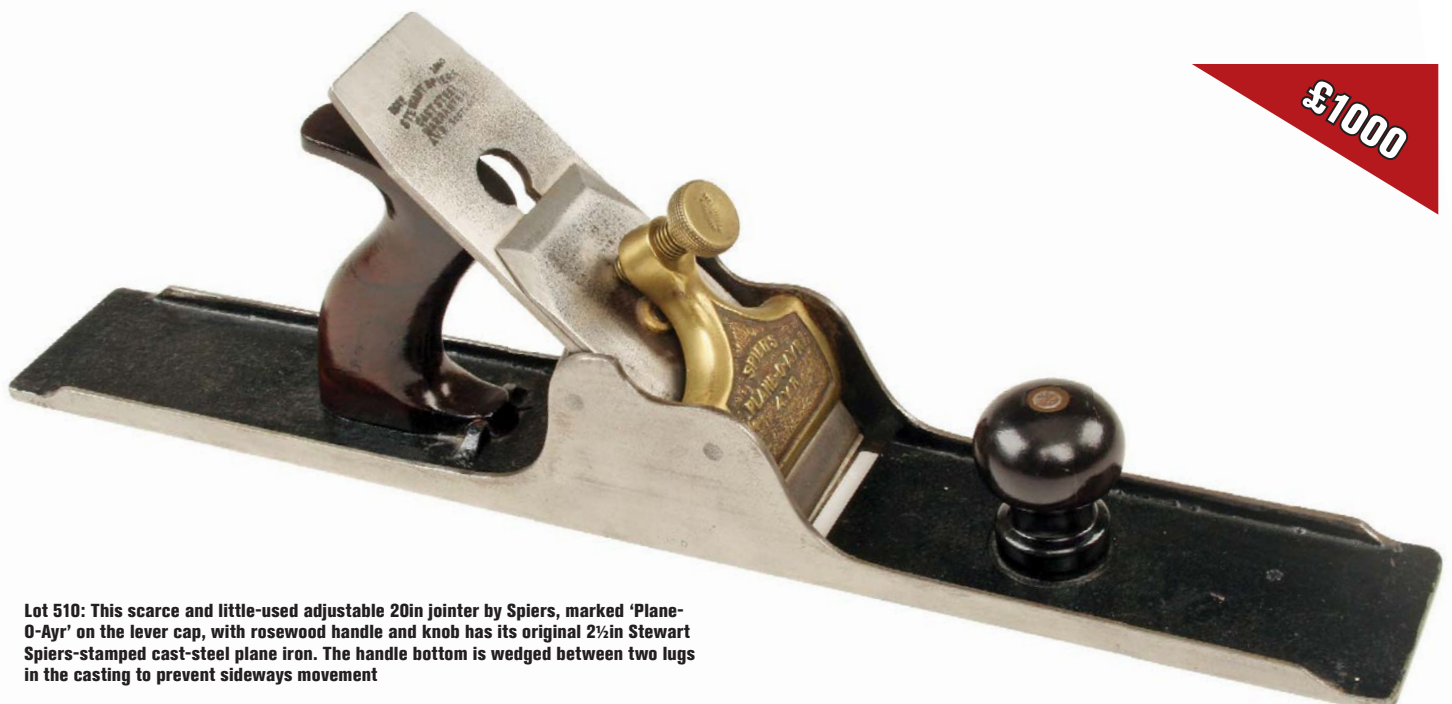
The two great contemporary Scottish tool-makers of the 19th century, Stewart Spiers and Thomas Mathieson, who both benefited hugely from the growth of shipbuilding and other industries on the Firth of Clyde, were also represented in the sale: Spiers with an early 20th-century somewhat utilitarian jointer (lot 510, knocked down for £1000 to a UK bidder in the room) and three other planes; Mathieson with a wooden sash-moulding plane (lot 418, selling for £550), a very rare solid framed brace (lot 821, selling for £600 to a buyer in the room) and a selection of other planes and tools.

The Mathieson brace is particularly interesting. On 12 March, 1866 Thomas

Mathieson of the Glasgow and Edinburgh tool-makers, Alexander Mathieson & Son (the firm had begun as plane-makers), was granted a Letters Patent (no. 744) for 'improvements in holding devices for boring tools'. This was a steel-spring key that went through the pad on a brace and locked the bit in position. It was the brainchild of the highly inventive American Cyrus Avery of Tunkhannock, Pennsylvania, who, so the *London Gazette* records, patented several inventions in his own name or through others. Mathieson framed braces with the spring mechanism are very scarce indeed. Given that neither of the two known is stamped with the crescent-and-star mark

of the Saracen Tool Works, the brand name believed to have been first adopted by Mathieson in 1868, this may well narrow down the date of their manufacture to the years 1866–8. This of course does not rule out the possibility that they were made to Mathieson's specification in Sheffield, the birthplace of the framed brace.

The factories of Spiers and Mathieson both entered the 20th century with vigour, but their fortunes began to wane as the century wore on and demand for hand tools fell. Spiers went on making planes into the 1930s; Mathieson survived a little longer, until the 1950s, and was acquired by William Ridgway & Sons Ltd of Sheffield.



£1000

Lot 510: This scarce and little-used adjustable 20in jointer by Spiers, marked 'Plane-O-Ayr' on the lever cap, with rosewood handle and knob has its original 2½in Stewart Spiers-stamped cast-steel plane iron. The handle bottom is wedged between two lugs in the casting to prevent sideways movement

DESIGN & INSPIRATION

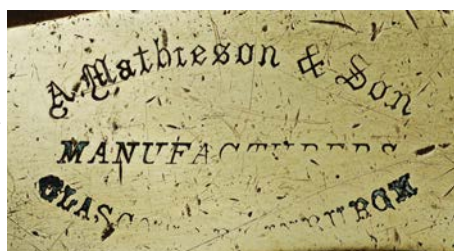
David Stanley international auction

PHOTOGRAPH BY JAMES AUSTIN, COURTESY OF DAVID RUSSELL



£600

Lot 821: Of this solid framed brace with 'Patent Spring Lock' and ebony infill marked by Alexander Mathieson & Son of Glasgow and Edinburgh only two are known



Maker's mark on the lower frame of the Mathieson brace

PHOTOGRAPH BY JAMES AUSTIN, COURTESY OF DAVID RUSSELL



Bill Carter planes

When Bill Carter decided in 1987 to leave cabinetmaking behind to make hand planes as a living, he was reviving a passion for the finest workmanship in tool-making. In the 25 or so years since, he has shown that there is true interest in quality hand planes and a worldwide demand for them, and other makers like Karl Holtey have followed suit with a fair degree of success. Carter's mitre plane (lot 520) in bronze with dovetailed sole and burr boxwood infill and wedge is an ode to Norris. It fetched £1000 going to a UK bidder on the internet.

"Altogether a very successful sale," concluded David Stanley, "with only 12% unsold and (for the first time) over 30% selling via the internet to 15 different countries." *F&C*

Lot 520: Bill Carter's dovetail-soled bronze mitre plane with burr boxwood infill, scrolled wedge and snecked iron owes much to Norris but makes a statement of its own

£1000



Forthcoming David Stanley Auctions

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The next general auction is on 29 July, 2016, also at the Hermitage Leisure Centre, Whitwick, Leicestershire LE67 5EU.

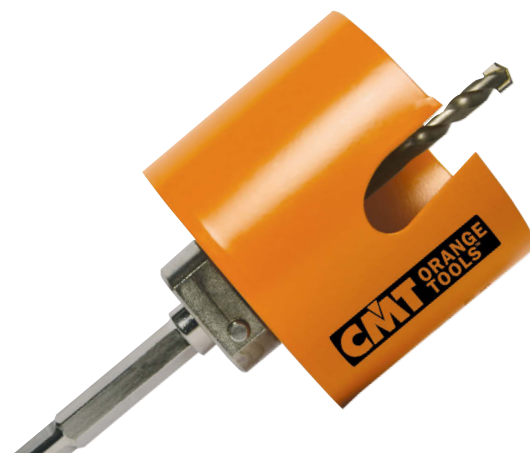
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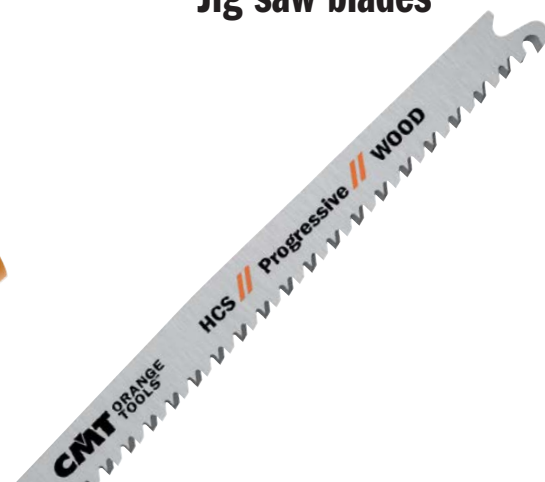
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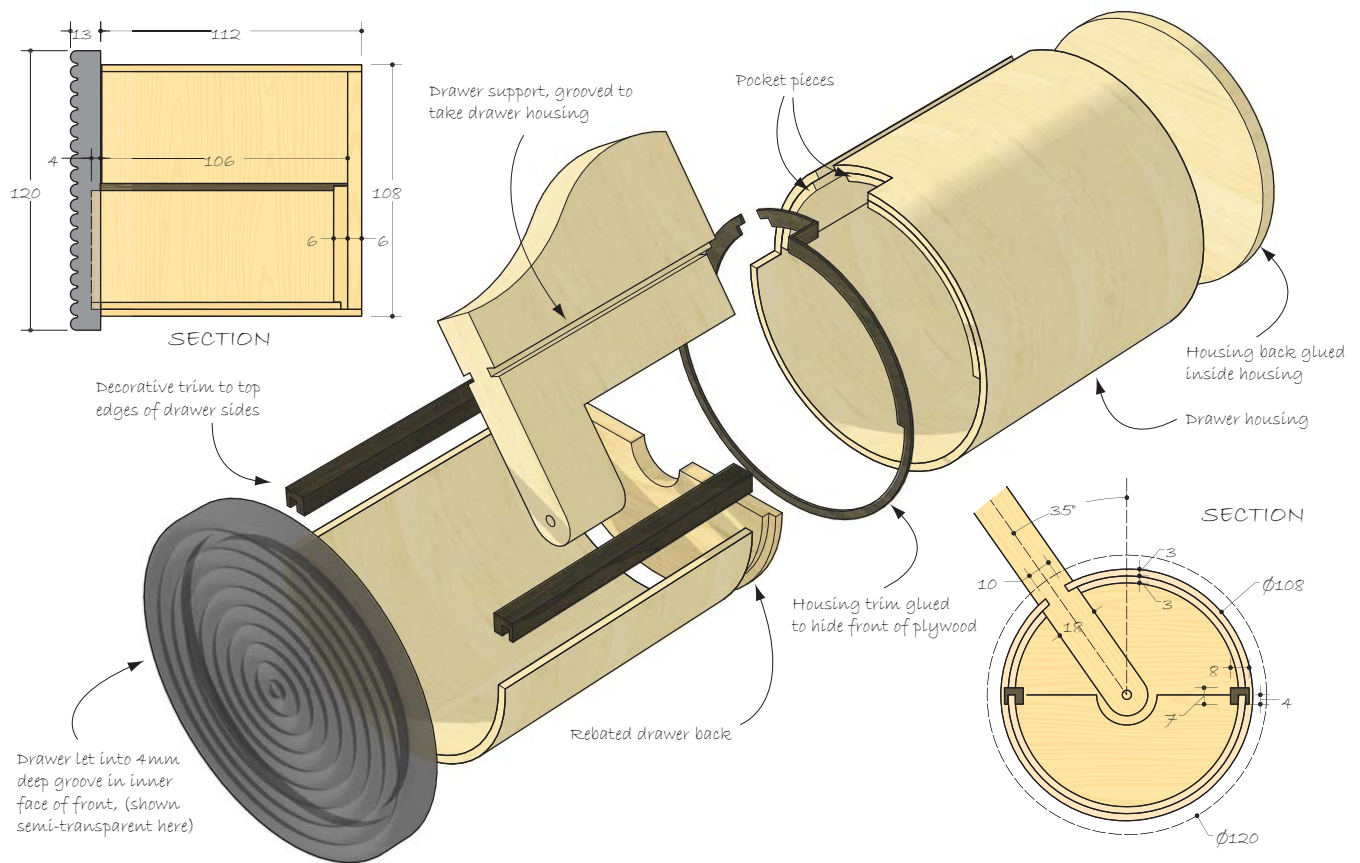
Turning the table on piston fit drawers

Karen McBride unlocks the secrets behind making these unique round drawers for the Patience cabinet

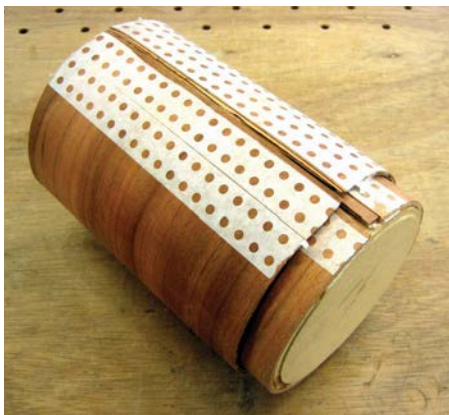
All my initial design work is done with paper and a 6B pencil. I draw with abandon, paying no heed to how my pencil marks will translate into furniture. Sometimes this design process gets me into trouble. In this instance, trouble came in the form of round drawers – but they won't trouble you. It may look complicated but like any other drawer the building process can easily be broken down into small, manageable tasks within any maker's reach. Unlike traditional drawers, a round drawer hangs

freely from a single support. This simple design opens up all sorts of creative possibilities.

A round drawer has four main components: a laminated drawer, a laminated outer housing, a drawer front and a support for the drawer assembly to hang on. For simplicity, the two laminated drawer parts are pressed around the same cylindrical former. To make the slightly larger diameter outer housing, the lamination was pressed over the drawer lamination while it is still on the former. ➤



Shaping up



A typical lamination of drawer box and housing created on a single former

The two laminations are made from five layers of commercial veneer. The cylindrical former must be perfectly flat with parallel sides. Any tapering or waviness to the shape may make it difficult for the finished drawer to open and close. The former can be turned on a metal or wood lathe. After turning on a wood lathe you can glue coarse sandpaper to a straight piece of wood that is longer than the former and sand the sides flat. Measure each end of the cylinder to check the sides are parallel.

Sizing the veneer sheets for the drawer parts is important. The laminations must wrap around the former in as close to a full 360° wrap as possible, without the ends of the laminations overlapping. Don't forget the veneer will expand when it comes into contact with glue so take this into account



Layer the veneers on top of each other in a sandwich as you work

when measuring the pieces.

To create the laminations, the veneer sheets are cross-oriented for stability and strength. The easiest way to spread the glue on the veneer is to make a veneer and glue sandwich, one sheet at a time. Select a glue with a long open time and apply to the first piece of veneer with a fine notched spreader or roller and place the next cross banded piece on top of the glue surface. Spread glue on the second sheet, while it is on the sandwich, and repeat the process with the remaining sheets, topping off the lamination with the last dry sheet. Aesthetically you may find it preferable to use an odd number of layers in the sandwich so the grain direction on the inside of the component matches that of the outside. Depending on the radius of your cylinder, timbers with an open grain



Use whatever means you have at your disposal to hold the veneers onto the former before it goes into the vacuum bag

structure such as oak (*Quercus* spp.) or ash (*Fraxinus* spp.), for example, may fracture along the grain.

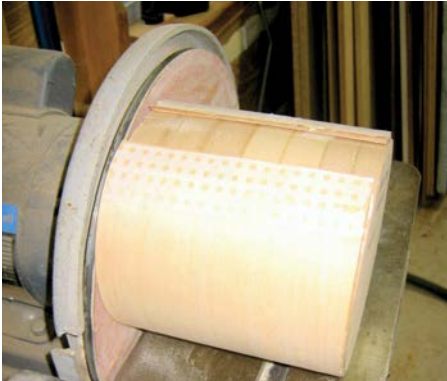
A strap clamp can be used to hold the laminations in place on the former while the ends are secured with plastic wrap. Once the plastic wrap is in place it is easy to cover the former with breather mesh, remove the strap and to place the first lamination into the vacuum bag. This lamination will be the drawer.

Create a second lamination for the housing using the same process but this time leave the first lamination on the former and press the second lamination directly over the top of it. Be sure to put a layer of packing tape or plastic wrap around the first lamination to prevent the two from sticking together in the event of glue squeeze out.

Trimming up

After both laminations have cured, square their ends with a sander or hand plane using the former as a guide. With the square ends of the laminations as a reference, clean up the split down the centre of each lamination. When trimming these pieces, be sure to cut away only the rough edges leaving as much material as possible.

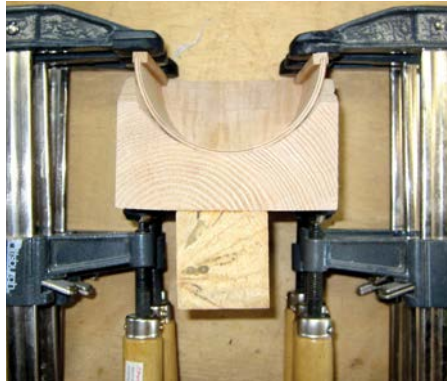
From the smallest diameter lamination cut a semi-circle sized drawer. Save the offcuts from this procedure to be used later as part of the housing. To make the back



Use the former as a support for trimming

for the drawer, use the drawer as a pattern and transfer the shape onto a solid piece of wood. Cut and rebate the back to fit the drawer. It must be an exact fit without deflecting the profile of the cylinder. The back must also be flush to the sides of the drawer. Next, determine the total length needed for the drawer and cut it to length. Glue and clamp the back in place taking care not to distort the shape of the drawer.

The drawer side trim pieces are made from decorative solid wood. Use a large piece



Mount the drawer in a cradle jig to help attach the solid wood lippings

of stock and cut a groove for the trim that mates with the lamination thickness. Fit and plane the inside edge of the decorative trim now – it is difficult to work this edge once it is on the drawer. Cut the trim away from the larger piece of wood and leave excess material to the outside edge of the trim. Cut the trim to length leaving a tongue at the front of the drawer to attach the drawer front. Glue the trim in place using a jig as shown. Once the glue has cured, the decorative trim can be planed to a more delicate dimension.



A strap clamp works nicely when gluing the round backs in place

Putting it all together

The round drawer will be attached in a pendulum fashion on a cabinet drawer support that runs the entire length of the housing. Cut two small dados (grooves) into the cabinet support where the housing slides into place. Measure the distance between the bottoms of each dado to determine the size of the gap needed for the housing to fit to the support. After measuring twice, cut the split in the housing lamination. At this point err on making the housing large by cutting a small gap in it. Later when fitting the drawer, the housing can be made smaller, if needed, by increasing the gap.

As with all drawers, a bit of cutting and final fitting is required. The drawer must first be fit without a front to determine its size in relation to the drawer and the housing. Create a simple T-jig that fits inside the drawer to ensure that the drawer sides sit square and parallel. The jig is far better than a drawer front because it allows you to see

how the drawer fits. If necessary, tack the jig into the drawer with hot glue – my favourite shop assistant.

Mount the housing on the cabinet by sliding it into place from behind. Don't forget to plan for this rear mounting in your cabinet design and assembly process. Slip the drawer with the jig still in place for a test fit. This is only a rough fitting to determine the size of the housing. If necessary, modify the depth of the dados and the gap in the housing so the components mate nicely. You are looking for three points of contact – two at the sides and one at the bottom. The final fitting will happen later after the pocket is created for the drawer.

With the housing on the cabinet support, transfer the diameter from the inside of the housing to the wood for its back. The back is simply a round disc, of any thickness, glued to the inside of the housing. Without a rebate, the housing has a clean look when it is seen

in full view. If the housing was made too small earlier, you can recover here by sizing the back to make the housing slightly larger. Test fit the drawer again with the housing back in place. Glue the back on the housing.



Grooves in the drawer support are used to locate the drawer housing



This drawer sizing jig may appear crude but it's an essential part of the build process



Test fit the housing on the mounting arm and assess the need for any adjustments to the drawer and components

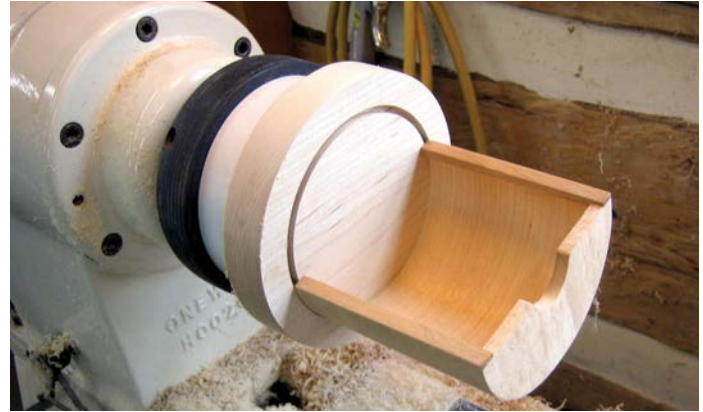


Trimming the housing to length while it hangs on the drawer support

Pocket housing



While you've got the drawer front on the lathe, cut the groove for the drawer box



Test fitting the drawer in its groove in the drawer front while the drawer front is still on the lathe

It is now time to create the pocket for the drawer using its cut-offs. These cut-offs serve two purposes when glued in place. The upper edges of the cut-offs create rebates where the housing sits in the drawer support dados, while the lower edges of the cut-off pieces create a pocket for the drawer. With the housing and drawer mounted on the cabinet, measure and trim the cut-offs to size. Test fit the drawer again with the cut-offs clamped in place. When gluing the cut-offs in place leave the housing and drawer mounted on the cabinet as a jig to position the pieces. Wax the drawer and the inside of the housing to control glue squeeze out. Glue the cut-offs in place.

With the fussy work out of the way, it is now time to have some

fun on the lathe. Turn the drawer front to size and add a flourish to its face. The drawer front can also be dished out on the inside if you wish. The only mandatory requirement is to create a groove to hold the drawer front on the drawer. I use a vacuum clamping chuck on my lathe to hold the work, eliminating the hassle of working around screw holes or chuck fittings. Test fit the drawer on the cabinet one last time with the drawer front on but not glued in place. Plane the drawer's decorative trim or adjust the drawer front groove so the drawer slides nicely. Glue the drawer front on the drawer and fill the remaining exposed groove with coloured epoxy or a scrap from the inner or outer laminations.

Finishing touches

Now all that remains is to hide the plywood look on the front of the laminated housing. Cut small, thin trim pieces to cover the exposed end of the lamination leaving excess overhang to be trimmed flush after the glue has cured. Glue the trim in place with epoxy as an adhesive and hot glue as a clamp. Be sure to wax the prefinished housing and don't clean up epoxy that oozes because it will simply pop off when the decorative trim is cleaned flush with a fine file.

The drawer assembly is ready for the final mounting on the cabinet. Spread a small amount of glue in the dados on the drawer support and on the tongue for the housing and slide the assembly on the cabinet for the last time. You may drive a screw through the back on the housing into the cabinet support for added strength. I'm excited about the unlimited creative possibilities that round drawers offer and I'm eager to see other furniture makers experiment with the concept.



Hot glue is the perfect third hand when conventional clamps don't work



Use off-cuts from the drawer to locate the position of the drawer box within the housing



The hinged drawer is held closed with a concealed magnet



On the Patience cabinet the drawer support also serves as the pivot point for the door

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PHOTOGRAPH BY ADRIAN LLOYD

Our correspondent: Sticky fingers

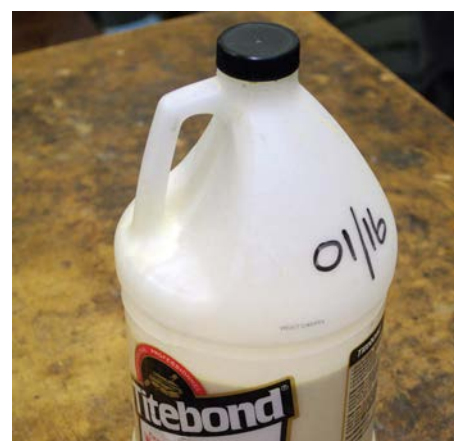
John Lloyd returns with more top tips for stress-free glue-ups

A little while ago in 'Our correspondent' I had a look at the psychological turmoil that tends to accompany the process of applying glue to pieces of wood, so now it's time for some more information on glues and some foolproof, sanity preserving strategies for calm, considered and, dare I say it, enjoyable gluing.

Over the years, *F&C* has acquired readers from all four points on the compass and since going digital in 2013, that trend has increased. You can find us anywhere in the world with a link to the web. As the content of the magazine is a true reflection of our readership, we like to take you on a workshop tour of the globe. This month we're back with John Lloyd, who helped us with our glue-up traumas in *F&C* issue 243.

Glue

When you're thinking about glue, bear in mind that even the most exotic formulation is likely to only represent a small proportion of the overall material costs for any project, it is also the vital thing that's going to hold all of those lovingly hand-crafted pieces of wood together. So don't be seduced by that 50 litre bargain buy, quite apart from anything else, glues have a shelf life, and some of them are remarkably short, so as a general rule, buy the right glue for the job, even if it's expensive, preferably in smallish quantities. With this in mind, it's a good plan to add a date to the container as it comes into the workshop, read the label and check for a 'use by' date or guidance on life expectancy, it's usually somewhere between three months and two years! If you're unsure whether the glue you have is still going to cut the mustard, you could always do a test glue-up on a couple of pieces of scrap, just prepare



Adding a date to the bottle will remind you when it's time to replace with fresh glue

the surfaces, glue and clamp, then try to split the joint along the glue line with a chisel; if it makes a clean break right along the glue line, the glue has failed, what you want to see is a nasty splintered mess where the wood breaks around the glue line – as it says on the bottle, the glue should be 'Stronger than the wood itself'. If in any doubt, bin it and buy some more, the prospect of glue failure is just way too traumatic to even contemplate.



Glue can be checked for strength by using a chisel to try to split the wood along the glue line

You may have your favourite, general purpose glue that you've used for years, you might enjoy the clinical precision of weighing, combined with the 'custard making' process, required to prepare a 'UF' glue like Cascamite, you might even be seduced by the romance of mixing and heating animal glue, all of these options have their place, but remember, there's actually a reason, beyond the commercial appetites of marketing departments, that there are so many different types of glue. Some glues are better at doing things than others, they have various properties, they might be water based or solvent based, there will be wildly different open times and set times, some will be gap filling, others will creep, temperature sensitivity can be vitally important, 'White' and 'Yellow' glues generally don't like the cold but set worryingly quickly when it's hot, some are only for internal use while others will happily resist the rigours of an Arctic, seawater environment.

There's a D1 to D4 'Durability' classification, indicating how waterproof a glue is, but I find that other properties that are signified by this classification are more important to me as a furniture maker. If I want a glue to allow a little 'creep' or 'give' in a joint, I will opt for a D1, but for a stiffer joint, a cross-linking D3 glue would be good. But for any external work, if I really want to avoid sleepless nights, I would use a completely reliable boatbuilding glue like West System epoxy, not a D4 PVA.

I will often use two or three different types of glue for any given making project. Choice of glue might take into account things like, ambient temperature, PVAs just don't work when it gets cold and set way too fast when it's hot but otherwise they're very user-friendly for many unchallenging glue-ups.



A nasty ragged break shows that the glue is still 'stronger than the wood itself'



Powdered UF glues must have the powder and water measured accurately to ensure success



The 'custard technique' of adding only half the water for the initial mix avoids embarrassing lumps

A complex assembly needs a glue with a long open time – maybe a UF or even fish glue. A tightly curved lamination in solid wood needs something completely reliable that sets like concrete, perhaps a boatbuilding glue, like West System epoxy.

As new glues come along I occasionally change my preferences for specific gluing challenges. For a long time I just used Cascamite when laminating strips of solid wood, this is a glue that has endured a bit of an identity crisis changing from 'Cascamite' to 'Extramite' to 'Polymite' and back to 'Cascamite' again, another fine piece of work by the marketing department. UF glues don't 'creep' and are strong enough to hold boats together so they must be the perfect choice for laminating chair legs mustn't they? But UF glues aren't good for your skin, the powdered glue and the water need weighing accurately, there's always the chance of mixing too much or, worse, too little and if moisture has got into the powder while it's being stored it won't set properly, in short, it's a great glue that's very strong and has a reasonably long open time but it has a long set time and can be a little bit of a pain. Recently we've been trying Titebond 'Extend' for solid wood laminating with excellent results. I wouldn't use it for laminates under large amounts of tension or general gluing duties around the workshop, it's just a bit 'gloopy', but for general laminating, and if you need a bit more time, this is pre-mixed, water washable, stress-free happiness in a bottle.

Another excellent UF glue is the version that's a pre-mixed resin with a powder hardener. It's an expensive glue with a short shelf life, but it's possible to control the set time with the quantity of hardener used, and it doesn't add any water to the surfaces being glued, this can be a huge benefit if you

want to avoid problems with wood expanding during the gluing process, perhaps when assembling and pressing very thin laminates, it's still water washable though, making it really user friendly.

Epoxy is an impressively muscular glue, but accurate mixing, long set times, unpleasant fumes and the risk of causing skin problems mean that this is not a glue that I would want to be using on a daily basis, but for a mighty glue that can fill gaps and maintain its remarkable strength across the glue line, this can sometimes be the only real choice.

Polyurethane is another glue that I find is not particularly pleasant to use, famous for the 'black finger' effect although this can be avoided by wearing gloves or can be removed with acetone. Generally it doesn't mind the cold or the wet, so sometimes it's appropriate, but it always needs cramping because it foams and expands as it cures.

At the end of the day, the easy glue choice is always going to be a 'PVA', whether it's a 'white glue' or a Titebond aliphatic resin, but don't turn your back on the other glues, and don't be frightened to use several different glues on one project, an informed, considered glue choice will often be the key to controlling stress levels.

Spreading

Having chosen your glue, you need to consider getting it onto the wood with some degree of control. How much glue? First, take your guidance from the label on the bottle, the people who make the glue generally know most about how it should be used, if they suggest a 'heavy spread on one surface' it's probably unwise to think that you know better. However, if there's no instruction to the contrary I will

generally go for a reasonable spread of glue on both surfaces – the last thing I want is glue starvation, I always want to see that comforting line of glue squeeze-out along the joint. Moving with calm, but swift, precision is what you're after and the correct choice of applicator will help with this endeavour. For small areas I quite like those little disposable brushes that come all the way from Taiwan, but the bristles, which are far too long and floppy, need a trim with a pair of scissors to stiffen them up. If you know anyone in the medical profession, see if they

can supply some tongue depressors, the plastic ones are best but they seem to have mainly switched to wood, NHS cost-cutting seems to even be affecting the woodworking industry now! Gluing biscuits, obviously not the chocolate variety, can be a bit of a time-consuming fiddle. A Lamello dispenser will get the glue into the slots quickly and efficiently, although Swiss engineering does come at a price. For larger areas, a roller is a great option, the cheapest of these will be a small roller with a gloss-paint, foam sleeve, or there are rubber rollers with

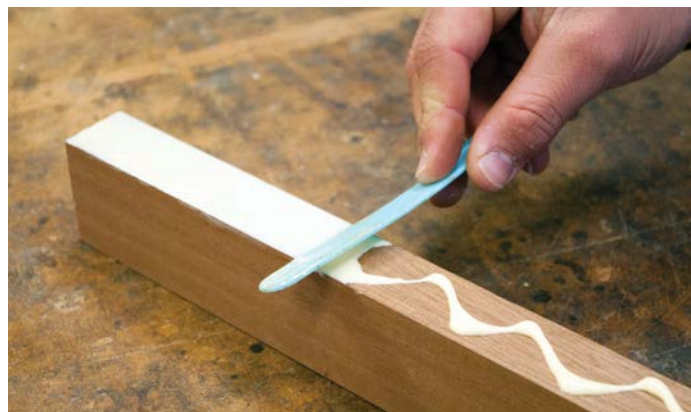
gravity feed hoppers. Don't even think about the Lamello pressurised system unless you've just won the lottery though.

With the glue and applicator selected, all we'll need is a cunning plan for stress-free cramping, which will be the subject of my next article. *F&C*

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



A glue brush will perform much better after a hair cut



A tongue depressor is an excellent spreading tool!



A notched spreader is great for fast, even spreading over a large area



Gloss paint rollers work well once they are full of glue



The Rolls Royce of glue spreaders from Lamello

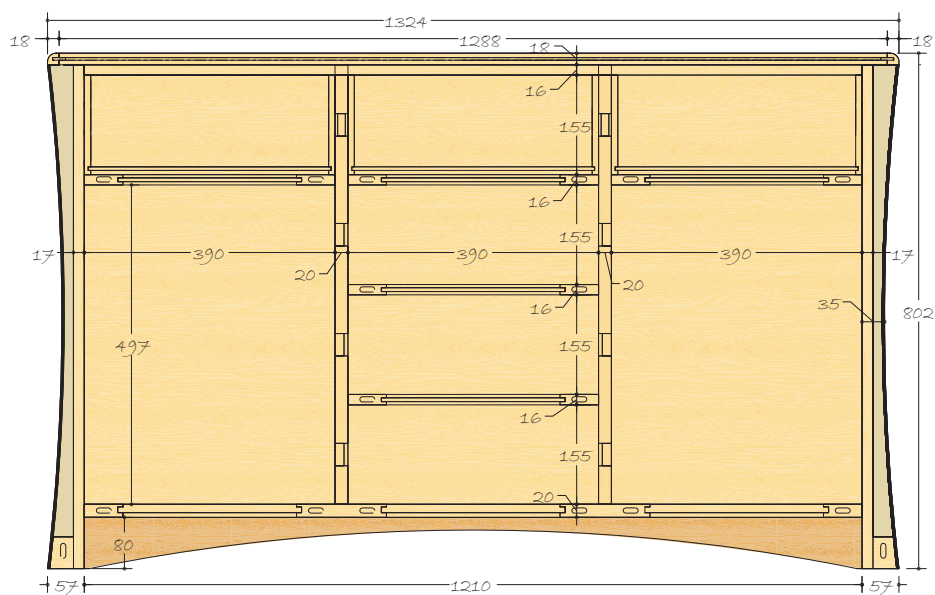


Deconstructing the Oak Within sideboard

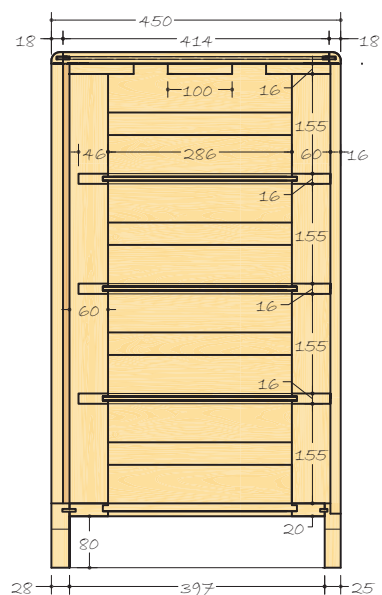
Chris Wiseman explains some of the key features on the first ever sideboard he made as a student

PHOTOGRAPHS BY WILL ACLAND FROM WATERS & ACLAND
Eighteen months ago, as an amateur woodworker, I began my journey to become a skilled cabinetmaker at Waters & Acland's fine furniture school. Working through set projects of increasing complexity to develop the essential skills, I eventually reached the stage where I had to design and make my very own pieces of furniture. Incorporating everything I had been taught, I set off to produce a sideboard to the best of my abilities. The Oak Within sideboard is one of my second main creations that I recently completed and I am very pleased with how it has turned out. Before

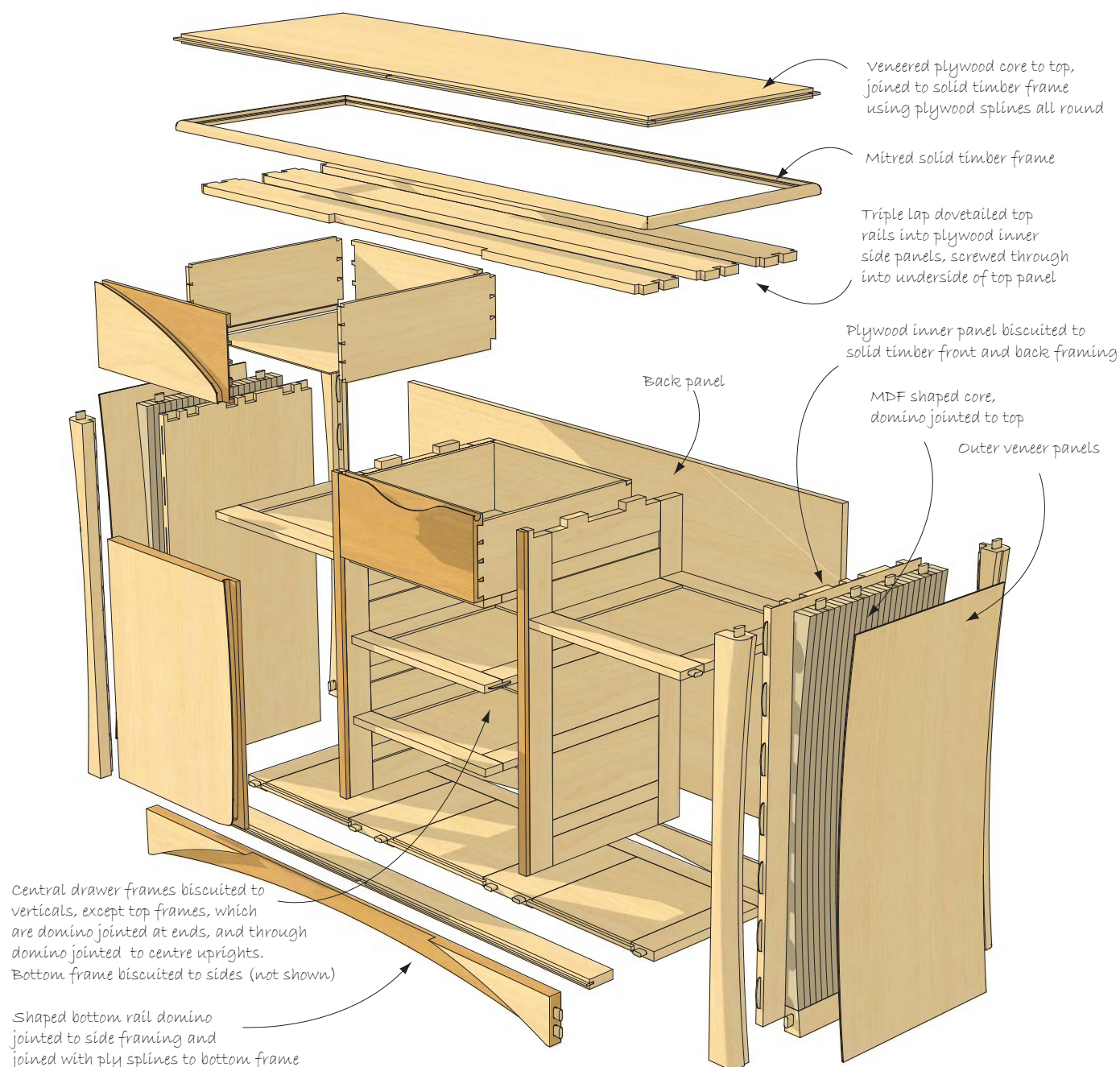
I would have looked at a piece like this with admiration and wonder but with little idea of the patience, care and appreciation of the timber that is needed to create it. Now, not only can I fully appreciate the time and effort involved, but also enjoy the feeling of accomplishment that comes with creating such works of art. Although primarily a traditional frame and panel construction, what define this piece are the curved sides and integrated handles on the drawers and doors. This article explains how I, with guidance from head tutor Graham Loveridge, decided to tackle these two features. ➤



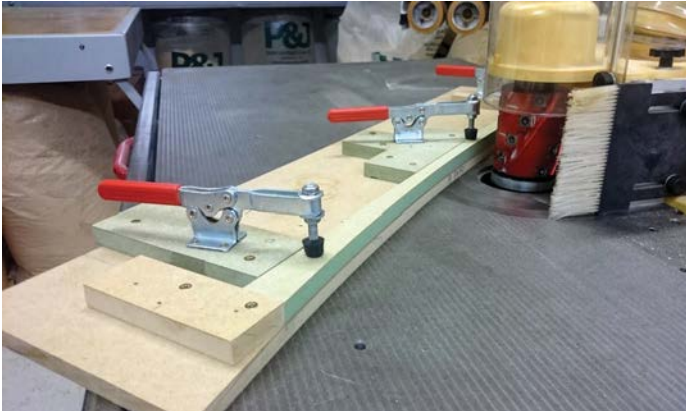
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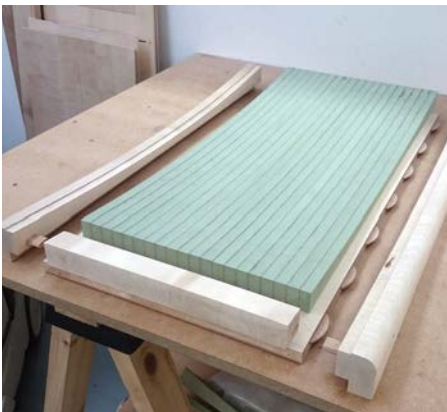
About those curves



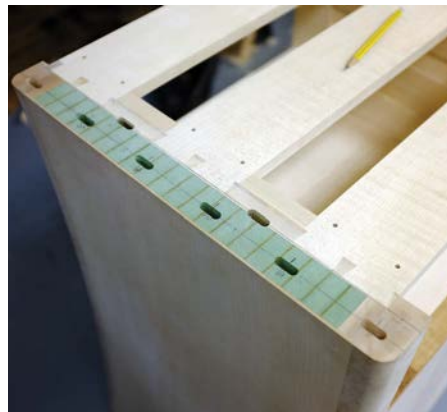
Each MDF strip is spindled to the exact same size



Any discrepancies were taken away by using a stiff card scraper. Wear a dust mask!



Exploded view – side rails are biscuit jointed to the veneered ply panel



Top rails are dovetailed in and Dominoes inserted to secure the top ensuring no movement



Oiled and finished!

One of the first challenges to work out on this project was the curved sides and how to produce a solid, load-bearing part that is so integral to the structure. I could not afford for any movement as they had to flow seamlessly into the front, top and back of the cabinet and so we came up with two possible solutions: either veneering a laminated structure or a solid form. I decided on the latter after weighing up the pros and cons of a one-off build. Had this been something I would be making more than once, I would have considered creating a former and laminating aero ply to create an arc. This arc would then be used on the exterior with a flat veneered ply panel on the inside, leaving a void between the two. A key benefit to this method would be less weight overall and a faster construction time, but only once the former had been made, so it did not seem worth the extra time for a one-off piece. The route I took was to create a solid core consisting of numerous strips of MDF shaped to the correct radius, glued together and then veneered on top. Although heavier, it would create a completely solid piece with no movement issues. Epoxy resin was primarily used for the glue-up as conventional glues such as PVA and powder glues add moisture, risking potential movement.

The veneers for both sides, as well as for the whole piece, were made in the workshop and calibrated to 2mm from the same stock as the rest of the sideboard. This keeps the wood consistent in tone and grain structure,

something that is very hard to match up when sourcing veneer from a different tree. As the inside of the panel has a drawer running along it, the thick veneer allowed for any truing up of the carcass and for general wear from drawer use, which would have been too risky with regular 0.6mm veneer. On the outside the thickness allows for any discrepancies when flushing in with the top. When it came to fitting the veneer to the outside face I used a finely tuned block plane, taking whisper shavings at a very slight angle so that the panel effectively wedged itself into the rebates. The reason being that, as the panel is pushed in it compresses the joint line, making it as invisible as possible. Not an easy task on light woods such as sycamore (*Acer pseudoplatanus*). However, it is important not to plane at too much of an angle. At first the joint line may look perfect but as you start sanding back, that glue line will get bigger and bigger!

Once the sides were made, they were jointed to the frame and panel base as well as to the drawer shelf using Dominoes. They are stronger than biscuits and strength is key in such structural places. The three top rails were then dovetailed into the top pulling it all together, unfortunately never to be seen again once the top was on. This was the main reason for having the plywood back, for it allowed a solid structure to dovetail into. Had the whole side panel been MDF, the fibrous structure of the

material would not have been sufficient to joint into. The top of the sideboard is veneered ply for the same reason as the sides; there cannot be any movement. This was screwed down from the underside of the top rails, but when it came to the edges they were again reinforced using the Domino jointer; it's a handy tool! There is no shadow gap or dividing line to hide any discrepancies in movement, so to ensure the top sat flush with the sides they needed to be securely anchored down and pulled in tight. Screws alone just wouldn't have been adequate for the job.

Learn from your mistakes

Those with keen eyes will have probably looked at the picture of the construction and asked themselves why I didn't just create the MDF, ply and veneer core as one and then joint that to the solid side supports instead of what looks like a rather complicated approach. Well you are right; I basically made a job more complicated for myself by throwing in rebates here and there. Wanting the piece to be the best it could be, I kept playing with ideas and designs even after I had 'finalised' it. This resulted in me changing a critical area right as I started to make it. Rookie error but it's all part of the learning process, right?

The integrated handle



Gradually routing away the front leaving about 5mm from the line



With the template I can rout to the final shape. A Perspex base is added for extra support on the router



A bearing is added to the bit to run against the template



A sacrificial piece of wood is clamped to the side to avoid breakout



The painstaking process of sanding up. But it sure does leave a beautiful finish!



Handle detail flows into bottom rail



Stubby dovetails were needed here

I love this feature; it brings seamless integration between the handle and the rest of the piece. It is perfect for that sleek look that also adds an element of momentary curiosity as to what is going on. Throughout, I tried to apply my newly acquired knowledge of timber movement and making methods. Sketching down ideas is one thing, but once you understand the processes involved, it opens up whole new possibilities of what's feasible and what isn't. Therefore, when it came to sketching out the front of this sideboard, I was constantly thinking about how it was all going to work and coexist.

The biggest worry was movement from removing so much material on only one side of the drawer. We decided it would be safer to apply the veneer and remove material after

the drawer had been made and fitted, which I'm sure you can imagine, is a nerve-racking process to do once so much time and effort has already been invested. Nevertheless, it helped in two ways. Firstly, it allowed the finger pulls to flow perfectly from drawer to door as they would be marked out after, and for the grain on the sycamore veneers to align. Secondly, the structure of the drawer box would keep the drawer front from wanting to twist or at least greatly restrict its movement.

The whole process was actually very satisfying and not as scary as I initially thought it would be. Even routing out the finger pull itself was rather pain free, although the same cannot be said about sanding the inside of it, especially when you

have big fingers! As is the general rule with most routing, not taking too much off in one go is key here. I found that three passes with the router worked perfectly. The first pass removed the majority of the wood; the second was with the bearing up against the jig, which created the final shape; and then with the third pass I ever so slightly tapped the jig back just a fraction to take a final quick skim. This leaves a nicer finish with no tears and, most importantly, no burns. Two passes would have probably been adequate but the bit I used had seen better days so this technique helped.

The finger pull handle runs from the top corner of the drawer all the way down to the corner of the bottom rail. That part on the rail is purely cosmetic to continue the

flow, but does so happen to come in handy when lifting the sideboard. The run down the door required some tactical placing of tenons since the last thing anyone wants is to expose hidden joinery where it is not welcome. The door construction itself is an

oak frame and plywood panel, flush on the front and inset on the inside. Again, because of the veneer, the door needed to be solid. They were hung using solid brass hinges and held in place with rare earth magnets. An unexpected gem was found when I first

shut the door with the magnets in place. Due to the fine gaps around the doors, the air pressure acted as a cushion, making it almost impossible to slam. The magnets then gently pulled them closed. Soft closing doors, what a bonus!

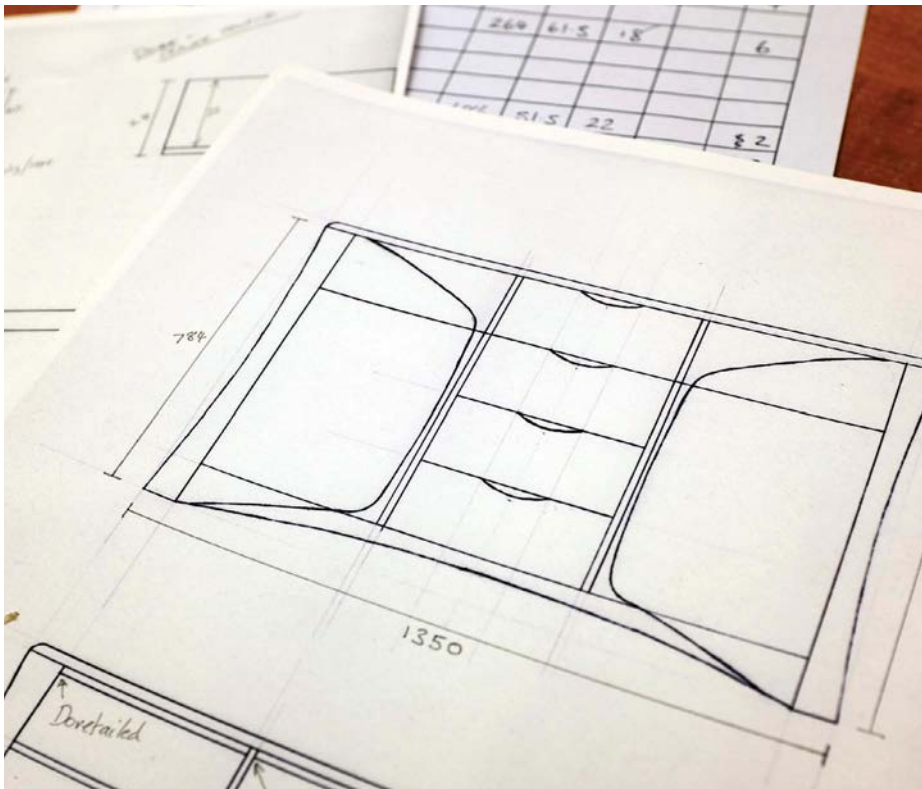
Conclusion

This project really had me thinking about problem-solving, a key element of cabinet making. These problems included working out how the timber would behave, how I would approach the build and how it would all come together to form a piece that was both aesthetically pleasing and functional. There have been parts to this sideboard that I spent much longer designing and working out than actually making. But then if you don't, you will never end up with something (at least in your own eyes) that is as good as it can be. I wanted to move away from my comfort zone and go far beyond something I would have ever thought was possible 18 months ago. Now, having created this sideboard, it has made me even more eager to push myself further and to see where else my creativity and imagination can take me. The joy of woodwork!



Making the Oak Within sideboard pushed Chris out of his comfort zone

Finding the Oak Within



Sketching the sideboard helped Chris to develop the ideas behind the design

My design brief was to create a piece to practise making 'piston-fitted' drawers, as well as including some doors. That naturally lent itself to producing a sideboard. I imagined having something sleek, smooth and simple, yet striking. The finger pull style was the obvious choice for me and also ticked the box of something I hadn't practised before. Once I started sketching, the cabinet



Frame and panel construction



Drawer detail

evolved and I suddenly realised that there was a resemblance to a tree in the design, so I played on that for a while. In some ways it looks like two swinging saloon doors opening up to nature, the tree within. I have to admit that wasn't initially my intention but sometimes when sketching away, you find 'inspiration' was sitting there the whole time. *F&C*

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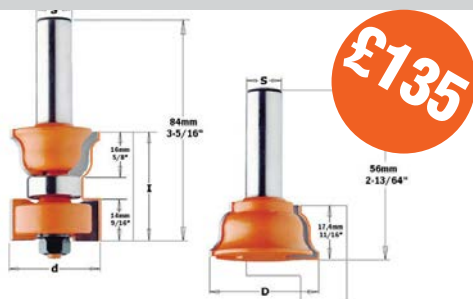


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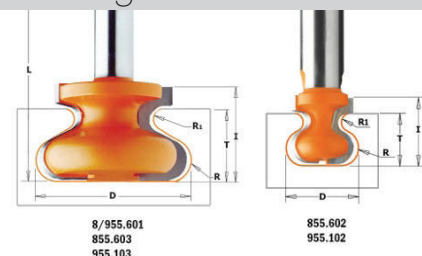


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The École Boulle

Amber Bailey describes her experience as a student at the prestigious École Boulle

PHOTOGRAPHS BY AMBER BAILEY, JESSICA D'HERMISE, STATION

Having been aware of the École Boulle for a number of years, in September 2015 I was finally given the opportunity to study there for a year. As a keen marqueterian (or should I say marqueteur) I was eager to get into the marquetry workshop to use the traditional French tools that are conventionally unavailable in British workshops, and to learn their time-honoured techniques.

Set in the once craft district of Le Faubourg Saint-Antoine, Paris's most famous

decorative arts school thrives and celebrates the ancient crafts that became one of France's greatest exports.

Paris is internationally renowned for its history of producing the highest quality furniture, attributed to the lavish tastes of former monarchies who took to having specially appointed royal craftsmen and the officially titled Manufacture Royale des Meubles de la Couronne; the Gobelins Manufactory was the Royal Factory of Furniture to the Crown.



The Gobelins Manufactory is now open as a museum

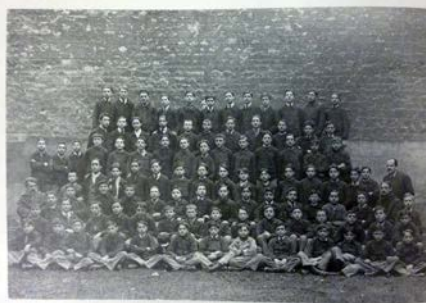
History of the school

The year 2016 marks 130 years since the school opened its doors to students. The establishment of the school was a direct response to the crisis in the lack of craft teaching after the abolishment of trade guilds by the National Assembly in 1791.



The 1913 school prospectus

Compared to the many students in attendance today, the school began with a mere 40 students. This included eight cabinetmakers, five chair makers, nine woodcarvers, 12 upholsterers and six woodturners.



The school's very first rotation of students, all smartly dressed in shirts and ties, a uniform rule that is no longer stipulated

Other courses quickly followed, and the number of students quickly grew. Timetables were divided up into both practical and theory study, totaling over 50 hours of study per week from Monday to Saturday.



The chair making workshop strewn with wood shavings

Range of courses

Today, the school offers a huge variety of creative courses in artistic crafts and applied arts, working with just about every medium imaginable, no longer limited to just furniture but spatial and product design as well.

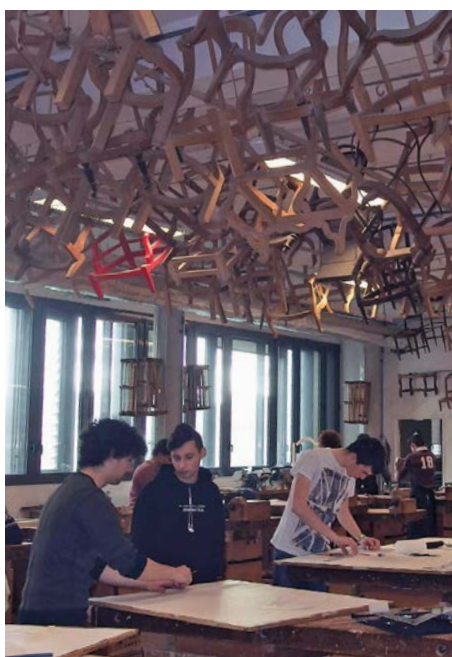
For woodworkers there is something for everyone, the marquetry, restoration, cabinetmaking, chair making and woodcarving workshops are filled with equipment and tools, both traditional and state-of-the-art. Each of these workshops offers qualifications under the tutelage of various highly knowledgeable and skilled professionals. All courses allow students access to industry clients and all classes are still kept to relatively small numbers so that students have the opportunity for one-to-one tuition.



The marquetry workshop



The restoration workshop



The chair making workshop



The woodcarving workshop



The cabinetmaking workshop

Namesake – André Charles Boulle

The school is named after the cabinetmaker to King Louis XIV, André Charles Boulle (1642–1732). A pre-eminent craftsman renowned in the field of marquetry, Boulle's name was lent to

the specific art of marquetry that involves superimposing brass and tortoiseshell (or similar) within one another, now named *boulle* marquetry.



Commode by André Charles Boulle at Vaux-le-Vicomte



My attempts at *boulle* marquetry aren't quite a patch on those of the man himself!

The marquetry workshop

As a student of marquetry I have more insight into this workshop than any of the others within the school, although this is not to say that I don't find myself popping into other workshops seeking equipment or advice. As a former restoration student I find myself somewhat drawn to the restoration workshop, the benches surrounded by antiques is a scene wonderfully familiar to me.

The marquetry workshop is a mixture of year groups working alongside one another; groups of students will be learning

techniques together following the same exercise, while others have progressed on to their personal projects. This is when things start getting really interesting and experimental, not a day goes by where someone isn't dying veneers or covering the walls in enormous wall hangings, you can never quite second-guess how things are going to end up looking.

I came to Paris with the sole intent of learning Boulle marquetry and mastering the marquetry donkey, the majority of students sensibly gravitate towards the industrial

electric fretsaws, while I am left huffing and puffing at the donkey and cursing the weight of the packet that I am cutting.

While I have been sticking to a very traditional type of marquetry, other students let their creative juices follow, creating contemporary designs. The workshop itself allows a lot of freedom, there is very little that cannot be done and students are encouraged to be inventive while still maintaining the high standard of traditional quality and techniques long associated with the marquetry course.



Soraya Abbassi, a first-year student on the DMA 1 working on a set exercise, fitting the project onto the *cale tendue*, prior to gluing up



Vincent Golz-Wagner busy working at the electric saw



Marquetry tutor, Monsieur Pierre-Henri Beyssac assisting Laurie Cabrera with the finishing of her project



Laurie with her beautifully finished project

Pierre Ramond

Marquetry was not always a specifically taught subject at École Boulle, it certainly did not warrant the sort of workshop that can be found in the school today. It was in fact the late Pierre Ramond who, on joining the teaching body in the 1970s, set about establishing a marquetry course of high repute.

Regarded as a perfectionist by his contemporaries, even today students are well aware and irrefutably in awe of the prestige that Ramond brought to the school. It is worth seeking out his books if you want to know more about marquetry.

Today it seems that marquetry's leading practitioners were all once former students of Ramond at the École Boulle, including *F&C*'s very own Yannick Chastang.

While in Britain we have seen the recent demise of a number of craft courses, France is in no danger of suffering the same fate. École Boulle is booming with talented and highly skilled individuals ready to be the craftsmen of the future.

For further information visit:

www.ecole-boulle.org
www.yannickchastang.com *F&C*

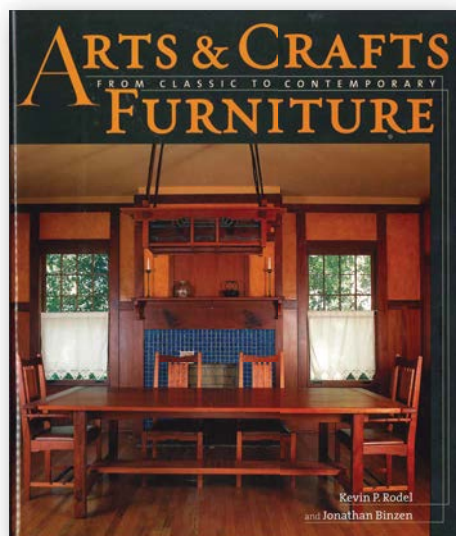
Workshop library

We review three books, *Arts & Crafts Furniture: From Classic to Contemporary*, *British Saws: A History and Collector's Guide* and *DIY Furniture 2*

BOOKS

Arts & Crafts Furniture: From Classic to Contemporary

by Kevin P Rodel and Jonathan Binzen



The Arts and Crafts movement inspired countless furniture makers in England, Europe and America, many of whom developed their own interpretation of how to apply the tenets of Arts and Crafts to furniture making. In this book, Rodel and Binzen carry out an extensive survey of Arts and Crafts furniture makers to provide an excellent introduction to the movement's key names and works. Set out chronologically, *Arts & Crafts Furniture* starts with the

work of William Morris and the Cotswold Vernacular furniture he inspired, before moving to European Arts and Craft schools and finally covering American arts and crafts including the work of Gustav Stickley, the Prairie School, Green & Green to name but a few.

Each chapter is logically set out, beginning with an overview of the historical and social context for the specific movement or makers in question, and then examining their key contributions to arts and crafts furniture. Text is kept brief and to the point, and most of the focus of the book is on detailed photographs, all of which are of a high standard.

This book makes an excellent introduction to the Arts & Crafts movement, and should provide a great deal of inspiration to furniture builders.

Kieran Binnie

Published by Taunton Press

ISBN: 9781561583591

234 pages £29.99

DIY Furniture 2

by Christopher Stuart

This title is the follow-up to *DIY Furniture*, which was published in 2011. It features 30 brand-new designs, showing you how to make unique items of furniture from materials that you might not immediately associate with the process. The projects are divided into seven categories: shelves and storage, tables and desks, seating, lighting, bedroom, outdoor and 'miscellaneous', which includes items



such as candlesticks and bookends. Each project is accompanied with hand-drawn diagrams, photographs and short, step-by-step instructions. The instructions are easy to follow although the type used is rather small! The projects range in difficulty from simple makes aimed at beginners to more complicated designs suitable for those with a more experience.

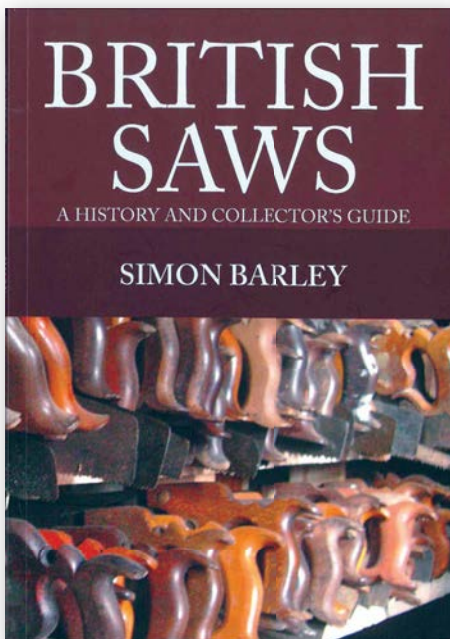
According to the sleeve notes the designs have been contributed by 'leading designer-makers' and all have a contemporary look. Many of the projects make clever use of found objects and materials, such as pizza trays being turned into side tables and a chair made from PVC pipes. Although some of the designs presented here may be a little simple for readers of *F&C*, it's sure to get you thinking creatively about materials.

Published by Laurence King

ISBN: 9781780673677

144 pages £17.95





British Saws: A History and Collector's Guide

by Simon Barley

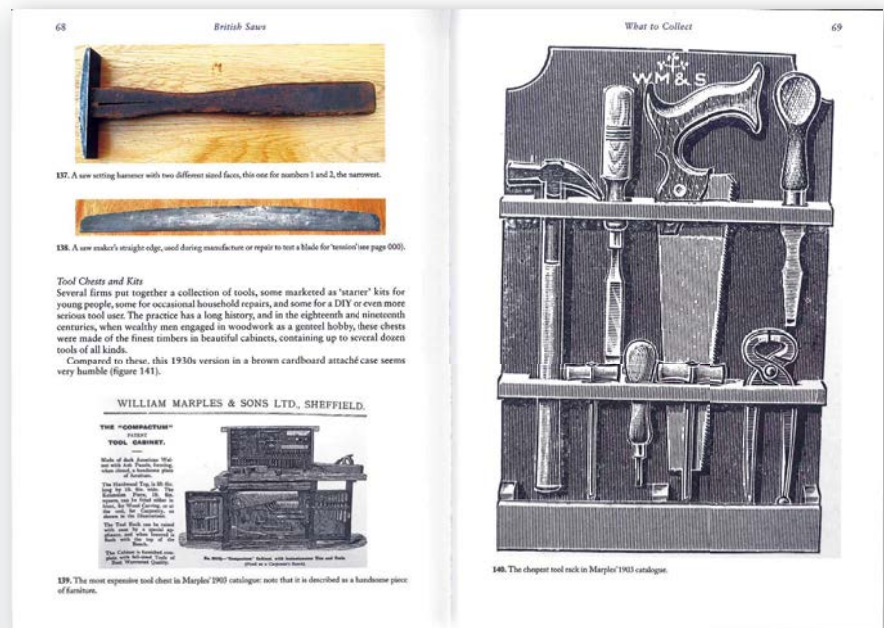
It doesn't feel like that long ago we ran a review of Simon Barley's major reference book *British Saws & Saw Makers* from 1660 (F&C 227 to be precise). We gave it a resounding thumbs up as I recall as it seemed to cover as much as anyone would ever want to know about British saws and sawmaking. However, Simon's latest book *British Saws: A History and Collector's Guide* manages to put a little more meat on the bones for anyone looking to learn more about the social history surrounding our industrialised past and how a city in South Yorkshire developed an industry that would eventually have a hand in shaping every corner of the planet.

At 96 pages long and with plenty of quality colour images *British Saws: A History and Collector's Guide* is a fraction of the size of the earlier book but still manages to capture enough information and give plenty of tips for the would-be collector. The author spares us some of the minutiae that, while critical to such a study, might not make interesting reading for everyone. I think we will all be in his debt for this for a very long time. There are plenty of tips on where and how to continue your research, however, if you are inclined to dig a little deeper.

Identifying some of these old tools is never going to be an exact science but a few hours spent with this on your lap should at least take some of the guesswork out of buying blind and ultimately help us to preserve these incredible feats of engineering and technology for future generations. In a sequel that could just as easily have been a prequel, it's a very contemporary strategy and one that I'll be referring to for years to come I'm sure.

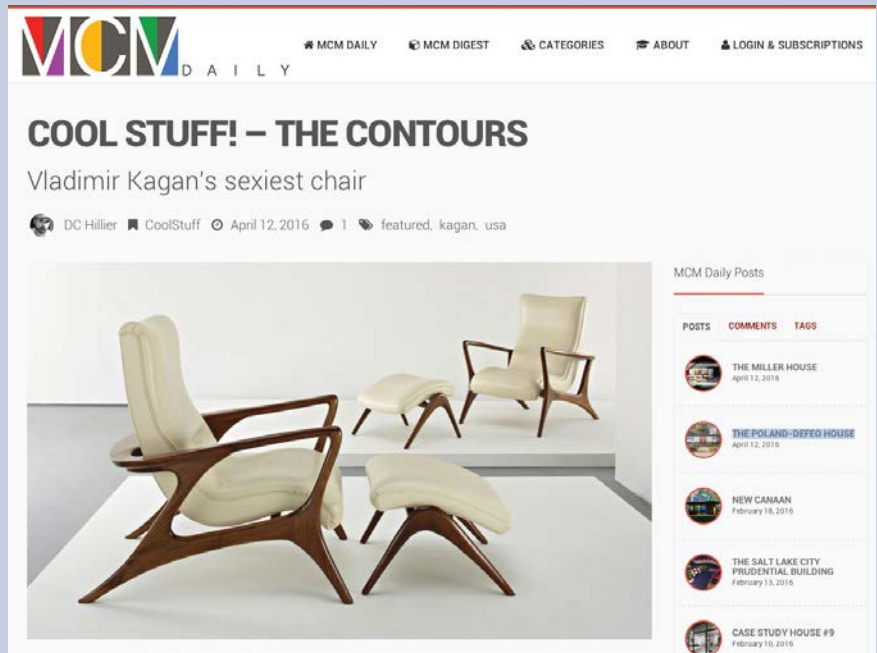
Derek Jones

Published by Amberley Publishing
ISBN: 9781445649740
96 pages £14.99



Website of the month

Mid Century Modern Daily



This was great little find from the Instagram feed of @dc_hillier. MCMDaily is a cross between an online magazine and forum devoted to sharing information about the furniture and design from the golden era of the mid 20th century; 1930 to 1960. There's plenty of factual content to support the fabulous images and as such it's an excellent resource for followers of the style and contemporary designers.

This period is gaining the attention and respect it deserves and content like that found on MCMDaily will surely help to promote a more intellectual and rounded appreciation of the designs

to a wider audience. The categories include sections on architecture, decor, designers, furniture and homes with a smattering of interviews with people actively involved in the industry. The articles are undoubtedly feature based but blog style in presentation with scope for readers to comment and start discussions of their own.

Easy to navigate with archived material there's plenty to get your teeth into even though as far as we can make out the site has only been around for a year.

Website: www.mcmdaily.com

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It smells good from fresh-cut timber and sun-warmed grass. On the log bed of the Farmer's Sawmill lies the log from a pine tree that Björn Christiernsson has just felled in his own garden.

"If you want high-quality timber, sawing it yourself is the way to go," says Björn as he strokes the surface of the first cut.

In his house just south of Stockholm, we meet the carpenter Björn Christiernsson, in the middle of his much longed-for summer holidays. His new job at the Swedish TV channel TV3 has taken much of his time and energy. Among other things, Björn is the host of the TV show Husräddarna (House Rescuers). When filming the show, he got the opportunity to test his latest sawmill from Logosol, the Farmer's Sawmill.

"I brought the sawmill to the filming site. You know, this equipment is so small that it fits in the boot of a standard car. When we found a log suitable for the project at hand, we cut it into boards. The result became a super nice fish gutting table," says Björn Christiernsson, who sees great possibilities with the Farmer's Sawmill.

Easy to transport, sturdy design and great flexibility are qualities he readily emphasizes.

"The Farmer's Sawmill is customized for the small-scale DIYer. Only your imagination limits what you can do. You can produce everything from nice interior decoration to garden design. If you cut down an apple-tree, you get fantastic boards that you can use when building a barbecue area or outdoor furniture.

Björn already owns an extended LOGOSOL M8. He bought this sawmill to be able to build the family's self-designed house. In all, he sawed 150 linear metres of beams of dimensions you cannot find in the commercial timber yard.



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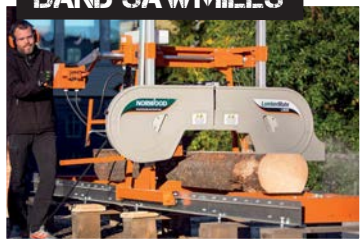
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Advertisers Index

Airpress Developments	54
Andrew Crawford	54
Behlen General Finishes	39
Boat Building Academy	28
Chestnut Finishing Products	39
Creative Welsh Woodturning	40
Dowelmax	76
Fein Power Tools	33
Felder	IFC
Festool	IBC
G & S Specialist Timber	39
Irwin	7
J & C R Wood	19
Le Tonkinois Varnish	40
Logosol	75
M Sedgwick & Co	11
Machine Mart	12 & 13
Makita	20
Norfolk Saw Services	38
Osmo	19
Peter Sefton Furniture School	19
Record Power	BC
SCM Group	27
Scott & Sargeant Woodworking Machinery	68
Thomas Flinn & Co	19
Tomaco	59
Tomaco - CMT	53
Toolnut	76
Treatex	38
UK Fine Arts	28
Woodrat	54

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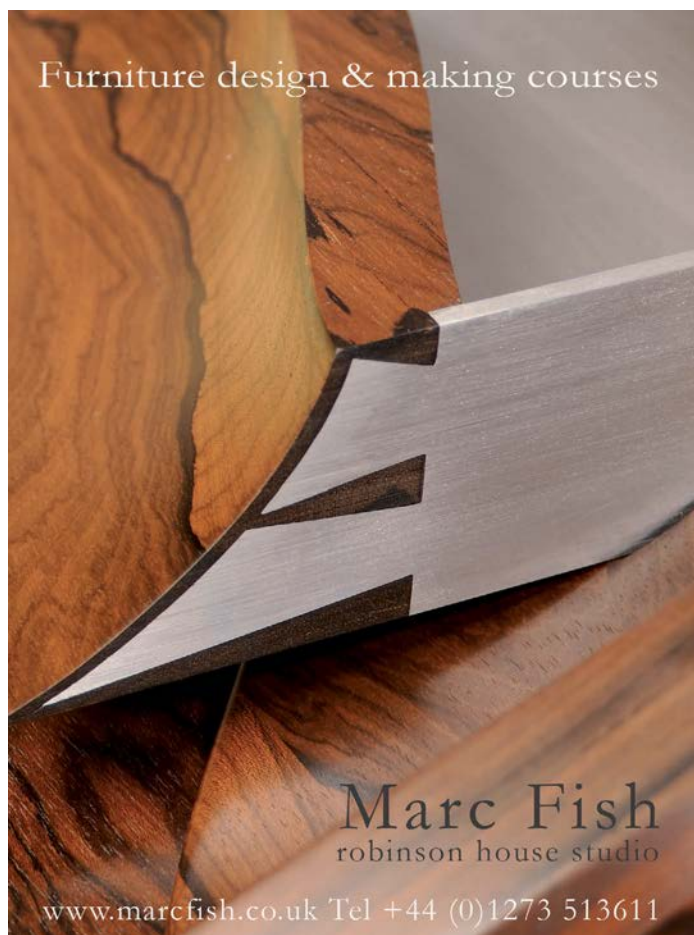
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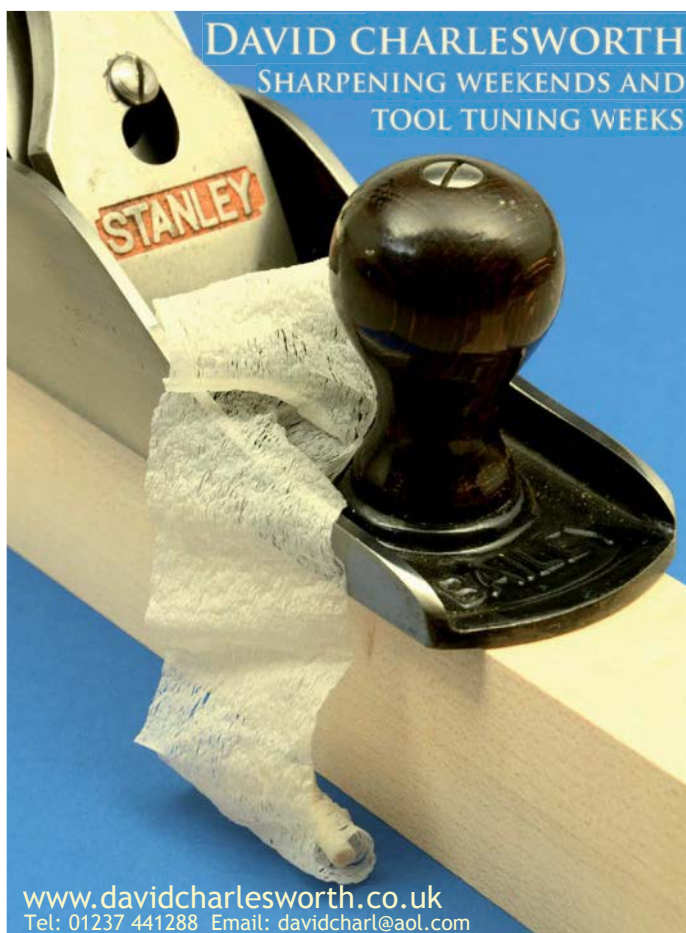
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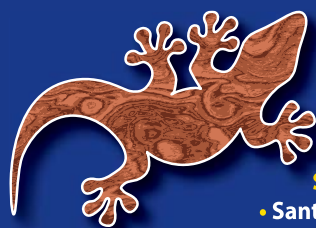
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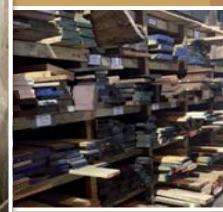
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UNDER THE HAMMER:

Elizabethan tester bed

This month we look at a remarkable example of a wooden bed canopy

This rare and highly impressive oak and (*Quercus robur*) walnut (*Juglans regia*) marquetry inlaid tester bed recently sold at Bonhams' Oak Interior auction. The tester has four large panels, each centred by an ebonised pyramidal boss, framed by geometric bands of holly (*Ilex* spp.) and bog oak with applied dentil mouldings, all within leaf double S-scroll carved rails. The frieze rails are all nulled-carved on the inner face and highlighted with black stain, the outer face of the frieze rails has fine floral marquetry. The remarkable headboard features a pair of panels carved with double-scrolls and pendant flowers, spaced by carved corbels, over a pair of splendid Nonsuch-type marquetry inlaid panels, each behind a carved proud double arch raised on carved pillars. Each pillar is centred by a female term and flanked by two male terms. There are three arched panels below. The freestanding walnut end-posts each have two carved cup-and-covers and two jewelled baluster-turnings.

Provenance

Although the inlaid decoration to the headboard of this remarkable bed is characteristic of 16th-century German inlay, it is now thought to have been made in London, particularly around Southwark, circa 1585, and very possibly by immigrant German inlayers. The architectural decoration is popularly assumed to represent Henry VIII's celebrated Nonsuch Palace, Surrey, particularly with reference to the fanciful towers. However, it is more likely to have been derived from 16th-century printed designs, for example those published by Hans Vredeman de Vries (1527–1604). At one time the bed was almost certainly the property of American newspaper publisher William Randolph Hearst. There is a paper 'collection label' stamped 'W.R.H. 2375' on the rear of the headboard.



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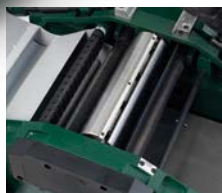
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The Woodworker

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