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WELCOME

The art of furniture-making is necessarily the act of striking a balance between the old and the new – taking pieces with traditional forms and functions and finding ways to create them afresh. In this issue of *Furniture & Cabinetmaking*, we've got a real mix of ancient and modern to enthuse and inspire you.

Among our step-by-step projects, Germán Peraire has a contemporary take on a traditional 18th-century slant-fronted cabinet or bureau, Graham Dugan takes you step by step through turning and weaving a Danish-style footstool and Israel Martin uses pine, milk paint and an old window frame to make a kitchen cabinet on a budget.

Bespoke furniture maker Dominic Ash is pioneering Jupiter Machinery's new iDovetail machine, which aims to make cutting joints as easy as using a mobile phone or a printer, in the UK. He tells us about the machine and about his business in general, while Thomas Eddolls experiments with a new veneer press.

Twenty years after we first profiled Scott Woyka just as he was starting out, *F&C* returns to ask him how his Cornwall-based business has grown and changed, in the wake of global stardom when his work featured in the 2021 G7 leaders' summit.

Meanwhile up-and-coming young maker Sam Whyman tells us about his mid-century Scandi influences and how he got into furniture; husband-and-wife design team Byron & Gómez work together to create furniture and art; Jim Robinson makes a Shaker-influenced narrow dresser to fit in a wall recess; and Toyohisa Sugita demonstrates how to use a vertical ripping guide to make a frame and panel joint.

Whether your inspiration comes from history and tradition or brand-new, innovative thinking, you're sure to find something to interest you in this edition. Happy reading, and happy making.

*'Old and new make the warp and woof of every moment.
There is no thread that is not a twist of these two strands.'*

RALPH WALDO EMERSON

CONTENTS

F&C ISSUE 309

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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.



1 WELCOME

Discover what's in store in the latest issue

4 REVEAL BEDSIDE CABINETS

Thomas Eddolls explains how an experiment with a newly acquired antique veneer press became a pair of elegant cabinets

10 KITCHEN CABINET ON A BUDGET

Israel Martin builds a glass-fronted cabinet using pine, milk paint and an old window pane

16 DOVETAILED DESIGNS

After training with a Quaker furniture maker in Somerset and restoring boats in the Caribbean, Dominic Ash founded a family furniture business which started out in London's Spitalfields before moving to a new home in the Cotswolds. He tells F&C about his life and work

22 WORLDSKILLS 2022

Team UK enjoyed gold medal success in cabinetmaking at the event in Switzerland

24 THE FLORENTINE TABLE

Inspired by a knife-making course, Mark Peacock creates a side table with a patterned drawer front

30 THE INTERNATIONAL WOODWORKING FAIR

Randy Maxey reports on the latest tools and technology unveiled at the IWF 2022

34 REVISIT

Germán Peraire explains his take on an 18th-century slant-front desk

43 SUBSCRIPTIONS

Don't miss our latest offer for subscribers

44 STRIKING A CHORD

Inspired by mid-century design, young furniture designer Sam Whyman is making a living from making – and his unique corded chair has already been shortlisted for awards

50 OAK BOOKCASE WITH ROSEWOOD DETAIL

Kevin Ley builds an elegant piece of furniture to store his clients' book collection

58 YOUNG FURNITURE MAKERS EXHIBITION

We celebrate the outstanding work of the next generation of furniture makers

62 INLAY TABLE

Roberto Rizzo makes a simple, but not too simple, Louis XV-style table





68 OAK DRESSER WITH RACK

Jim Robinson makes a Shaker-influenced narrow dresser to fit in a wall recess

76 SEVEN-DRAWER CHEST

Anthony Bailey makes a Mission-style chest of drawers from American oak

82 TOMORROW'S HEIRLOOMS

Husband and wife team Charles Byron and Maria Gómez met at furniture school and now make beautiful pieces together in Somerset

88 LINEN PRESS CUPBOARD

Louise Biggs gets to the bottom of a sticking drawer problem

92 UNDER THE HAMMER – FOLK FURNITURE

Bonhams' recent sale of folk and naïve art featured several fine examples of vernacular furniture. We take a look at some of the top-selling lots here

94 WOYKING IT

Twenty years ago *Furniture & Cabinetmaking* profiled an up-and-coming furniture maker from Falmouth in Cornwall. Here we catch up with Scott Woyka again and find out what he's been up to

100 DESIGNING AND MAKING CUSTOM FURNITURE

In the first of a series of articles, Dennis Zongker begins work on a hallway table

106 DANISH-STYLE FOOTSTOOL

Graham Dugan shares his step-by-step guide to turning and weaving this stool

113 FRAME AND PANEL JOINT BOX

Toyohisa Sugita demonstrates his method for making a frame and panel joint using a vertical ripping guide

120 A DOUBLE DOVETAIL WITH A TWIST

Alex Reynaud of Under The Water Design introduces an unusual joint

We regret to inform readers that the Artichoke New Designers and Makers Conference 2023 featured in *F&C* 308 has been cancelled.

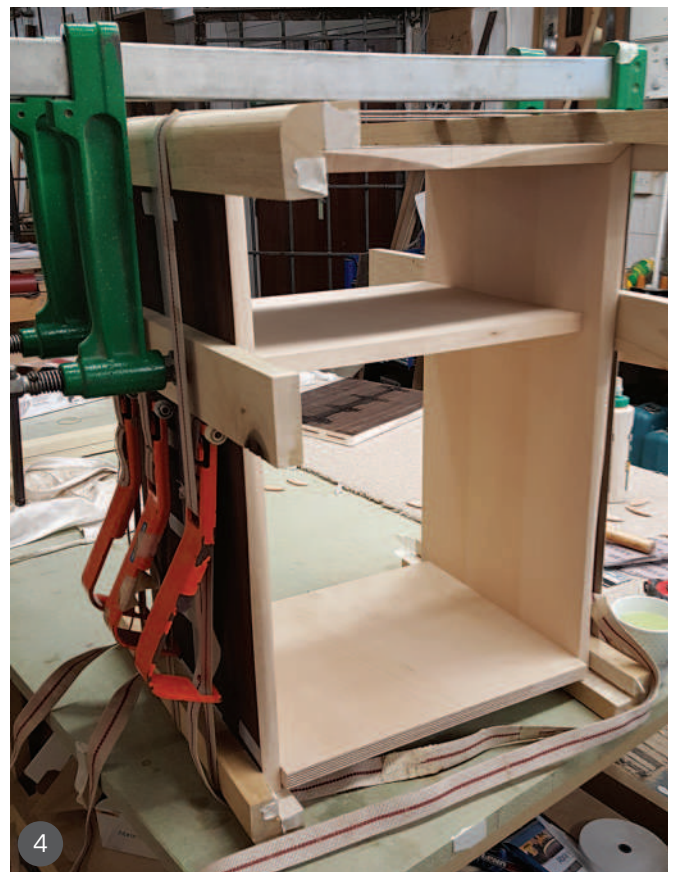
FURNITURE & CABINETMAKING

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REVEAL BEDSIDE CABINETS

THOMAS EDDOLLS EXPLAINS HOW
AN EXPERIMENT WITH A NEWLY
ACQUIRED ANTIQUE VENEER PRESS
BECAME A PAIR OF ELEGANT CABINETS



1 Detail of the shaping on the top edge 2-4 After shaping, the carcass was glued and clamped

These bedside cabinets began originally as a whimsical 'play' project. After purchasing an antique screw mechanism veneer press, I was more than eager to put it to good use. With a rough idea of a general form and some wonderful material stock left over from different jobs, I began to formulate my ideas and concepts into a working piece of furniture. The result was this pair of cabinets.

DESIGN AND MATERIALS

After working out the overall dimensions, I prepared the substrates for veneering. The outer faces were to be in book-matched fumed eucalyptus while the inner faces would be made

from even, straight-grained slip-matched maple.

I wanted there to be some kind of shaping to the front edges, playing with the contrast between the light and dark veneers, and a traditionally fitted dovetailed drawer.

I decided to use good quality birch ply as a substrate, so I then needed to work out the required sizes minus the solid maple lippings: 5mm at the back with a 30mm front nosing to allow for shaping, plus a generous lipping along the bottom edge of the sides to enable me to shape some detail into that area too. The tops were arranged in a similar fashion to the sides, leaving the ends clean where the carcass would be mitred together, while the mid-shelf/drawer support was to be lipped in 5mm maple front and back.



5 A dark timber was chosen for the drawer fronts 6 & 7 The Australian walnut was then prepared for the drawer fronts and fitted into the carcass 8 A sharp plane was used to prepare the drawer sides for fitting 9 The tails were finished with a 4mm chisel

THE LIPPINGS

The 5mm lippings would be glued and clamped straight to the ply while the larger lips would be tongued onto the substrate, being a larger section, forming a 6mm tongue onto the maple and grooving a mating channel into the ply to accept it.

When I apply lippings, a good practice I found in a textbook is to arrange the radial face towards the outside. In theory this reduces the amount of movement of the lipping due to the arrangement of the annular rings, and as such minimises the risk of the lipping joints telegraphing through the thin cabinet veneers.

With all of this in mind I cut out the substrate panels from the birch ply, making sure the ply grain was horizontally opposed to the veneer, this being regarded as standard practice.

THE VENEERS

While the lippings were being applied I could look at arranging the veneers. I decided to book-match the pair of tables, so it was very important, working with consecutive leaves through the bundle, to make sure I had the right faces up and in the correct linear direction before laying down.

The eucalyptus had some lovely, rippled figuring towards the edges of the leaves which, when arranged in a two-leaf book match, formed a herringbone-style upwards V pattern.

Once the panels were lipped up and the edgings were hand-planed flush, I keyed the surface for glue by working very lightly with 120 grit on my random orbital sander.

With the veneers selected I shot the edges, holding the



10 Everything was knocked together to check the fit



11 The sides were planed to ensure a perfect fit

veneers in my shop-made shooting boards, and hand-planed them true with a No.7 jointer. Next, I taped the leaves together to form each face. I could then lay the veneers down in my sturdy vintage screw press.

I decided to use a one-shot urea formaldehyde resin as the adhesive for this cold press exercise. I rolled the glue over my prepared substrates using a specialist Pfohl glue roller, I normally double roll the surface before evening out on the non-spread setting. Then I carefully laid the veneers onto the panels, making sure the centre veneer joints were nicely aligned to the middle of the substrates before putting them into the old-fashioned split platen screw press, closing the platens down and cranking the pressure with a steel bar before winding full

pressure on with a metal extension tubular bar.

After leaving it a full 24 hours to cure, I was able to bring the carcass panels out and trim the waste edge veneer clean to the side lips, climb feeding with a veneer trim router cutter. Once I had processed all of the panels in this order, I could cut the mating mitres on the top edge of the table carcass on the panel saw with the blade raked over to 45°.

The shelf was cut with the saw back square, carefully matched to the inside of the mitre shoulder lines and from here I could go on to joint the panels together. I opted for biscuit joints, a favourite of mine for flat panel work.



SHAPING

It was now time to look at shaping the front edges of the pieces. I had in mind some kind of gradual sweep or flow, which would add an appealing point of visual interest, playing with the high contrast between the light and the dark surfaces.

Gently working into the solid maple edges with a spokeshave, I gradually began to form a kind of sweeping twisted mould on the edge which was to mate with the cabinet top in a backwards relief at the mitre. This type of detail is very popular on modern furniture, adding a gentle twist.

When I had roughed these out to an agreeable proportion I closed the carcass together to get a feel for what, if anything I might need to do on the top edge of the piece. Eventually, after some deliberation, I worked in a kind of tapered twisted relief mould, picking up from the sides to tie everything together.

ASSEMBLY

Having finally arrived at an agreeable outcome, everything needed refining before I was able to glue the carcass together. I pulled the assembly up with band clamps with rebated blocks over the mitres to pull them together and reach clamps to mate the shelf joints together. I put a sized panel in loose at the base to hold everything true in line.

When I am assembling mitred carcasses like this, I like to thin the biscuits down slightly as they swell on contact with the glues and sometimes this can hold the joint off creating gaps on a focal point where everything must be as good as possible. As there was not much gluing area to be covered I was able to quickly apply the adhesive; I opted to use a workshop favourite of mine, Titebond II.

When everything had fully cured I was left with my pair of bedside carcasses and could then move onto the next part of the project.

DRAWER MAKING

I was not sure at this point whether to have a light or dark drawer front, but very quickly decided that a dark front would tie in better. It would also yield beautifully striking dark dovetail pins against the crisp white maple sides.

I needed some dark timber that closely matched the colour of the dark fumed veneers. Fortunately, I had some Australian walnut which had been gifted to me by a retiring maker. This wood is extremely hard and difficult to work but it blended in well with the tone of the pieces. After edge jointing a couple of boards together, I veneered the drawer front blanks with the eucalyptus. When they were ready I cut them down to slightly over size to be hand-fitted into the carcass opening – a good tight fit was required.

The next stage was to prepare the drawer sides ready to be hand-fitted into the drawer opening. I gently worked the edges over with a sharp plane until they were a good, even fit all the way along the opening.

Then I could move on to cutting the front tails. I always leave the drawer sides over length so if any mistakes are made here, I can simply cut the offending tails off and re-work them. Opting for an evenly spaced layout, I carefully cut the tails out on the bandsaw with a simple angled sled jig at the standard 1:8 angle for hardwood dovetails. I personally like fine pins in fine furniture so everything was kept as tight as possible, the neck of the tails being merely the thickness of the saw kerf.

After bandsawing the tails out, I used a coping saw to cut the waste out before paring the remainder down to my cutting gauge scribe shoulder lines with a 4mm chisel.

Steadily and methodically transferring the tail positions onto the pin board, i.e. the drawer fronts with a scalpel, I hand-cut the lapped dovetail housings out, quite a difficult task in this instance given the properties of the timber being worked.

When this stage was eventually complete, I part knocked the components together to check the fit before cutting out the through dovetails for the back board, and then moving on to finishing drawer assembly.

After gluing the drawers up, again using Titebond, I needed to plane the sides down to the pin ends, having left them slightly proud enabling me to achieve the perfect hand fit I was looking for. With this task complete, I could view the piece in its entirety for the first time.

FINISHING TOUCHES

After adding the drawer bases and cabinet backs, I was onto the final clean and fettle up in preparation for spray polishing. I prefer a hard sprayed lacquer finish for regularly used pieces in fine veneers.

My final job, one which always feels a triumphant moment, was to knock in my maker's mark: my name in a personalised font stamp that I had made bespoke in America.

The pieces were subbed out to another workshop for spray finishing as I did not have the facilities available to produce such a wonderful finish. I like to see the pores of the grain exposed on a satin spray finish like this, leaving as relatively natural look as is possible.

Finally, after bringing the pieces back into the shop they stood proud upon the bench where they were made.

Being a speculative venture and after showing them in my local crafts gallery I was over the moon to sell them to a collector at Cheltenham's Celebration of Craftsmanship and Design. A fine end to an enjoyable journey!

12 The piece was now nearly complete 13 A hard spray lacquer was applied for the finish

14 My bespoke maker's mark adds a nice finishing touch 15 The completed pair of cabinets

KITCHEN CABINET ON A BUDGET

ISRAEL MARTIN BUILDS A GLASS-FRONTED
CABINET USING PINE, MILK PAINT AND
AN OLD WINDOW PANE

I needed a new cabinet to store some of my kitchen cookware. I decided to make a fine-crafted piece but using the cheapest wood available to me, so I used pine for the main carcass, painted with milk paint. Southern yellow pine was used for the cabinet top, while for the doors I used four panels of a better quality, quartersawn pine.

Using pine can sometimes compromise the durability of a piece, so I needed to build this cabinet using the strongest joinery. Marking all the cuts and joinery is always the best way to get good results, but with a soft wood like this pine, it is crucial.







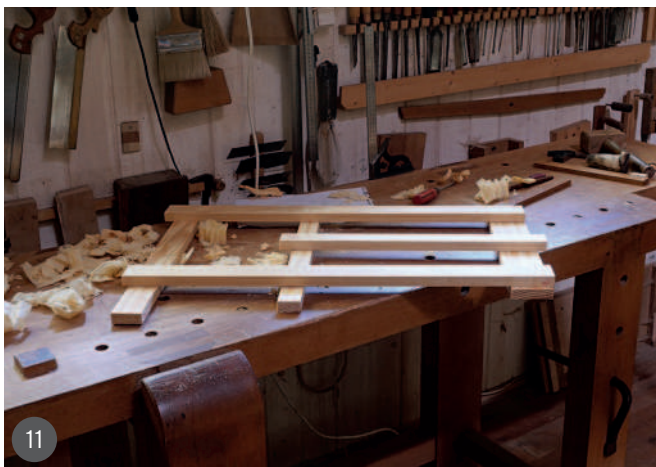
PHOTOGRAPHS BY ISRAEL MARTIN

1 Making the rebate for the carcass 2 Fine-tuning the rebate with the shoulder plane 3 Dimensioning the front stiles
4 Using a sliding dovetail plane to make the males 5 Dry fitting the carcass 6 Half-blind dovetails and detail of the stiles

MAKING THE CARCASS

I used pine edge-glued boards for the carcass. This is a quick way to make a cabinet, because you don't need to dimension all the pieces by hand. I smooth planed the sides and bottom boards

and then I made a rebate at the side fronts to accommodate a pine strip, in which I was going to fix the hinges. This made the cabinet sides look thicker, as well as adding strength to the piece. I used the side rebate plane and made the final adjustments of



7 Shaping the sides to make the legs 8 Gluing and checking for squareness 9 Gluing the front stiles
10 The carcass glued up 11 Preparing the door pieces 12 The joinery for the doors

the rebate with a shoulder plane. I also planed some southern yellow pine pieces for the top and joined them with the sides with half-blind dovetails. For the bottom I used the same boards as for the sides and joined them with sliding dovetails; the males

were made with the sliding dovetail plane and the females with the chisel and router plane. Because the pine boards are quite soft, making deep marks was crucial. A sharp knife is the key. This way the structure was rock solid.





SHAPING AND GLUING THE CARCASS

After making all the carcass joinery and dry fitting it, I shaped the two sides to make the legs. I used a frame saw and then spokeshaves to leave a smooth surface. I also shaped the front stiles that were going to be glued up in the side rebates, then I glued all the pieces together. First the bottom with the sides, then the top pieces to the sides and then the front stiles. I planed the joint between the styles and the sides to make a chamfer to hide the glue line. The top is screwed to the top pieces' rails (dovetailed to the sides).

MAKING THE DOORS

I made the door frame from southern yellow pine. The joinery was haunched mortise and tenons for the lower part and, after making the groove for the panels, I removed the top part in

order to accommodate the glass, from a groove to a rebate I used the chisels and the router plane.

For the door panels, I planed some leftover pine and made bevels to fit them in to the grooves. I then painted the panels before gluing the door together.

FINISHING

I planed and edge jointed three southern yellow pine boards to make the cabinet top. I also applied three coats of milk paint to the carcass and to the doors, but I left the inside unpainted.

The shelves were made of the same pine as the sides and are mounted on brass pins to make the shelf heights adjustable.

The last thing to do was prepare the glass, which was recycled from an old window that I had in my house. It was fixed with thin pine strips and small nails.

13 Bevelling the door panels 14 Detail of the door panels 15 Dry fitting the doors 16 Gluing the doors after painting the panels
 17 Detail of the cabinet top, made from southern yellow pine 18 Detail of the finished piece 19 The doors before the glass was installed
 20 Detail of the glass used in the doors

A modern kitchen interior featuring white cabinetry and a wooden countertop. A potted plant with green and reddish leaves sits on a white island. In the background, a framed picture of a ship is visible on the wall.

DOVETAILED DESIGNS

After training with a Quaker furniture maker in Somerset and restoring boats in the Caribbean, Dominic Ash founded a family furniture business which started out in London's Spitalfields before moving to a new home in the Cotswolds. He tells F&C about his life and work





How did you first get interested in furniture making?

At secondary school, I was introduced to woodwork. It was the only lesson I enjoyed and was good at. I was always very practical.

How did you train?

The woodwork teacher at school was very supportive and put me in touch with a Quaker furniture maker in Somerset, who took me on for a five-year apprenticeship in furniture making.

What was the first project you completed?

A kitchen for my sister-in-law.



What made you decide to set up your own business?

It was a natural progression, from making individual pieces of furniture for friends and family and then taking on my first workshop in Brick Lane.

How did you go about it?

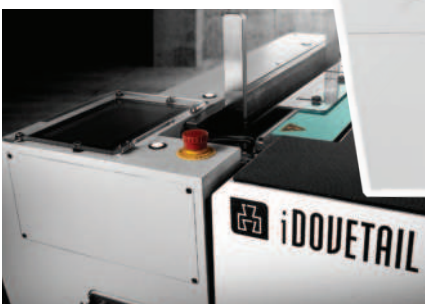
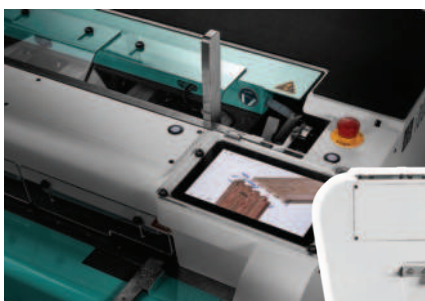
I was lucky to get a workshop with the Spitalfields Small Business Association, who were very supportive. At the time Barclays Bank was giving out small grants and training to set up first-time businesses.

Is there an ethos or a guiding principle behind your style?

Simple, good quality design and refined details.

You're the only UK owner of a revolutionary new dovetail machine from Jupiter Machinery. Please tell us about it.

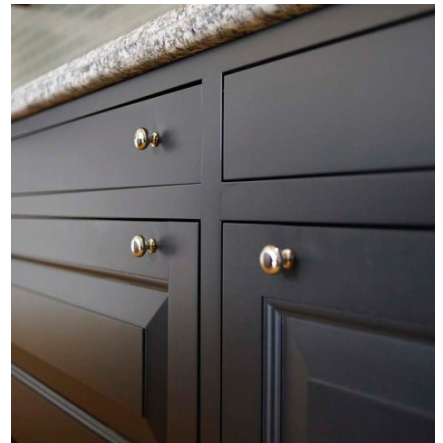
I did a lot of research on dovetail machines: there are very few on the market, but I was attracted to the Jupiter machine, as it has a simple set-up with an intuitive touch-screen computer. It has a very diverse range of constructional methods. We make a lot of dovetail drawers in our kitchens and bespoke furniture.



MEET THE IDOVETAIL

Jupiter Machinery has created a dovetail machine designed to be as simple as using a mobile phone or a printer. With a touch-screen interface, the iDovetail designs the processing dimensions of each joint into a real-time model, so you can see the finished product in 3D and make adjustments before you cut. Bit recognition capabilities mean you won't cause damage by installing the wrong bit, and its unique pre-cut function protects against tearing. The iDovetail supports six commonly used joint types, which can be freely modified.







Tell us about your workshop.

We relocated to the Cotswolds in 2007 and are tenants on the beautiful Stowell Park Estate. Originally we had 4,000 sq ft but we gradually expanded to 8,000 sq ft. We process local hardwoods from the estate, which we mill and plank ourselves.

What is your favourite project you have worked on?

The enjoyment of a project is the client you are working with and creating the quality and vision they come to us for.

What is the most challenging project you have worked on?

Because we are bespoke, all our projects are challenging.

What are you working on now and next?

We are making a study in English walnut. It's a beautiful wood to work with.

Where do you see your work going in the future?

I enjoy a challenge, so as long as we are constantly challenging ourselves, I'm happy.



Have the Covid-19 pandemic and the lockdown affected your business?

The pandemic has not affected our business as yet. We are probably more busy, but it's more difficult to find staff now and prices of materials have risen.

What do you do when you're not working?

I love being out in the saw yard and milling trees.

dominicash.co.uk

@dominicashbespoke





PHOTOGRAPHS BY MICHAEL ZANGHELLINI/COURTESY OF WORLDSKILLS

WORLDSKILLS 2022

TEAM UK ENJOYED GOLD MEDAL SUCCESS IN CABINETMAKING AT THE EVENT IN SWITZERLAND

WorldSkills is the international organisation that encourages and develops young people's technical skills over a range of industries. The WorldSkills Final competition usually takes place every two years and is the 'Olympics' of vocational skills. The 2022 Final was supposed to be held in Shanghai, China but this had to be cancelled due to the Covid-19 pandemic. Instead, a Special Edition competition was organised, taking place in different countries. The cabinetmaking contest was held in Basel, Switzerland.

CABINETMAKING COMPETITION

The cabinetmaking competition attracted participants from 19 different countries, who were tasked with creating a piece of

wooden furniture, demonstrating their skill and understanding of design and finish.

James Boyes from Team UK was awarded a Gold Medal, as were Suil Kwon of South Korea and Dexin Li from China. James, aged 22, comes from Northampton and studied for a three-year Diploma in Furniture Studies at Moulton College. He had been training for the competition since 2020, but the pandemic had caused the Final to be postponed. On making Team UK, he commented: 'It's been a long journey to this point but all that hard work has really paid off. A massive thanks to my training manager and everyone else who supported me and pushed me so hard.'

For more on WorldSkills, see [worldskills.org](https://www.worldskills.org)



TOP & ABOVE LEFT Team UK's James Boyes won a Gold Medal in Cabinetmaking

ABOVE MIDDLE Suil Kwon of South Korea and **ABOVE RIGHT** Dexin Li from China were also awarded Gold Medals for their work

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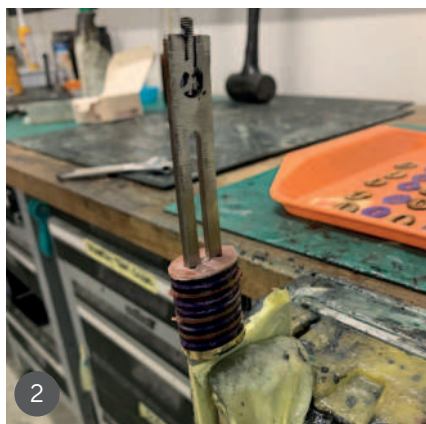
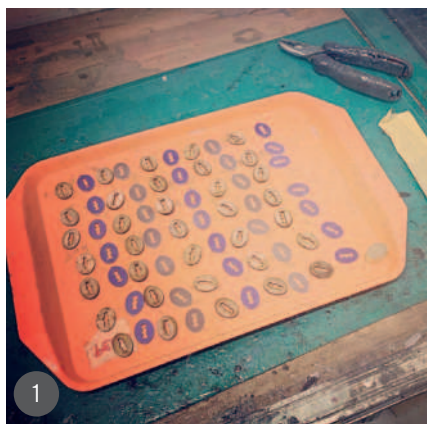


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THE FLORENTINE TABLE

INSPIRED BY A KNIFE-MAKING COURSE,
MARK PEACOCK CREATES A SIDE TABLE
WITH A PATTERNED DRAWER FRONT



PHOTOGRAPHS BY MARK PEACOCK

- 1 Layout for the micarta and leather discs for the knife handle 2 Stacking and gluing the handle pieces
3 The finished knife and the test bar for the drawer front 4 The drawer materials: walnut, sapele and spalted beech
5 Selecting oak for the main table construction 6 The table top in the clamps after milling

I recently travelled to Barcelona to participate in a course to make a chef's knife with two of my favourite culinary knifemakers – Tomer Botner of Florentine Kitchen Knives (FKK) and Geoff Feder of Feder Knives. FKK has a distinctive handle style with stacked discs of micarta (a composite material) and leather, bookended by brass (the bolster and pommel) to create intricate patterns of colour and texture. I found the assembly process of laying out the individual discs to create the pattern, followed by stacking and gluing each piece, very meditative, and while constructing my handle, I started wondering about the potential for applying this process to furniture.

My first inclination was towards a drawer face, which I wanted to pair with a simple side table, constructed of a single timber, that would act as a juxtaposition to the patterned drawer face, like the blade of the chef's knife does with the stacked handle. Upon my return to the workshop the following week, I designed an oak table with simple tapered legs, with a rounded profile on all edges that would become the counterpart to a laminated drawer face, constructed of alternating pieces of walnut, sapele and spalted beech. Lastly, I wanted to incorporate some brass in the design, so the drawer box has brass dowels and the leg stretchers are brass rod. This trip was an excellent study in design and creativity for me, as well as improving my workshop processes.

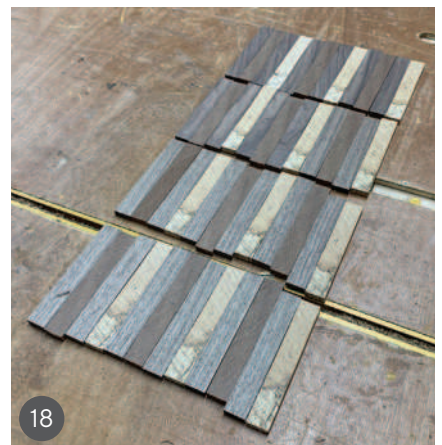
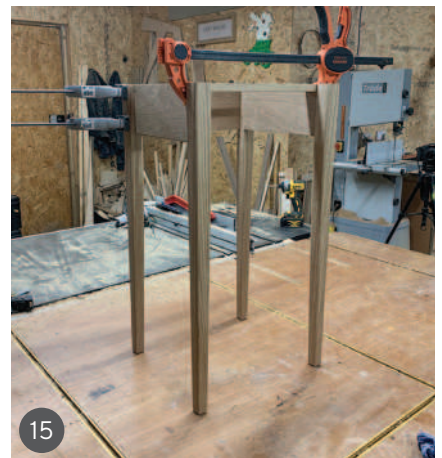
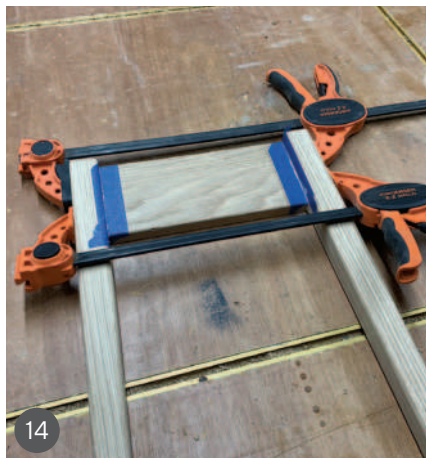
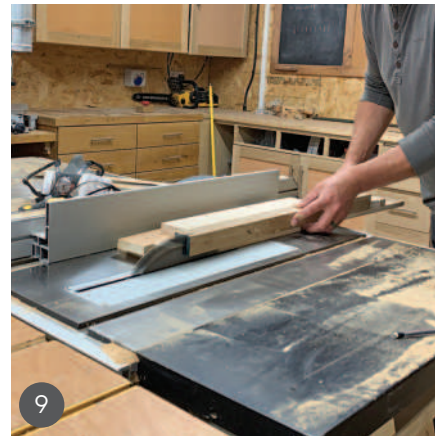
TIMBER SELECTION AND MILLING

I wanted to make a tall side table, so I selected a single 40mm board of rough sawn oak for the legs, another 40mm board for the top and a final board of 25mm to make three apron pieces for the back and sides. The boards were milled to near final dimensions and allowed to rest for a couple of days, before milling to final dimensions. I made a test bar from scrap pieces to ensure I liked the pattern I had in mind using alternate pieces of walnut, then sapele and spalted beech every other piece – I selected boards around 20mm thick that would make enough pieces to span the finished drawer width and height.

THE TABLE TOP AND LEG BLANKS

I jointed the first oak board for the top, then cut it in half on the mitre saw. With alternating grain flow, I glued up with parallel cabinet clamps. With the second oak board I used the tablesaw to cut four square leg blanks, ensuring to mark and label the pieces in order, to get a continuous grain across the front and back legs, while also labelling the outside facing corner to keep the legs in the correct orientation for tapering.

Marking down the intended depth of the apron pieces from the top of each leg blank, I then set up a simple tablesaw sled to taper the legs on the two internal facing sides, marking a line which was





7 Labelling the outer corners of each leg blank 8 The tablesaw sled with front and back stops 9 Slowly running the leg blanks through the tablesaw 10 Side assemblies dry-fit 11 The leg and apron pieces mortised and the loose tenons dry fit 12 Tape off the corners where profiling is not desired 13 Routing a subtle round-over on all the base parts 14 Side assemblies in glue-up, with tape to reduce clean-up 15 Glue-up of side assemblies with apron and stretcher 16 Cutting the drawer pieces on a tablesaw sled 17 Each piece was numbered in cut order, maintaining flow 18 The drawer pieces laid out in pattern order ready for glue-up 19 Glue-up of the laminated drawer front 20 The sanded drawer front before finish 21 Installing the soft close drawer runners to the table base

inset two-thirds of the full width of the leg. I aligned the mark on the leg blank end to the front edge of the sled and the marking line for the apron depth to the backend edge of the sled. I screwed down the guide piece and both stops on the sled, which securely holds the piece. Alternatively, you can use a commercial tapering jig with hold-down clamps. I ran each blank through the tablesaw twice to achieve a taper on the two internal facing sides.

JOINERY AND GLUE-UP

I then cut the three apron pieces from a single board milled to 20mm, using the tablesaw to maintain a consistent width and matching the marking line on the leg blanks. Using the mitre saw I cut the two side apron pieces using a stop block, and finally the back piece, dimensioning each piece to achieve a 10mm overhang for the table top on the corners of the legs.

I marked out the positions to cut mortises in the legs and aprons using the domino joiner, ready for dominoes (loose tenons) – the same approach can be achieved with a router and self-made tenons. I dry fit the side assemblies to check everything fitted tightly.

I gave the show edges of each component a gentle round-over. Firstly, the bottom front edges of each apron. The front legs were given a round-over on the full length of each leg, as the drawer front and side aprons are inset from the legs. The internal corners were only rounded to the apron mark – I use blue tape as a reminder not to rout past those marks. The back apron is flush with the back leg faces, so only two sides received a full-length round-over. The ends of the legs all got the same subtle round-over.

After sanding to 180g, I started preparation for gluing up the side assemblies. I used painter's tape at the joint to reduce squeeze out on the oak, as I find that water-based clean-up will raise the grain, and it's an awkward joint to sand afterwards – any small residue can be cleaned up with a sharp chisel.

Once the side assemblies were dry, the back apron and a small front stretcher (attached with dominoes) went into the clamps for glue-up. As the back apron is flush with the back faces of the legs, any squeeze-out can be sanded.

The table top was fully sanded to 180g, after giving all edges (top and bottom) a round-over, aiming for the round to finish just before the table top transitions to the legs. The top was then attached to the base using slotted brackets that allow for some seasonal movement, and two screws into the front stretcher – pre-drilling and using paste wax on the screws, to avoid them shearing in the dense oak.

DRAWER FRONTS

This part is the essence and focus of this project, elevating what is an elegant, yet simple oak side table, to a more interesting piece. The walnut, sapele and spalted beech were milled, then dimensioned to 5mm greater than the depth of the aprons. With an accurate measurement on the drawer opening, I could now calculate the number of 6mm slices I needed of each timber to make a full drawer face, once they are laminated together.

The pieces were cut from each board on a tablesaw cross-cut sled, using a stop block to keep consistency. As each piece was cut, I moved it to the side of the sled in cut order, then numbered each piece. This meant that during glue-up I could maintain grain flow across the drawer face. Walnut is the dominant timber in this pattern, so I cut twice as many sections compared to the sapele and spalted beech. Once all the pieces were cut and numbered, they were assembled on a flat work table into the desired pattern – in this pattern each alternate piece is walnut, with every other piece being sapele and spalted beech. This process flow was a big takeaway from my time with FKK in Barcelona while making the stacked handle culinary knife. Each piece was then glued in pattern order, taking the thought out of the flow, meaning for a 16-inch width, the whole glue-up could be performed in one



go. Although this is all end grain glue-up, the finished piece was pretty strong, and since it will be attached to a drawer box, there will be minimal, if any load. The assembly was then clamped end-to-end, and with cauls to maintain a flat surface during glue-up. This assembly was allowed to dry overnight.

The next day the drawer face could be removed from the clamps. Both faces were sanded to 180g, then the top and bottom edges were trimmed to finish dimensions at the tablesaw, first with a sled, then with the fence. The top and bottom edges were then sanded to 180g.

THE DRAWER BOX

The drawer will open on an undermount soft close slide. I fit the slides to the side aprons, which gave me the correct dimensions for the drawer box pieces. I then dimensioned the sides, front and back to the finished drawer height. Using a router table, I cut in a 6mm groove to accept an oak-veneered MDF sheet as the drawer base. I then pre-finished the drawer panel and internal drawer surfaces with hard wax oil, tinted white, which maintains close to a natural oak colour. As the drawer is small, and will not carry a significant load, glued butt joints, reinforced with brass dowels were sufficient, particularly as I was using an undermount slide system. From a length of 6mm brass rod, I cut eight 30mm pieces using the bandsaw (rolling them into the blade). The brass dowels accent the brass stretchers that would be installed later.

The drawers were then assembled with glue and clamped, allowing the glue to dry. I then drilled two holes through the sides of each corner, to a depth of 30mm into the front and back piece. I squeezed in some epoxy resin and hammered the brass dowel home, until I felt resistance. The dowel was then sanded flush up to 400g, then buffed to polish the brass dowels. I finished the drawer box with the white hard wax oil and the drawer front was finished with a clear hard wax oil at this point as well.

The locking mechanisms for the runners were attached to the drawer underside and placed on the runners, clicking into place. The drawer face was positioned, with equal spacing from the front legs and table top using shims. I used small spring clamps on the bottom edge, then pulled the drawer out, securing further spring clamps to the top. I pre-drilled and countersunk, then secured the drawer front to the box with two screws. Lastly, I checked all my reveals were consistent after re-installing the drawer box on the runners.

BRASS STRETCHERS

I made a simple jig from plywood scraps to drill the holes to receive the 12mm brass rods. The jig ensured a consistent height for each hole and that it was centred on the leg. The jig was mounted to the workbench with clamps and firmly held each leg in place while I was drilling, using a right-angle drill. The piece was then lifted out



and rotated to the next leg, drilling shallow 4mm holes to receive two side stretchers and a single back stretcher.

I then measured the distance between holes and cut the brass rod to size on the bandsaw. Each rod was polished to a matt finish on a belt grinder (with a polishing belt) and the ends were also lightly chamfered. I installed the back stretcher first, brushing the inside of the holes and the tips of the rods with quick cure epoxy resin. I pushed the rod into the first hole and the opposite facing leg has just enough play to swing the other end of the rod into the hole. I then clamped and allowed it to cure, cleaning any resin squeeze-out. The same process was repeated with the side stretchers, which could be installed at the same time.

FINISHING

Removing the drawer, I sanded the whole oak side table to 240g, before applying two coats of hard wax oil, tinted white, with a lint-free cloth, lightly sanding between coats. The brass stretchers were taped off while finishing.

I thoroughly enjoyed making this piece, particularly as the origin of the design was inspired by other makers. I have huge respect for Tomer and Geoff, and although they work in a different field to furniture making, the concepts of design and process can be adapted to furniture making. I highly recommend learning from and spending time in the workshops and studios of other makers.

22 Pre-finishing the drawer box pieces 23 Inserting the brass dowels into the drawer box 24 The walnut dowels before sanding and polishing 25 Clamping the drawer front ready for screws 26 The drawer face installed on the drawer box 27 Brass dowels polished in the drawer box 28 Drilling holes for the brass rod using a jig 29 The jig firmly held the leg in place while drilling 30 The brass rod was polished to a matt finish 31 The back stretcher was clamped and allowed to cure 32 Applying resin to the holes using a brush 33 The side stretchers clamped and allowed to cure

THE INTERNATIONAL WOODWORKING FAIR

RANDY MAXEY REPORTS ON THE LATEST TOOLS
AND TECHNOLOGY, UNVEILED AT THE IWF 2022

Every two years, Atlanta, Georgia, USA, hosts one of the largest woodworking fairs in the world. It's a gathering place for vendors, buyers and visitors to view the latest in technology, tools, and materials for woodworking.

IWF 2020 was cancelled due to the coronavirus, and there was some question about what the attendance would be for the 2022 show. It did not disappoint. There did not seem to be any reduction in vendor space or attendance from the 2018 show.





NEW PRODUCTS ON THE MARKET

IWF is an enormous show covering three buildings at the beautiful Georgia World Congress Center in downtown Atlanta. Vendors and manufacturers from around the world look forward to this opportunity to present their products and services. The venue is so massive, the large turnout did not make the venue seem crowded.

Technology occupies a large section of the show floor with mini-factories complete with robots, automated material handling, dust collection systems and CNC machines. Geared towards the commercial and industrial woodworking sector, these manufacturers aim to increase the speed and efficiency of the customer's operation. Everywhere you turned there was a robot arm performing a task.

Cabinet hardware vendors like Blum, Salice, Rev-A-Shelf and others occupy another section of the show floor. Here, the hardware manufacturers present their line of hardware including drawer slides, hinges and other cabinet accessories. It seems there's a hardware solution for every challenge in finishing out cabinetry.

Speaking of cabinetry, the vast selection of hardwood, plywood, laminates and other unique materials for cabinetmaking was a bit overwhelming. It was an opportunity

to learn about new materials and their applications.

For the small-shop and hobbyist woodworker, there was plenty to see and learn: tool vendors showing off their latest CNC machines, power tools and hand tools. Chemical companies demonstrating their latest wood glues and finishes. Shaper Tools demonstrated some new products for their hand-held CNC routers. SawStop was there to show off its new compact tablesaw. Next Wave CNC proudly demonstrated their new automated CNC system for your router table. PantoRouter demonstrated their latest in routing solutions for joinery. Ramia and Sjöbergs displayed their new line of workbenches.

The IWF show runs for a full week. You can walk the show floor every day and see something new. It's almost impossible to see everything in a day or two. But the venue is accommodating with clean restrooms, plenty of food from a variety of vendors and cafes, and spaces to rest your feet. There are plenty of hotels and restaurants within walking distance. If you're serious about woodworking, whether you're a hobbyist or industrial cabinet shop, you'll find the show provides an opportunity to get face-to-face with new vendors and renew relationships with existing suppliers.

For more information about the show, visit: iwfatlanta.com

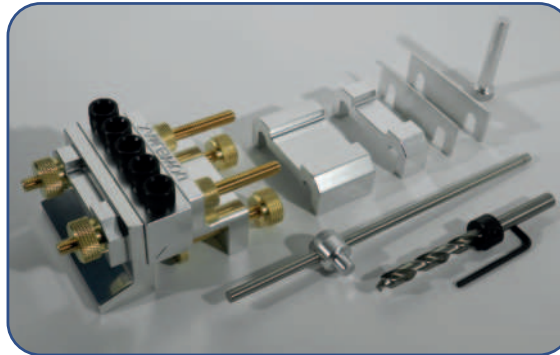


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REVISIT

GERMÁN PERAIRE EXPLAINS HIS TAKE ON AN 18TH-CENTURY SLANT-FRONT DESK

Eighteenth-century furniture has a reputation for being the pinnacle of craftsmanship in wood. At a time when workshops didn't have running water or electricity, artisans managed to produce astonishing pieces that have gracefully survived the test of time and set a high standard not only by their intricate decorative techniques but also by the soundness of their structures.

I've been long fascinated by slant-front cabinets (or bureaus) in particular, such as the ones built by Thomas Chippendale. Intrigued by the challenges within that kind of build, I set out to discover with my hands how it feels to plan and execute a piece of my own.

Far from wanting to make a faithful reproduction, I've been looking for a contemporary 'revisit' to suit my taste. Nevertheless, the construction methods are the same as the traditional ones. My aim is to pass on my findings and inspire others and hopefully the resulting piece will live just as long as those still in museums and private collections.

My bureau is made mainly from American cherry and hard maple, with some walnut accents and veneered with 4mm spalted beech. In addition to the research I mentioned, this project has also been an excellent excuse to challenge myself with a complex alternative to piston-fit drawers and my first steel and brass spring-loaded mechanism for a concealed drawer.

DESIGN, FORM AND FUNCTION

The function of a piece is a compelling starting point for just about any design, but usually, it also sets some limitations to

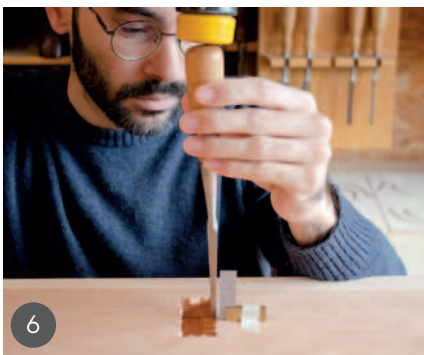
it. In this case, a writing desk must have its writing surface at about 730mm from the ground, and the slant front can't be overly large if it's to remain flat and stiff. These limitations convey a characteristic boxy appearance to this sort of furniture, which I couldn't avoid if I were to maintain the spirit of the original examples.

Another characteristic of slant-front cabinets is the construction method lending a writing surface that sits flush with the inside in its working position. This is achieved by hingeing it on the inside corner, having the front protrude from the carcass a little bit. A rebate in the slant-front lessens this protrusion, and a triangular-shaped block glued to the carcass commonly provides a better finish. Since the front is proud of the carcass, I thought it could be a good idea to have all the drawers also standing proud. That would be a common feature in period pieces, with the drawer fronts rebated and adorned with ovolo mouldings.

The gallery (also known as theatre) of antique pieces is usually crowded with pigeon holes, drawers and carved ornamentation. I opted to combine only a few elements arranged asymmetrically for a modern, decluttered appearance. Locating them at different depths brings about a sense of spaciousness which I find very pleasing.

The presence of sapwood will raise a few eyebrows among readers. This is not accidental or caused by ignorance but by the supply shortage during the pandemic. These were the last planks my dealer had available, and I had to tolerate some sapwood I discovered at the milling stage. I find solace in accepting it as a testimony of its time!

Intrigued by the challenges within that kind of build, I set out to discover with my hands how it feels to plan and execute a piece of my own





1 Detail of the protruding front and drawers, hinge location and triangular filler block 2 An asymmetrical interior lends a modern look 3–5 Marking and cutting the housings for the drawer runners 6 Chopping out the side drawer opening 7 & 8 Cutting and refining the slant on both sides at once 9 Detail of the mitred dovetails 10 The back rebate is routed at the end 11 Finish planing all surfaces 12 The sides ready to receive a finish on the gallery area 13 & 14 Clamping set up and mitre cauls 15 Routing the dovetailed partitions 16 & 17 Marking and cutting the dovetail sockets

BUILDING THE CARCASS

Once I had a clear idea and some sketches of the build, I drew the plans with the final dimensions. In those, I could find the exact position of the hinge height within the carcass, which corresponds to the writing height. I paired the machined sides and marked the hinge point and drawer partitions at the rear edges. Doing it this way ensures that both sides will mirror each other and the drawer partitions will line up perfectly. I used a router to cut the housings for the drawer runners and kickers, guided by a shop-made square fence. An offcut strip was added at the front edge to prevent splch.

Next, I drilled and chopped the opening for the tiny side drawer. This drawer was going to be made and installed at the end of the build, so careful planning was essential here. Afterwards, I screwed the sides together by the waste and cut the slanted shape at the bandsaw. For consistency, I refined the saw marks with a hand plane in both components at the same time.

The dovetails were pretty straightforward, ending in a mitre at the rear corner to hide the rebate for the back, which I routed next. A few more things had to be done before glue-up: I had to cut the slots for the inferior drawer stops at the bottom, finish planing all surfaces and apply shellac to the inside of the gallery. Although the dovetails must be flushed after gluing them, it's far more convenient to hand plane the exterior before it's assembled because it becomes awkward in voluminous pieces.

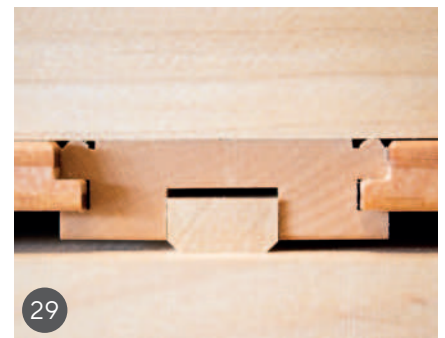
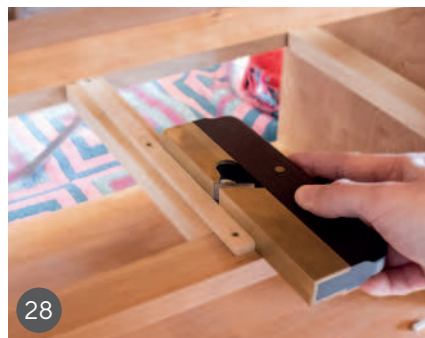
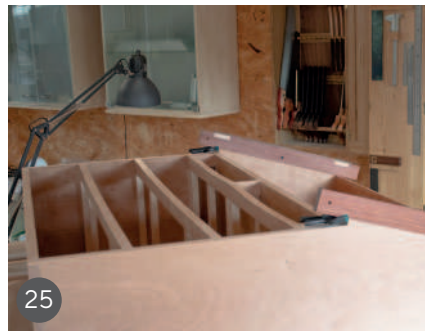
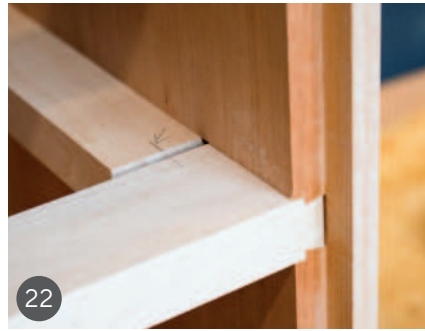
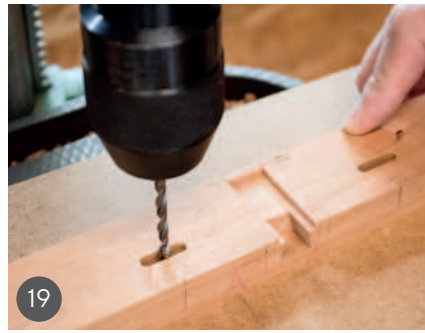
I had been wanting to experiment with traditional animal protein glue for a while, and this project was an excellent opportunity. The fact that this is the only reversible glue that will allow restoration is a significant point. Since this glue is

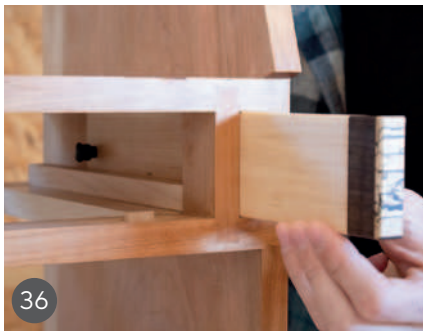
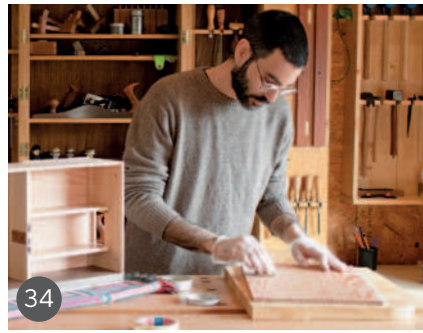
temperature-sensitive and it was the coldest time of the year, I set it up as close to the heating as possible. I wasn't aware of the benefits of adding urea and the open time was quite short, which made things a bit stressful. I used dedicated cauls to close the mitres, effectively exerting the clamping force at right angles to the gluing surface.

It was time to add the drawer rails, which I dovetailed into the carcass. Those dovetails are different to the ones we usually find in corners: the socket runs across the grain as in most sliding dovetails, which can cause splitting while dry-fitting them. The dovetail part goes first (I did that at the router table for speed and consistency), and it's used as a template to mark the socket. Before gluing the drawer rails, we mustn't forget to cut the slots for the drawer stops. I also drilled a through hole at their bottom to easily remove the stops from underneath with a stick. The rails received a slight curve on the front edge to allow the user to access the finger holds underneath the drawer fronts. I cut hinge recesses and tapped the screw holes before glue-up, too.

The drawer runners and kickers are dry-fitted into the housings, glued into the front rails (I used 5mm dominoes for that), and dry-fitted to the back rails with a tolerance for seasonal movement. Otherwise, the carcass sides would crack over time.

The last step to complete the carcass construction was to add the triangular blocks. I did my best to match the grain for a seamless joint, using the offcuts of the slanted cuts I had made previously at the bandsaw. With those rub-jointed, I could check for wind in the surfaces that would receive the slant front. Both triangle blocks should protrude evenly, which I checked with a depth gauge.





18 A dovetail socket inside the runner housing 19 Drilling a through hole at the bottom of the drawer stop slots 20 Hinge recess detail and taping the screw holes 21 Domino mortises to connect the runners and front rails 22 Tolerance for expansion between the runners and the back rails 23 Cleaning up after assembly 24 Cutting the triangle glue blocks for a perfect grain match 25 & 26 Checking for wind and even depth 27 Dovetailing for the drawers 28 Adjusting the guides with a shoulder plane 29 Detail of the grooved muntin and guide 30 & 31 Gluing the 4mm veneers to the drawer fronts 32 Gluing the muntins into the front. The bottoms are dry fitted to precisely locate the muntins 33 Routing the fingerhold recess 34 Waxing the drawer bottoms 35 Rub-jointed glue blocks to attach the bottom 36 Detail of the lid supports with ebony stop 37 The 'concealed' side drawer ejected 38 Detail of the gallery

THE FRONT DRAWERS AND LID SUPPORTS

As we see commonly in slant-front desks, they feature extensive drawers from side to side of the carcass and two smaller ones between the lid supports. The large drawers' width triples their depth, making them prone to rack and stick if not fitted properly. This was an excellent opportunity to try an alternative method to the good old piston fit: the use of wooden guides at the drawer bottoms.

The build was almost identical to the traditional English drawer with slips and muntins. The latter, however, receive a groove along their length that engages with an accurately dimensioned stick fixed inside the carcass, becoming the guiding mechanism. The sides and slips still support the weight of the drawer.

To test this method's accuracy and reliability, I made the two small drawers deliberately undersized (about 0.5mm on either side), making them almost inoperable, before installing the guiding mechanism. When the guide was in place, running inside the muntins, they worked just as nicely as a proper piston fit! The trouble came with the larger drawers, which I fitted with two grooved muntins. The two corresponding guides must be highly parallel and required adjusting with a shoulder plane. Although they work fine, this construction method entails a chance of friction occurring with seasonal movement.

This experiment was delightful but incredibly time-consuming, and I don't find it superior to a proper piston fit. It might also be

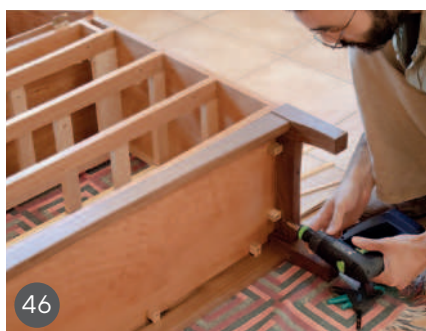
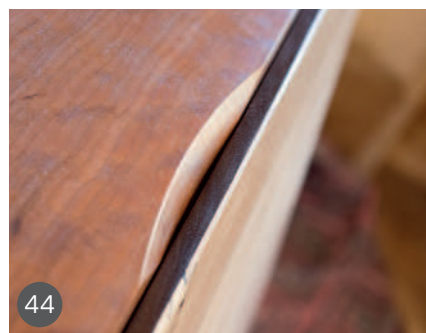
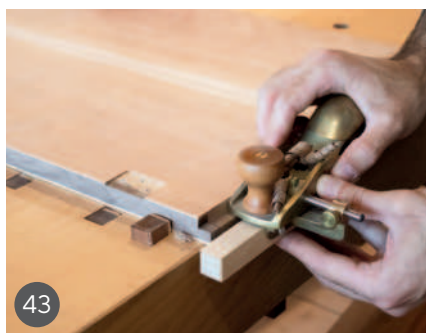
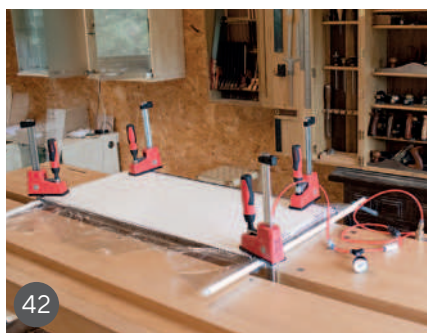
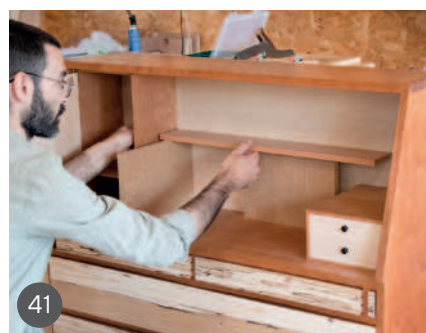
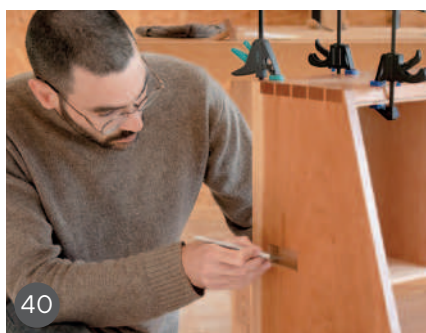
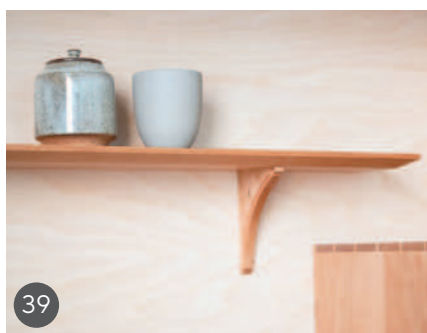
less durable, and guides might need replacing once a century.

I employed through dovetails at the front, covered with 4mm-thick spalted beech veneer, and Douglas fir for the bottom. Instead of installing pulls (they would have been obtrusive), I routed some fingerhold recesses at the front edges to be reached underneath the drawer. I am becoming more aware of conservation, and instead of gluing the bottoms at their front tongues (that can be hard to unglue in the future), I rub-jointed them using small glue blocks that connect them to the front.

The lid supports follow the same aesthetics as the drawers, and they feature removable ebony stops that bump against the vertical dividers. A tiny spring-loaded drawer emerges from the side of a large drawer when the user finds the concealed button that operates its mechanism. This complex feature is hard to describe, and I'll address it separately in the next issue of *F&C*.

THE GALLERY, THE WRITING SURFACE AND THE BASE

With the main drawers installed, I could turn my attention to the fittings in the gallery, leaving the writing surface for last. On the right, we find two drawers fitted to an individual carcass secured to the main carcass using small concealed screws. A small cupboard hangs from the main carcass on the left corner, with a maple-veneered door. Before it was installed, it was necessary to mark and cut the opening for the small exterior drawer.



39 A further detail of the gallery 40 Transferring the drawer opening on the small cupboard 41 Determining the shelf location 42 The veneering set-up with a vacuum bag 43 Fine-tuning the fit of the slant front 44 A finger recess was carved to open the front 45 Installing the spacer for a floating effect 46 Shrinkage buttons allow for wood movement 47 The finished piece before leaving the workshop

It was important to me that the gallery was an inviting space for concentrated work, so I opted for plain light surfaces. I had some difficulty deciding how to go about the cabinet back, and I finally chose 10mm premium Baltic birch plywood for its appearance. It is also a robust material, and I find it suitable in this case. Shiplap or frame-and-panel work wouldn't have had the same effect.

A slender shelf is attached to the cupboard on the left and connected to a support resembling an architectural detail. Deciding its exact location took me some time since every subtle adjustment completely changed the whole interior.

I made the writing surface from 15mm birch plywood to obtain a continuous veneered surface matching the outside drawers. A solid piece with breadboard ends would have been the traditional solution, but it wouldn't go well with the rest of the work. The walnut lippings needed to be generous to receive the rebate on three sides. To have enough glue open time, I added

some urea to the hide glue mix. This would allow me to place the assembly in the vacuum bag comfortably. I could fine-tune the fit of the front in the carcass by taking some judicious shavings on the rebate.

I chose walnut for the base, having screwed a 4mm spacer to lift the carcass visually. It was attached with wooden buttons to allow for seasonal movement.

The last touch of this build was to make and install the small side drawer. I find it to be a playful detail that breaks the boundaries between the outside and the inside, and it comes as a surprising feature in a somewhat uneventful cabinet side. Its capacity is not very functional, but I made sure it could store my cherished brand-new pencil stock.

AFTERTHOUGHTS

Although I put this piece for sale on my website, I hope to be able to enjoy it for some time before I see it go. I have found over



I find woodworking alluring because it is an endless source of challenges

the years that living with the pieces you have made is a great luxury: many things are to be learnt from it, and you gain a new perspective on the design and build choices you made. There is no better way to understand wood movement and develop expertise to estimate the tolerances it requires. This desk has seen extremely dry and humid conditions, and the drawer guiding system has done fine.

About the design, I was a bit disappointed at first with the exterior appearance: the graphic lines of the spalted beech are a bit too strong for my taste, and I found them to conflict with the piece's geometry. Although I like it more and more every day, I wonder how it would look veneered in plain hard maple, as the inside.

I have always thought every wood species has its appropriate finish. Cherry and walnut, in my opinion, are best suited for a hard surface oil or shellac, while spalted beech and maple tend to yellow in an unpleasant way, and I'd rather have them

look bare and matt. I don't share Krenov's inclination for a 'bare finish', so I applied water-based transparent matt varnish to those surfaces. This finish is very resistant and looks like you did nothing to the wood. In addition, I applied a UV filter before the finish to delay the effects of oxidation. The walnut and cherry outside surfaces were oiled, and I used shellac or wax on the inside. This selective treatment of the surfaces has succeeded, and I'll do that in the future.

As you can see, this is a complex build (and you could say I overcomplicated it in some aspects). The building process took about 700 hours, including thorough photography and video documentation. On my Instagram account (@germanperaire), you'll find over 160 short clips with comments explaining every task in detail.

I find woodworking alluring because it is an endless source of challenges, and I hope this article will inspire you to reach new heights.

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STRIKING A CHORD

INSPIRED BY MID-CENTURY DESIGN, YOUNG FURNITURE DESIGNER **SAM WHYMAN** IS MAKING A LIVING FROM MAKING – AND HIS UNIQUE CORDED CHAIR HAS ALREADY BEEN SHORTLISTED FOR AWARDS

Furniture hasn't been a lifelong plan for Bristol-based Sam Whyman, who is just starting out as a maker and has already had a piece shortlisted for both the Wood Awards and the Young Furniture Makers' Awards. 'I ended up in Bristol by chance – I didn't have much of a plan after finishing university in the Midlands,' admits Sam. His girlfriend got a job down in the south west so he moved with her, bringing with him a West Yorkshire accent he says still brings 'some funny looks'.





*'I've been really enjoying what feels like the novelty of enjoying
my day job, making for a living. I love spending my days in
the workshop, and I no longer dread going to work each day.
That's pretty great'*





Sam studied Industrial Design at university, which covered drawing, creativity and CAD, but was very much focused on technology. ‘You were pretty much barred from designing furniture,’ he recalls. ‘I found as I was leaving that I wasn’t too fired up about making gadgets, so I didn’t apply for the same grad jobs my peers did.’ Instead he worked ‘a few random jobs’, including coffee shops and customer service, but all the while was trying to make furniture in his living room. ‘I remember making a hallway shelf and coat hook in a rental house we were living in. I didn’t have access to workshop space at the time, so I had a makeshift workbench set up in the living room. The design of the shelf wasn’t too bad – but the work wasn’t very neat! It was a nightmare trying to Hoover all of the wood dust out of the carpet, and my then housemate didn’t appreciate it much.’

After five years of this he decided: ‘Enough was enough: it was time I went all in. I enrolled at Waters and Acland furniture school in the Lake District and spent seven months there, fully focused on furniture, and I loved it. My family and I were a little worried about me quitting a decent job to pursue making, but the minute I got there I knew I was in the right place. They transformed my skills as a maker, giving me the confidence to know I had a career ahead of me.’

After leaving Waters and Acland, Sam got a job for Bristol-based contemporary furniture-making business King & Webbon. ‘After seven months at school I was pretty broke, and I needed to earn some solid money. I also really appreciate and enjoy

working with others. I do take the odd commission and, while I’d love to start my own business some day and really admire my peers from school who went into their own businesses right away, the time just isn’t right for me.’ So how did he bag this job? ‘Through being friendly on Instagram, and I have found a couple of clients through there too. People love to bemoan social media, but at the end of the day it’s a free marketing tool, plus you can connect with a bunch of woodworkers all over the world. Pretty cool when you think about it,’ he says.

SCANDI STYLINGS

Sam’s interest in furniture dates back to his Dad’s parents, an architect and an interior designer. ‘My grandfather had a little workshop in the cellar of their house, and he made various bits for his house with his – very dangerous – set of tools and lathe. They also had wonderful taste – their house was like a time capsule for 1960s mid-century design, filled with beautiful Scandi classics.’

Those mid-century Scandi styles still inform Sam’s style and inspiration. ‘I love a lot of the old Danish mid-century designers, like Wegner, Juhl and Mogensén,’ he says. ‘It’s sometimes a bit depressing to think about, because those guys were making that stuff 70 years ago at real scale, and I’m not sure we can improve on it aesthetically. It’s fun to try though. I really love Japanese design too – they come from a more industrial design background, but Naoto Fukasawa and Sori Yanagi are real icons



to me,' he adds. 'I use books and the internet to research ideas and inspiration. I'm a big fan of using Pinterest to compile mood boards. Although the ads are annoying, I haven't found a better way to collate inspiration.'

Sam's overall aim is 'to make useful things that are also beautiful'. 'I like to use native woods wherever possible, and natural organic materials. As much as possible I try to avoid making things that are pretentious, or talking about them in a pretentious way. I hate "design speak", where people try to make things sound cleverer or more complicated than they are: a stool is a stool, not a transitional rest bar. Maybe I'd make more money selling transitional rest bars though...'

THE RIGHT TOOLS FOR THE JOB

Sam and his employer King & Webbon are based in a shared workshop, set up by Mark Baker of Baker Bespoke in an old truck garage. 'It really is an ideal set-up,' says Sam. 'We've tons of natural light that comes through the big skylights – it's enough that for 90% of the time we don't use any additional lighting. I've only been here a few months now, but I've no plans to move on in a hurry!'

In terms of tools, he will use whatever gets the job done best. 'I guess my making style is very modern – I use a real mixture of modern machinery and techniques, and traditional hand tool joinery techniques,' he explains. 'The first month or two back at school was basically spent unplugged, so I know I have the skills in the bank to reach for a chisel or plane to quickly get something done in minutes, where the machine tool or jig set-up might take hours. There's no right or wrong for making – whatever suits the piece is just fine by me. I love the peace and quiet of hand-planing, but am I going to dimension stock for a wardrobe by hand? No chance – if you can find me a client prepared to pay for that time though, send them my way!'

Sam particularly loves working with oak. 'The tones and characteristics just look and feel great to me,' he says. 'Working with it can be a little tricky though, as it's pretty splintery. They're often overlooked or seen as cheaper, but I really like to work with ash and beech too.' He also tries to work with other materials to explore their contrasts with wood. 'I recently wove a chair back in cord, and I really love the effect, and the spring that couldn't really have been achieved otherwise,' he says. 'I'm really into woven surfaces at the moment, so I'm trying to find more ways to include it in my work. I'd also love to work with metal, I've done a tiny bit of welding in the past, but I'd be dead keen to get some more practice in to allow me to incorporate it into my work.'

The result of the weaving was Sam's Chord Chair, which combines contemporary style with Danish mid-century influences and was shortlisted for both the Young Furniture Makers Awards and the Wood Awards, in which it was up for the award of Best Student Furniture & Product as *F&C* went to press. Sam says it was the most challenging project he has worked on so far: 'Although the appearance is simple, the sheer number of processes and jigs required to make the thing, along with the whole other new craft of weaving, made it a very challenging make. I learned so much by making it though, and I can't wait to design another chair.'

In terms of finishes, he looks for 'nude' appearances as much as possible. 'There's something about a thick shiny finish that I

just hate,' he explains. 'I want to be able to see and feel the grain and texture of the wood, not hide and obscure it under layers of finish. I mostly use hard wax oil finishes to give the right effect.'

FURNITURE BY DESIGN

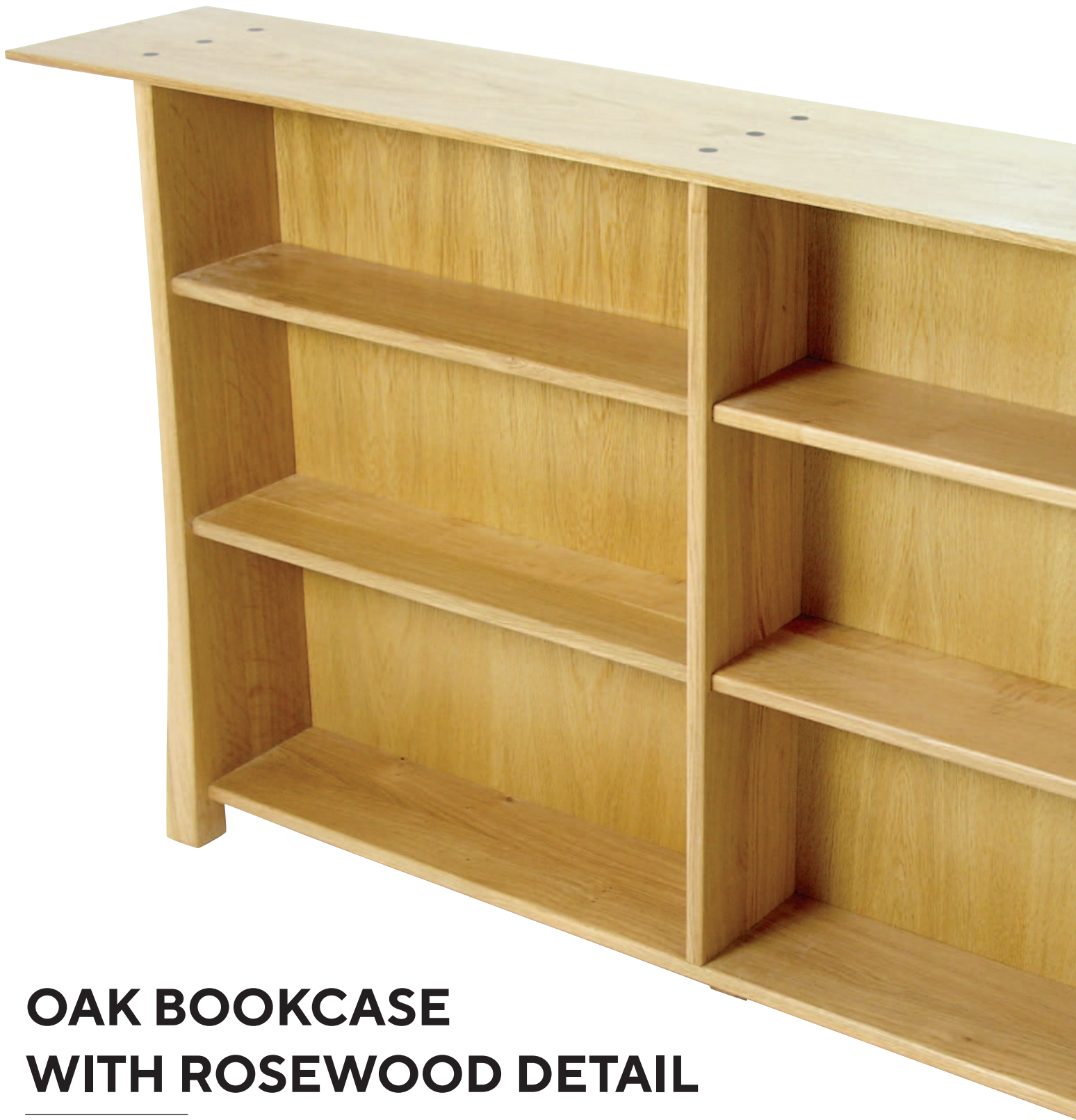
So how does his design process work? 'I usually have something pop into my head some day, which I then marinate for a while. Then I forget all about it, but later on when I'm cooking dinner or something, it pops back up and I write it down,' Sam says. 'At some point I sit down to actually sketch it, and at that point I normally realise it's not very good. From there I'll go back to do loads of visual research to help me to figure out what I'm trying to achieve, then I'll sketch lots of ideas to try and refine the thing. Eventually, I move into CAD to develop specific concepts. Mainly, I try to focus on keeping open-minded as I explore different concepts. If you head into the workshop with the first idea that pops into your head, I can guarantee it won't be very good. The design process is essential to making furniture that is refined, and that actually works for the user.'

Sam's favourite project so far was the first piece he made at furniture school. 'It's a little wall-hanging cabinet that I made almost entirely by hand. The design is super simple – a dovetailed carcass and frame and panel doors. Once I finished that project, I felt I could call myself a furniture maker.'

He particularly loves working with dovetails. 'Making a well-fitted dovetail by hand is an invaluable skill to master as a furniture maker. That said, I'm really not wedded to them. There are plenty of other methods to make a strong carcass or drawer box, and many are more achievable when you're working to a client's budget.' He adds: 'I made what I think is a novel leg joint for a chest of drawers, and I've plenty more planned for it. It's based on a Maloof joint that he used for a rocker, but instead of working with a square profile, mine has a round. In honour of him I've taken to calling it the "rotary Maloof". It's really interesting to me because you can join a leg to a board without the need for a rail, so the whole design becomes much lighter feeling visually, and you create a really interesting detail at the junction between the leg and the top.'

Sam's current projects are a full office suite in quartersawn ash with a desk, shelving and a sideboard, for King & Webbon, while in his own work he is planning another chair and possibly a shelving unit. He is taking jobs as they come and not thinking too much about the future just now. 'I've been really enjoying what feels like the novelty of enjoying my day job, making for a living. I love spending my days in the workshop, and I no longer dread going to work each day. That's pretty great,' he says. When he's not working, Sam is mainly cooking. 'I love good food and don't really have the money for nice restaurants, so I try to make it myself. I'm really enjoying learning more about Korean food at the moment, so we're eating a lot of spicy fermented things. I'm also a big music lover and fortunately Bristol has a great scene, so we get to go to some really ace gigs once or twice a week.'

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



OAK BOOKCASE WITH ROSEWOOD DETAIL

KEVIN LEY BUILDS AN ELEGANT PIECE OF FURNITURE
TO STORE HIS CLIENTS' BOOK COLLECTION

My clients for this piece have a collection of ancient maps and had previously ordered a chest from me to store and display their maps. This bookcase is a companion piece to that chest, being in the same room of the clients' home.



DESIGN

The clients wanted the bookcase to have flared legs and an overhung, under-chamfered top. I was able to use the same style legs and top on the bookcase as I had used on the chest I had previously made for them.

We decided that a partition in the centre of the bookcase would help to compartmentalise the layout of the books and, combined with a central hidden foot underneath the base, give extra support to the shelves.

We also decided on rosewood details to add a bit of interest. I puzzled for some time as to how to include this, before hitting on the idea of 12mm rosewood dowels through the top, sanded flush.

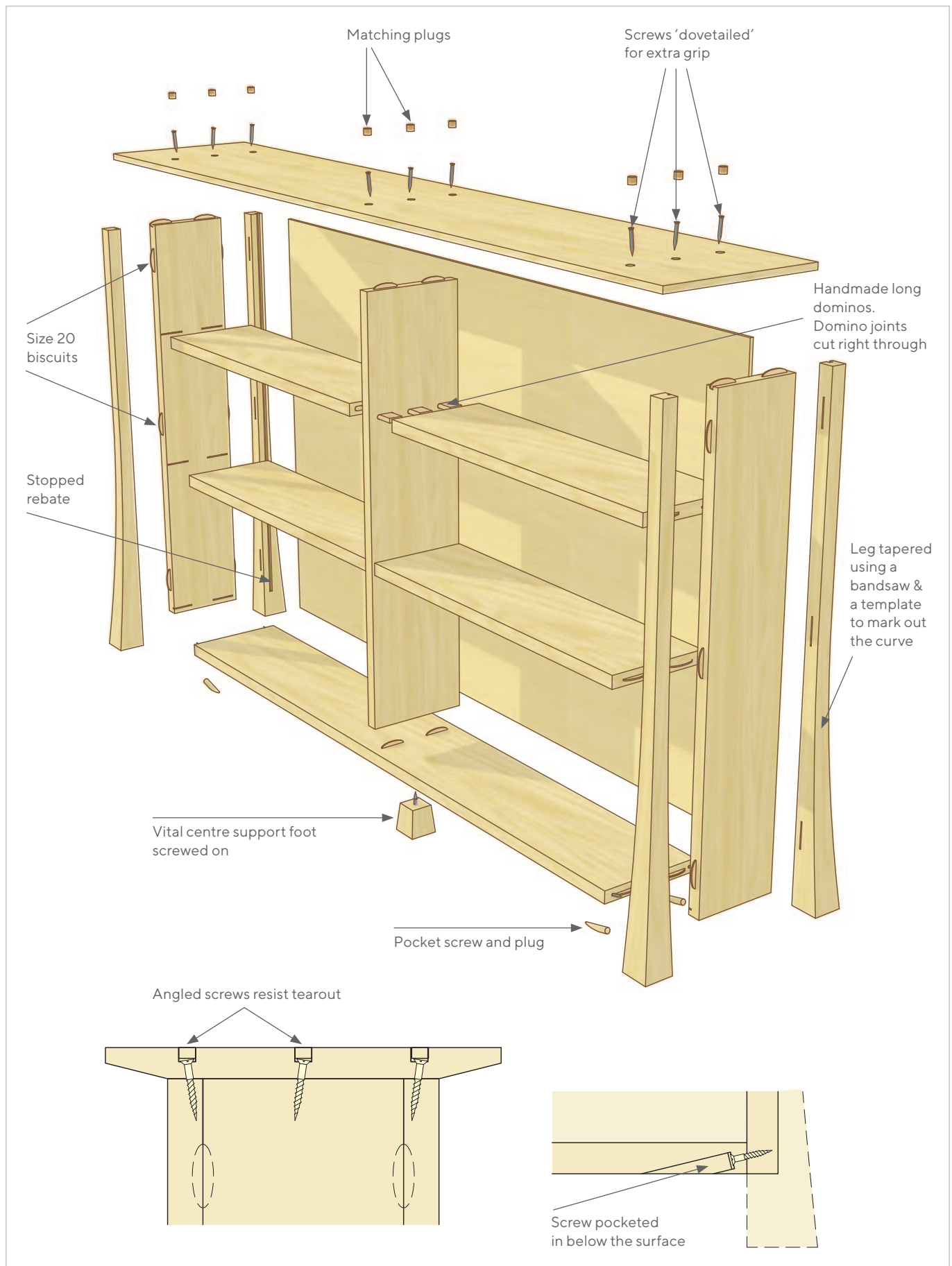
Full bookcases are very heavy and it was likely that at some point, the full bookcase would be lifted by the overhanging top – the top to side joint had to be strong enough to cope. Rosewood is a very oily wood and I was worried that, as a result, the glue might fail in such extreme conditions. I decided to dovetail screw the top to the sides with biscuits to locate and reinforce the joint. Rosewood plugs flush with the top were used to mask the screw heads.

SELECTION AND PREPARATION OF THE TIMBER

Another older piece of mine that the clients liked was a French oak dining table, which had an acrylic finish to keep the colour of the oak light. In the distant past, the French were required by law to plant two oaks for every one they cut down, to ensure plentiful future supplies for warships. Many of the trees were planted close together in stands, encouraging tall straight growth with a nice clean trunk. The wood is mild, clean and straight grained, with a reasonable figure and a nice consistent colour.

Good quality kiln-dried French oak was available at a nearby woodyard in 25mm and 50mm thicknesses, and I made an appointment to select some pieces out of the stack. The moisture content of the timber was about 12%, so I took it to the workshop to condition it down to around 10%. It would condition better after dimensioning as any intake of moisture after kilning is from the outside in, so cutting out and thicknessing would expose the under surfaces, allowing them to stabilise.

The leg blanks were cut from the 50mm stock, and the best figured pieces of the 25mm stock were cut for the top and side panels, the remainder for the shelves, base and partition. All were dimensioned 10% oversize, sticked and stacked, and left to condition in my warm, dry workshop for a couple of weeks. Final dimensioning would take place during construction.





PHOTOGRAPHS BY KEVIN LEY

THE LEGS

The leg blanks were dimensioned and while they were still square, the biscuit slots to locate the side panels were cut. Housings for the back were also cut in the back legs on the router table, again while they were still square.

1 A pattern for the flared shape of the legs was cut in ply on the bandsaw. This was used to mark the leg blanks which were then cut out on the bandsaw.

2 The shaping was finished with a spokeshave ...

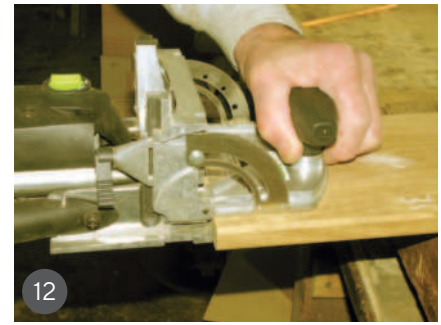
3 ... and a scraper.

4 The outside edges of the legs were rounded over – two of them with a router fitted with a radius cutter.

5 The third edge, which was not accessible to the router, was put on by hand with a scraper and sanding blocks.

SIDE PANELS

6 Each pair of legs would be joined by a panel fitted flush to the inside faces of the legs to form the side. The panels were cut to exact size and thickness, and the biscuit slots for the leg joints cut. The biscuit slots for the shelf ends were also cut in the panel before attaching the legs – it being easier to clamp a guide to the panels' straight edge.



7 The outside faces of the panels were sanded with belt and orbital sanders down to 150 grit.

ASSEMBLING THE SIDES

8 The component parts of the sides were laid out ready for clamping, and test fitted dry. The edges of the panels were adjusted with a jack plane for a perfect fit.

9 Glue was applied to the edges of the panels, and the biscuits and the sides clamped up.

10 After the glue had cured, the inside faces of the sides were sanded down to 150 grit, and the three rounded-over edges of the legs were hand sanded to a finish. I like to get as much of the components finished before final assembly as possible, as there are always hard to reach places otherwise.

11 Long, loose tenons were to be used to join the shelves to each other through the partition. The partition was cut to exact size

and a Domino Jointer used to cut the mortises through it. None of the standard dominos were long enough for the job, so I made some in oak. Biscuit slots were cut in the partition ends for the joins to the top and base.

SHELVES

12 The shelves were cut to exact size and biscuit slots cut in the ends to be fitted to the sides. The Domino Jointer was used to cut mortises in the shelf ends corresponding to those in the partition.

THE BASE

13 The base was cut to size and pockets cut for the joint to the sides. Biscuit slots were cut in the ends for the same joint – they were also cut in the centre of the base for the joint to the partition. Countersunk pilot holes were drilled for the screws reinforcing the joint.

14 Long plugs were cut using the Trend Pocket Hole Plug Cutter.



CARCASS ASSEMBLY

The carcass was assembled in three phases. First one side, two shelves and the partition were assembled. Glue was applied to the biscuit slots in the side and shelf ends, the tenon slots in the shelf ends, and the tenon slots in the partition. The tenons were pushed through the glued-up slots in the partition, into the shelf ends, leaving the bare ends free of glue. The biscuits were pushed into the slots and this unit was clamped, checked carefully for square and left to cure.

Next, glue was applied to the biscuit slots in the side and the corresponding base end, and the partition end and the centre of the base. The biscuits were then pushed home and the screws driven to close the joints.

15 The last phase was to assemble the remaining shelves and side in a similar way, before leaving them to cure. At all stages, great care was taken to ensure the unit remained square and straight by using a roofer's square, and checking diagonals.

16 Once the carcass had set, the pockets and countersunk holes were plugged, and the plugs trimmed flush with the base.

FOOT

17 A central foot was made the same size and shape as the leg end and fixed to the base with a dowel screw, which is threaded at each end.

TOP

18 The top was cut to exact size, marked and drilled with a Forstner bit for the 12mm hole for the rosewood plugs. The angled screw pilot holes were then drilled with a hand drill.

19 Biscuit slots were cut in the under face to match those in the tops of the sides and partition, and a stopped housing cut for the back.

20 The chamfer on the under face of the overhang was marked out, and most of the waste removed with a small, cheap power plane.



21 The chamfer was then finished with a hand jack plane and a random orbital sander.

FITTING THE TOP

22 The biscuit slots were glued up, biscuits pushed home and the top fitted. It was clamped lightly into place to squeeze out any excess glue, and the screws were driven home at an angle.

23 A dowel of rosewood was turned on the lathe, a tad larger in diameter than the pre-drilled holes.

24 The end of the dowel was chamfered slightly on a sanding block for ease of entry and the plug cut off slightly longer than the depth of the hole.

25 Glue was applied inside the hole and the plug tapped home – this was repeated for the remaining holes. Once the glue had set, the top was scraped and sanded to a finish, ensuring that the plugs were flush.

THE BACK

The back makes an important contribution to the strength of this piece. I particularly wanted to use sheet material that could be glued and pinned into position, giving great added strength and stability. The back would be visible in normal use so I made

it from 6mm oak-faced ply, and sanded the edges to a slight chamfer for ease of entry into the housings. With the unit upside down to stop glue runs from the top housing, glue was applied to the housings and the back pushed and tapped into position. At this stage, a final check was made for square and any minor adjustments made. The back was then pinned to the shelves, base and partition, and left to set.

FINISH

I used an acrylic varnish to match the previous piece, and keep the oak light in colour. The surfaces were prepared with power sanders down to 150 grit and finished by hand to 240 grit. The first coat of varnish was diluted 10% with clean water to give a longer open time – it can get tacky very quickly on bare wood in a warm, dry workshop! Once set, that coat was de-nibbed with 320 grit. A further two coats of undiluted varnish were applied, de-nibbing between coats. The final coat was buffed with a soft cloth.

All the way through the making, I tried to apply the finish to the individual components before assembly. This involves masking any glued areas and taking great care during clamping up, protecting surfaces with padding. I think the effort is justified by a better finish, with no runs or dwell marks. It is much easier to get an even finish when the applying pad or brush can be run off the end of the piece. Both myself and my clients were very happy with the result!

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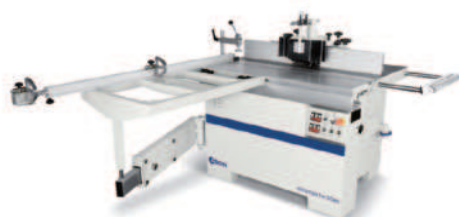
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YOUNG FURNITURE MAKERS EXHIBITION

WE CELEBRATE THE OUTSTANDING WORK OF THE
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The Young Furniture Makers exhibition, organised by The Furniture Makers' Company, made a triumphant return this year, following a three-year hiatus, with 100 of the UK's best emerging designers and makers exhibiting cutting-edge furniture and lighting in the City of London to packed out crowds.

The Young Furniture Makers exhibition was set up by The Furniture Makers' Company over 15 years ago for school children, students and graduates to showcase their work to the design community and connect with potential employers.

The 2022 event was the first live exhibition since 2019 due to the pandemic and took place on 12 October at Furniture Makers' Hall and the Dutch Church in Austin Friars, London.

Students and graduates travelled from across the UK to be part of the event, with the youngest exhibitor being 12 years old, the oldest at 59 and one exhibitor returning from Switzerland to be part of this celebration of furniture and furnishing design.

The event was sponsored and supported by Axminster Tools, Sanderson Design Group and the January Furniture Show. In addition to the stunning furniture and lighting on display, guests and exhibitors were treated to three short informative seminars that formed a Talks Programme. There was also a drinks reception at the Dutch Church where the award winners were announced by William Hardie, founder of Studio Hardie.

Tony Attard OBE DL, Master of The Furniture Makers' Company, commented: 'The Young Furniture Makers exhibition was an absolute triumph – it made me very proud to be Master of The Furniture Makers' Company. The exhibition demonstrates how we make a difference in the most tangible way to students and graduates. I am sure that many of the designers who exhibited will be inspired to pursue a career in the furnishing industry.'

furnituremakers.org.uk



**BEST IN SHOW PRIZE AND
YOUNG FURNITURE MAKERS
DESIGN AWARD:
JACK BRIGGS FOR WAVE**

Jack Briggs of Sheffield Hallam University won the Design Award and the Best in Show Prize for his Wave shelving system. The Design Award recognises the highest standards in the design of furniture for a piece or range which is intended for mass production by designer-makers in higher education.

Jack's modular shelves are made from 6mm laminated plywood but the wave structure gives it the strength of 18mm plywood. He said: 'I would like to thank The Furniture Makers' Company for the opportunity of exhibiting my Wave sustainable manufacture project at the Young Furniture Makers exhibition. With such a high standard of talented designers, I was shocked but thrilled to have won both of the awards and I am excited for what the future holds.'



The Wave range by Jack Briggs won the Design and Best in Show awards

PHOTOGRAPHS COURTESY OF THE FURNITURE MAKERS' COMPANY



**NATIONAL SCHOOL
DESIGN PRIZE:
JIM NOTCUTT FOR CHAIR**

Twelve-year-old Jim Notcutt, pupil at Otwell Park School in Suffolk, was awarded the National School Design Prize for his Chair project. Jim was one of the youngest participants at the exhibition and was competing against GCSE students in his category. His winning design was based on ancient Roman furniture.

Jim Notcutt was awarded the National School Design Prize

YOUNG FURNITURE
MAKERS BESPOKE AWARD,
SPONSORED BY
AXMINSTER TOOLS:
**CLARE NG FOR THE
GEMINI CABINET**

The Bespoke Award recognises excellent craftsmanship for pieces with a clear and specific purpose made by young designer-makers in higher education. This year it was awarded to Waters and Acland student Clare Ng for her Gemini Cabinet. Clare said: 'It's truly an honour to have won the Bespoke Award. The whole experience was utterly surreal and emotional, and I'm grateful for all the support I received throughout the entire process of creating the Gemini Cabinet. No doubt it is a strong recognition, also a reminder for my future self to stay passionate and dedicated in this journey.'



Clare Ng's Gemini Cabinet won the Bespoke Award



YOUNG FURNITURE
MAKERS TEXTILES AWARD,
SPONSORED BY SANDERSON
DESIGN GROUP:
**KRAV METCALFE
FOR THE COCHISE CHAIR**

The Textiles Award is for excellence in the design of furniture that incorporates a creative and sustainable use of textiles. Krav Metcalfe, a student at Rycotewood Furniture Centre, won the award for his Chochise Chair with its woven Danish cord seat.

Krav Metcalfe received the Textiles Award

THE JANUARY FURNITURE SHOW PRIZES

Eight outstanding pieces were also selected to be part of a special feature at the 2023 January Furniture Show, giving the winners the opportunity to have their work viewed by 22,000+ visitors and the opportunity to build high level contacts. The winning pieces were:

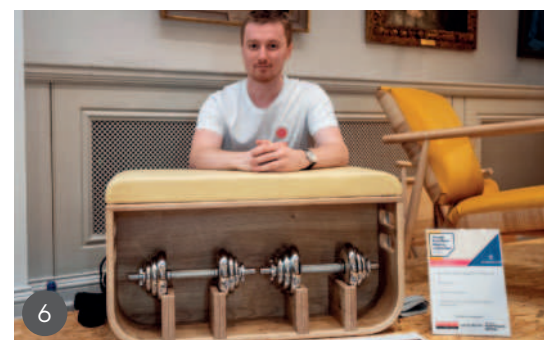
- **Hannah Richards** for the Metamorphosis Stool
- **Philippa Bourne** for the Rest the Mind Sideboard
- **Sam Attard** for the 1988 Sideboard
- **Luke Harrison** for Yasuko Record Storage Unit
- **Lydia Huntington** for the Amuse Chair
- **William Bevis** for Benchmark
- **Isabel Rough** for Snoopy
- **Katie FitzJohn** for the Salvaged Vintage Embroidery Chair



- 1 Snoopy by Isabel Rough
- 2 The Metamorphosis Stool by Hannah Richards
- 3 The 1988 Sideboard by Sam Attard
- 4 Rest the Mind Sideboard by Philippa Bourne
- 5 Yasuko Record Storage Unit by Luke Harrison
- 6 Benchmark storage unit by William Bevis



Eight pieces were chosen to be shown at the 2023 January Furniture Show



INLAY TABLE

ROBERTO RIZZO MAKES A SIMPLE,
BUT NOT TOO SIMPLE, LOUIS XV-STYLE TABLE

I made this square Louis XV-style table from solid wood with a simple inlay to embellish and make the top more attractive. I used pine for the base and tulipwood for the top. I chose pine for the legs and sides because I wasn't sure I was going to be able to achieve what I wanted, and I didn't want to waste good wood. Of course, in hindsight I would definitely have chosen a harder and better-quality wood.

A note on the build: each structure composed of a frame and a solid wood panelling should be designed in such a way that the parts are bound together to maintain the overall shape and at the same time allow the natural expansion and shrinkage movements of the wood. For those interested in reproducing this table, we recommend building the central part of the top in a more inert material, such as blockboard or plywood, veneering it before gluing it to the perimeter frame with the same procedure.





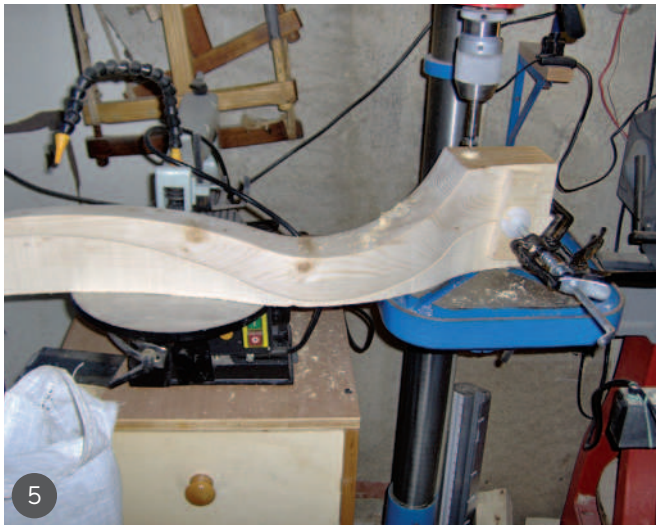
PHOTOGRAPHS BY ROBERTO RIZZO/LEGNO

1 Marking out the legs with the MDF pattern **2 & 3** Rough cutting the legs, making sure the cuts stop a few millimetres before leaving the wood to keep the square wood intact until the end of the processing **4** The leg is finished to shape and the saw marks will be eliminated with subsequent processing

MAKING THE LEGS

The first thing I did was to make the MDF template that I would then use to trace the same profile on various pieces before cutting them carefully with the bandsaw. I made the shape by first drawing a grid of squares. I used spruce lamination with a 14 x 14 section for a height of 800mm. After drawing the shape on each square,

I started the sequence of cuts with the aid of the bandsaw. I used a narrow, multi-toothed blade in order to get a cut that was as clean as possible. This blade gives a clean cut but has the drawback of requiring more time to perform each cut. It should also be said that the greater time spent in the execution of the cut is saved by far in the machining of the profile for the following processing.



5 The mortises were first cut with the Forstner bit. The waste material left on the square wood was used to rest the leg on and keep it square on the drill's table **6** The mortise is finished with a sharp chisel **7 & 8** Marking the rail on the vertical and horizontal planes **9 & 10** The two processes for making the curved rail: the cutting and subsequent reassembly of the parts **11 & 12** Before and after sanding. To work on the pine, the scraper must be perfectly sharp, otherwise problems may arise

Once all the cuts had been made, the legs were rough sawn and then finished where necessary using scrapers and sandpaper. This was done only by hand in order to see all the irregularities that the wood had and make the necessary corrections. Once the legs were finished, I created the mortises using the pillar drill and 20mm Forstner bits. It would have been more correct to cut the mortises before shaping the legs, but since I had never made such precise cuts with a bandsaw I preferred to make all the shaping cuts first and then the mortises, in order to limit 'damage' if something went wrong. After roughing out the mortises with the pillar drill and Forstner bits, I cleaned the mortise with the use of sharpened chisels.

MAKING THE RAILS

The planks for the rails were trimmed, planed and cut to size. I then marked the profile, using the previously created shapes. The dimensions of the boards for the rails are equal to 120 x 880 x 45mm.

After having carefully checked the tension of the blade and lubricated the top with solid soap, I made all the cuts with the bandsaw, an indispensable tool for this process. Once cut, the two parts were held together with clamps and from each board I made a curved rail while the two pieces held together. I smoothed the surfaces using scrapers and, where necessary, sandpaper. Spruce does not lend itself easily to being worked with the scraper, so it is important to make sure the scraper is always very sharp. I prefer to use a scraper in preference to sandpaper because the sandpaper leaves grooves in the wood, too small to see immediately, but very evident at the time of finishing. The scraper, on the other hand, leaves a very smooth, velvety surface. The price to pay, at least with pine, is the continuous sharpening of the scraper in order to 'cut' the wood fibres well and not cause them to lift.

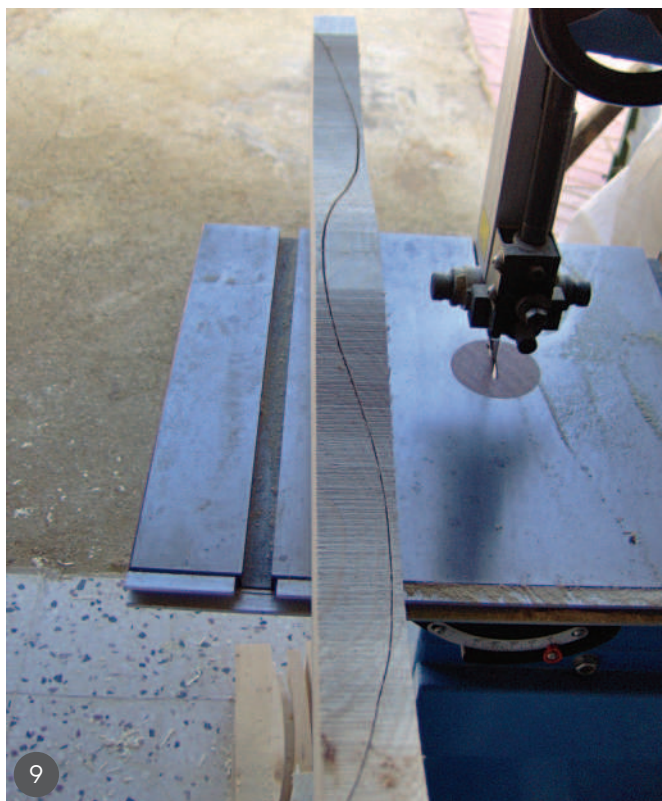
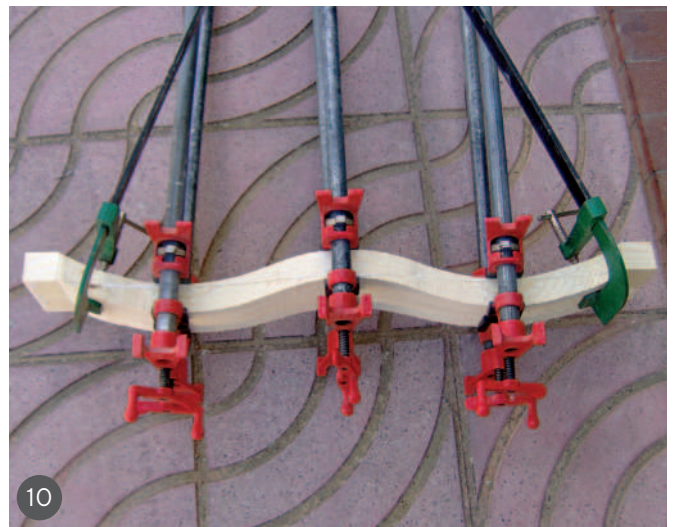
At the end of the smoothing operation, I continued with marking the parts to be removed to make the tenons on the rails. Marking accurately and a precise cut ensures the tenon will fit perfectly into the mortise. For cutting the tenons, I use bow saws. These, although very bulky, allow you to make a good cut in a very short time.

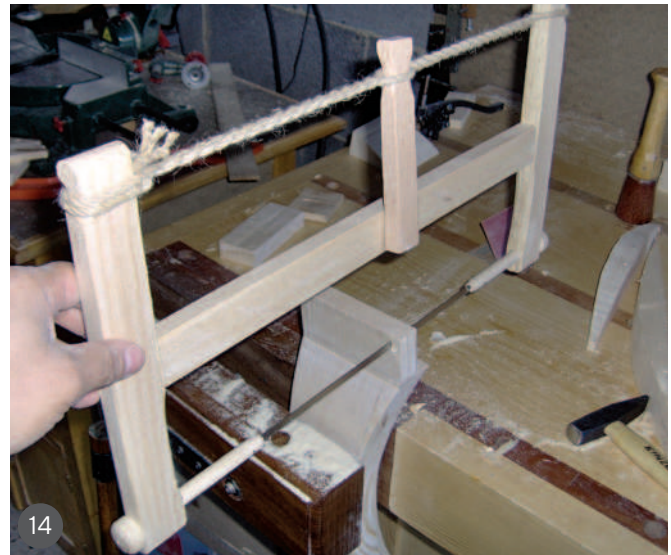
After carrying out the above processes, I dry assembled to check everything. The rail-leg fitting was perfect and only required minor adjustments. As you can see from the photos of the assembled table, the legs, in the lower part of the joint at the junction of the rail-legs have a step to the rail so I smoothed the legs to meet the rails.

MAKING THE TOP

Given the success of the legs and rails, I thought it appropriate to use a slightly more 'noble' wood for making the top. This was also dictated by the fact that, unlike the legs, which only have the task of supporting the table and looking good, the top is more prone to scratches and dents. Making it in too soft a wood would have been condemning it to a short life. I chose tulipwood, a wood that has characteristics of easy workability, a beautiful grain and is easy to find. The first thing I did before buying the timber was to make drawings and evaluate how many and which pieces I would need. When I went to the seller, I chose a large piece measuring 3,000 x 320 x 55mm. I made the first cuts with the help of a chainsaw, then marked and cut the pieces needed for the plan. After leaving the cut boards to acclimatise for a few weeks, I planed them to near the required thickness.

Next, I assembled the pieces for the perimeter of the top, this is needed to determine the exact size to cut the boards. Once the 45° cuts were made for their mitres, I carried out a dry fit test to better define the subsequent processing. I positioned the boards precisely





13 & 14 The bow saws used for the tenon joints. Thanks to the long blade, cutting was very quick **15** Dry assembling shows the step between the leg and the rail (indicated by the arrow) has been eliminated by rounding the upper part of the leg **16** Shaping of the outside of the top **17 & 18** The internal composition of the top: starting from the central square, adding the triangles to complete the filling **19** After the first coat of stain, the wood shows its grain pattern arranged to form a geometric design **20** The maple and mahogany sandwich from which the inlays were made **21** The completion of the inlay with the insertion of the maple strips in a central position **22** Masking was necessary to prevent mahogany dust from contaminating the surrounding wood

on top of the table base and marked the external shape so that they matched those of the base and cut them with the bandsaw.

To join all the boards together, I made grooves in them on the router table that stop 30mm before their edge. The same groove was also cut in the edges of all the internal square parts. Having made sure that the dimensions of the assembled internal boards corresponded with those of the perimeter frame, I began to dissect the table into the various pieces that I needed, then proceeded umpteen times to dry assemble them and test their fit. This test fitting process also helped me to identify how best to arrange the boards in order to obtain a good match of the grain and eliminate defects in the boards by cutting them out.

After identifying and marking the boards I planed them to thickness to bring them all to the same size. I then cut 45° mitres on the largest central square. I continued to cut the various boards until the plan was completed. I cut grooves in the edges and a loose tongue was used to hold all the parts together.

Having prepared all the parts that make up the top, I glued and assembled them together starting from the inside out. After waiting for the glue to set, I smoothed the top using a No.7 hand plane (it has a very long sole and is used to level large surfaces) then I switched to a No.4 (it is shorter and serves to do some finishing). It was then the turn of the scraper and finally the sanding, which I started with a 400 grit and ended with a 600 grit.

THE FIRST FINISHING PROCEDURE

After the carpentry operations I proceeded to the first finish using walnut stain. I gave two coats of mordant stain

interspersed with sanding with 600-grit paper. The mordant, dissolved in warm water and applied on the surface of the wood, has the effect of raising the fibres. When drying is complete, they remain in the raised position so that when they are sanded, they are sheared, making the surface of the wood smooth and velvety to the touch.

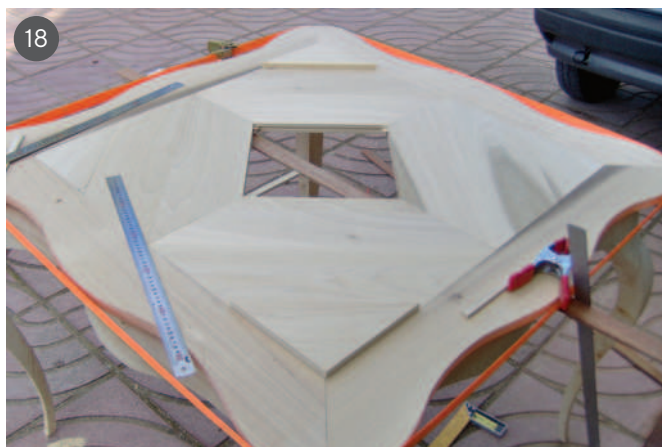
THE INLAY

To embellish the top, I decided to create a two-tone inlay that will give added appeal to the work without taking your eyes off the table as a whole. The inlay consists of a simple sandwich of two different coloured woods. I used maple for the light parts and mahogany for the dark. I cut the strips of wood with a bandsaw and finished them using a small hand plane.

For cutting the groove in which to house the inlay, I used the router with a plunge cutter, resting it on a system of guides suitably arranged to obtain maximum precision. For the inlay that runs between the four sections of the top I only used a strip of maple with a smaller section than what was used around the perimeter.

FINISHING

To avoid staining the darker colour with the mordant during the sanding phase, I added a coat of shellac only on the inlays. I then carried out a precise sanding of them and applied a second coat of shellac with a higher concentration. After completing this first operation, I finished the table with about 25 coats of shellac, starting from a higher concentration and gradually decreasing it until the polishing phase for which I only used alcohol.





OAK DRESSER WITH RACK

JIM ROBINSON MAKES A SHAKER-
INFLUENCED NARROW DRESSER
TO FIT IN A WALL RECESS

Many of us aspire to own a dresser both for display and for very practical storage reasons. However, the size can be rather offputting when it comes to actually building one. Thankfully this narrow version can fit in many more spaces than the typical wide unit that most people have. It is also cheaper on materials and easier to manage, especially in a small workshop. The simpler Shaker-influenced style also fits in better in many situations.

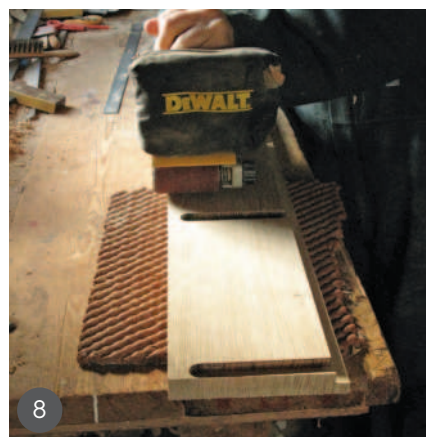
Oak was the chosen material for this project, although it would be interesting to see it executed in a typical Shaker timber such as cherry or maple. I used 25mm sawn oak boards for most of the unit, but if you can obtain 19mm or 12.7mm backing boards there will be less waste. I decided to make the rack first, because longer boards are required – the smaller lengths will be incorporated in the dresser.

PREPARING THE TIMBER

1 After planing and thicknessing to 22mm thick and making up the width if necessary, cut and plane the wood for the sides to 156mm wide so you can take out a 16mm-wide rebate for the back. This will be trimmed to 12.7mm, to remove any breakout which occurs when using the router.

RACK

The shelves are 19mm thick. Make the two lower shelves 140mm wide but the upper two only 127mm wide to allow for the 12.7mm-thick arched fronts. Make the shelves 25mm longer to allow for the housings.



PHOTOGRAPHS BY JIM ROBINSON

2 Rout the 12.7mm deep housings for the four shelves in the rack sides, stopping the housing 12.7mm short of the front edge using a 19mm diameter straight cutter and a made-up batten guide. Make a similar housing at the inside top of each side. When the top is cut off, a rebate is formed to fix the rack when the shelves are joined to the sides.

3 The rebate for the back is routed out along both side boards using a straight cutter and fence.

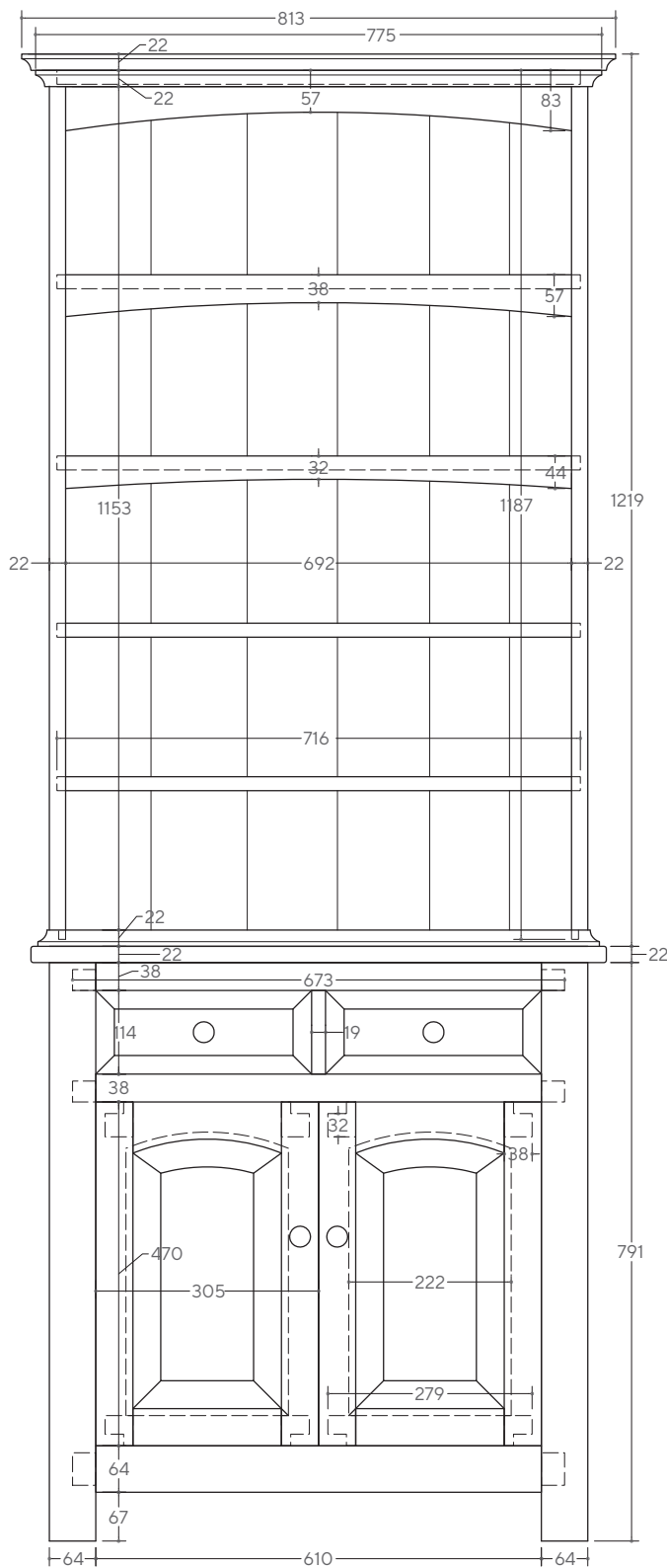
4 Any tearout is removed by planing the back edges, leaving the correct 12.7mm width rebate for the back panel.

5 Take out a housing on the outside face of each side bottom; when this is sawn through, a 10mm-deep tenon is formed to fix the sides to it.

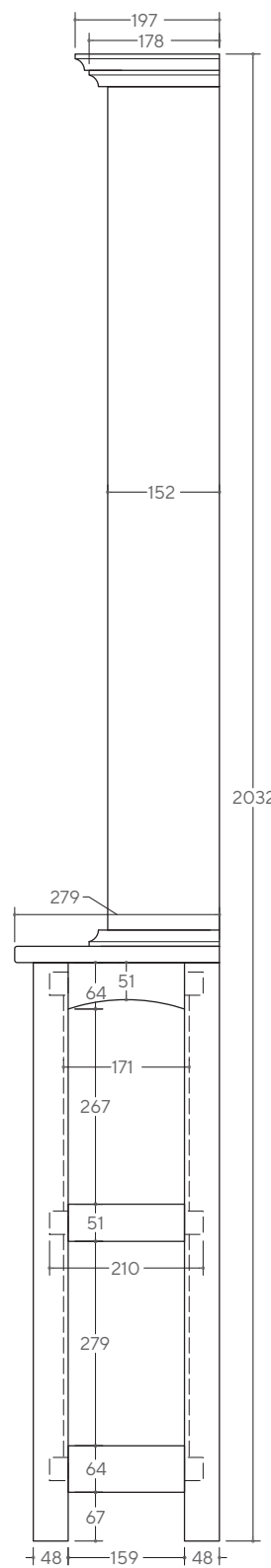
6 The shelf front edges are notched out ready to fit in the rack when it is assembled.

7 The rack needs to be dry assembled to check everything fits together properly.

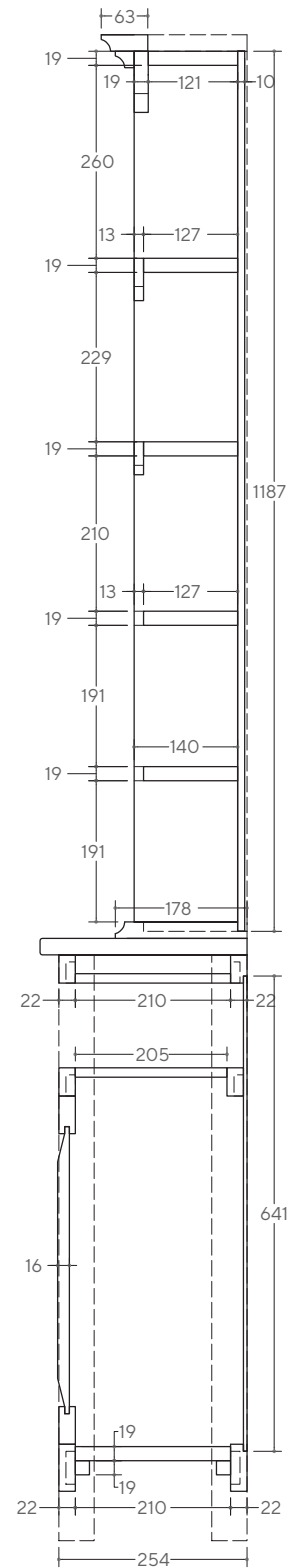
8 Sand the shelves and sides down to 400 grit starting with a belt sander and completing the work with an orbital sander.



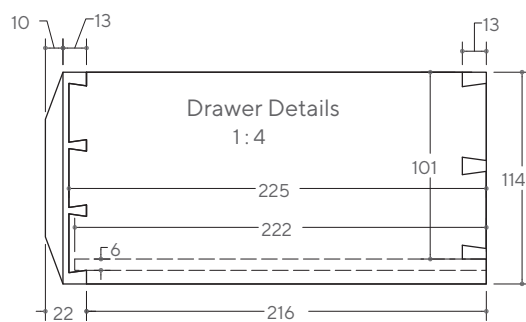
Front Elevation
1:10



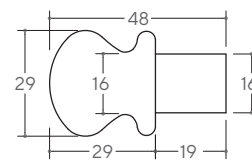
Side Elevation
1:10



Section
1:10



Drawer Details
1:4

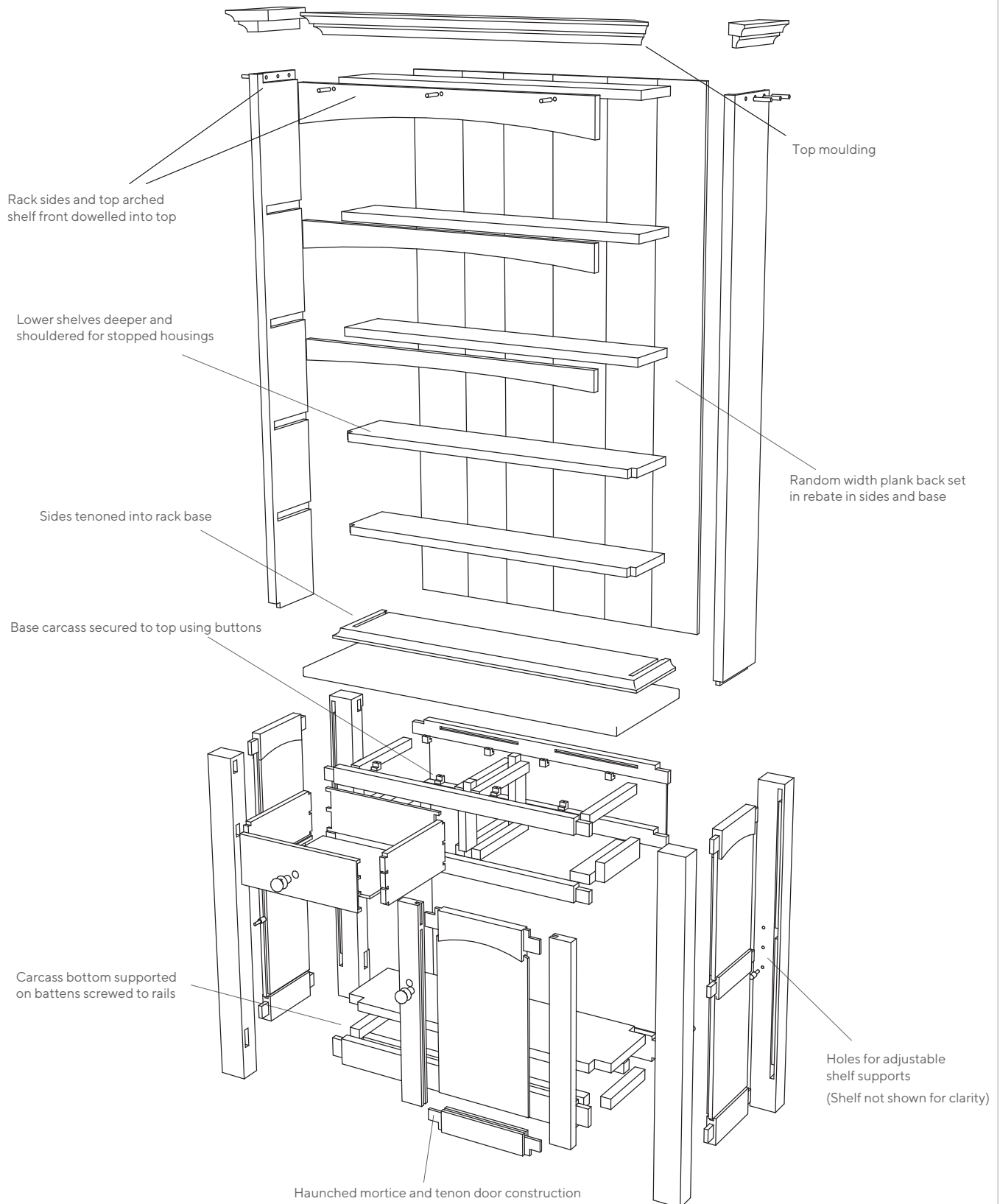


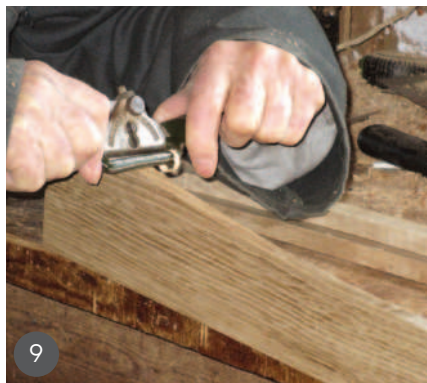
Handle Details
1:2

Cutting List : principal components only, see drawing for other details

RACK SIDES	2 @ 1187 x 152 x 22
RACK BASE	1 @ 768 x 178 x 22
RACK TOP	1 @ 716 x 121 x 22
MOULDING	1 @ 813 x 63 x 22
MOULDING	1 @ 775 x 25 x 22
MOULDING	2 @ 197 x 63 x 22
MOULDING	2 @ 178 x 25 x 22
SHELVES	2 @ 716 x 127 x 22
SHELVES	2 @ 716 x 140 x 22
BACK	1 @ 1187 x 718 x 10

BASE TOP	1 @ 787 x 279 x 22
LEGS	4 @ 791 x 64 x 48
FRONT/BACK RAILS	4 @ 673 x 38 x 22
FRONT/BACK RAILS	2 @ 673 x 64 x 22
SIDE RAILS	4 @ 210 x 64 x 22
SIDE RAILS	2 @ 210 x 51 x 22
PANELS	4 @ 291 x 171 x 16
BACK	1 @ 641 x 630 x 4
BOTTOM	1 @ 692 x 210 x 20





9 All the arch curves in this project are bandsawn out roughly and given a final shaping with a round-bottomed spokeshave. Fit the arched pieces at the front of the shelves and glue them in position before fixing the shelves in. The two lower arched shelves are glued together.

10 The upper shelves have a notch at their end formed by the arch piece. Cut a small notch at the front ends of the two lower shelves so that they enter the sides. The shelves can now be glued into the rack. Apply glue to the housings only, assemble and hold in clamps until set.

THE RACK BASE

11 The base of the rack is 178mm wide by 762mm. Here a piece of quartersawn prepared oak is glued to the board to make up the full width. Place the sides on the base and mark the position for the long mortises. Trim the ends when the position of the mortises for the long tenons on the base are established. Take out the mortises using a 10mm diameter straight cutter.

12 The tenons are now fully formed on the bottom ends of each side of the rack ready to fit in the base mortises.

13 Before fixing the sides to the base, use a self-guided coving bit to form the rack base moulding. Insert the bottom of the rack into the housings on the sides from above, the rear of this bottom board has a rebate.

TOP

14 The top board is glued and fitted into place. Note it has a rebate to take the back panel. This joint is reinforced with dowels inserted into the ends through the top of the sides. The front arch is screwed into place to complete it.

TOP MOULDING

15 This is made in two parts 12.7mm thick, similar in style to the moulding on the base. The upper part is about 64mm wide so that it can be fixed to the top by gluing and screwing the mitred joints.

16 The lower moulding is cut to fit below the upper moulding and covers the dowel ends, shown here inverted for assembly.

THE BACK

17 The back is random width planked oak. This is best made no more than 76 x 10mm so each piece requires just one screw fixing, thus avoiding the risk of splitting. Work a small rebate on the reverse side to create a small overlap. I prefer to create a small 'V' joint on the front face which is formed by a small chamfer on each board using a bevel cutter in the router.

DRESSER BASE

18 The dresser is made of 25mm-thick oak boards, mostly sawn through and through. I did have a small quantity of quartersawn oak, which I used for the drawer fronts and the visible dresser top front section, because it is nicely

figured. Make sure any 'show' wood is going to be of suitable dimensions before you start.

THE ENDS

Cut two pieces to finish 790mm long and 133mm wide, plane one side flat and thickness to 48mm. Plane both edges square and cut in half to make the legs 64 x 48mm. Each end consists of top, centre and bottom rails. The lower two rails are straight with a concave shape on the top rails. The panels have a rebate all round so they fit into a 10mm wide slot.

19 Use a fence-guided router to make a 10mm wide, 10mm deep trench. I had to extend the projection of the cutter in the case of the concave part to achieve a reasonable depth – this works fine for a shallow curve. The rails are joined to the legs with 10mm-thick tenons, so the depth of cut is extended to 25mm at the rail position. The top is fitted to the dresser with table buttons to accommodate changes due to humidity and temperature. The same 10mm diameter cutter is used to take out the slots needed in the inside of all the top rails, with the fence adjusted to give 10mm spacing.

Mortises are required in the legs to accommodate the front and rear rails. The middle rear rail is set in 10mm for the MDF back, the position of the mortises are all kept the same, the variations being made by adjusting the tenon shoulders. Take out all the front and rear rail mortises to a depth of 32mm, using a 12.7mm diameter straight cutter guided by a fence to take out the waste, then chisel the ends square.

20 Complete the router work on the legs with a bearing-guided cutter to make a 10mm deep by 12.7mm wide rebate for the back. A similar rebate is needed on the inside of the rear rails.

21 The tenons on the end cross rails are cut on the bandsaw. Cut all the rails to length allowing extra to allow for the length of the tenon i.e. a total extra of 54mm. Set your bandsaw fence 27mm from the blade and cut all the side shoulders.

22 Next, adjust the fence to remove 6mm from the outside face of the tenon. Make a further cut after adjusting the fence to make a tenon 10mm thick. Mark the width of the tenon from the mortises so the shoulders can be removed to hopefully give a good fit.

OAK PEGS

Oak pegs strengthen the mortise and tenon joints and add a decorative feature. Holes are drilled 6mm diameter at the peg positions. I make my own dowel using a dowel plate. Short strips of oak were cut a fraction over 6mm square, before rounding the corners slightly and one end tapered to enter the dowel plate. This can be placed over a convenient hole in the bench and short lengths of oak driven through with a hammer. Each strip is cut in half to make two pegs. Glue is applied to the dowels and tapped into the holes with a hammer. Leave them slightly proud so that they can be pared flat later.



23 Once the cross rails have been fitted, cut the panels to length and machine the tongues using a rebate cutter.

24 Have a dry run to ensure everything fits together – use a rubber mallet to avoid any damage to the tenons.

25 Drill the 6mm diameter holes in the legs to take the brass shelf studs, as it is easier to do before assembly. Make a jig from scrap wood to ensure the holes are evenly spaced and perpendicular; this is clamped to each leg in turn so that all the holes are in the correct position.

26 The end frames and panels can now be glued together after sanding.

FRONT AND REAR RAILS

27 Tenons are cut in the front and rear rails using the bandsaw. All the mortises are set in the same amount, so make the tenon on the rear middle rail with the shoulder on the inside so that the outside face is in line with the rebates cut in the rear legs and top and bottom rails so the back finishes flush with the middle rail.

28 Sand the rails and glue them into position to complete the basic carcass.

THE BASE

29 The base is 15mm MDF cut to fit neatly between the bottom rails, with cutouts around the legs. The base is fixed by gluing and screwing battens to the inside of the rails, so the base finishes a fraction below the top of the rails to prevent any damage in use. The same material is used for the adjustable shelf that rests on the shelf studs. The front edge has an oak lipping which is sanded flush. The drawer guides, runners and kickers are glued and screwed in position. The small drawer divider has a notch taken out to fit on the rails. When driving screws into oak they should be brass or plated to prevent the steel corroding, due to the presence of tannic acid in the oak.

THE DOORS

The door construction is similar to the dresser ends. Make the surround first, oversize so that you can trim to fit once glued together. Make the size of the panels by taking measurements from the surround, allowing for the 10mm deep slot. Plane and thickness the panels to 16mm thick ready for fielding to a width of 38mm.

30 Set the bandsaw table at an angle to remove the waste before hand planing smooth. If you make the thickness of the fielding oversize where it enters the groove you can make a very slight chamfer on the reverse until it fits.

31 The door frames and panels are dry assembled. Once they are glued up and dry, the excess ‘horns’ can be cut off.

HANGING THE DOORS AND ADDING FASTENERS

The doors are hung using a pair of 50mm brass hinges let into the door surround only, not into the doors themselves. Trim the doors before fitting the magnets.

32 Normal magnetic catches make a horrible clunk, so I have used rare earth magnets 10mm diameter and 5mm thick. Magnets are inserted into the top and bottom of the door frame and also into the rails above and below the door. The position of these holes should line up. The centre ones on the shelves can be positioned 2mm further into the carcass so the door pulls in slightly. Do not drill the holes in the doors until they have been hung, so that the exact position can be marked for the holes in the carcass.

33 A Forstner pattern 10mm bit is used to drill the holes. The magnets should lie just below the surface, the correct way round so the poles ‘attract’ to then be covered by a thin wooden plug pared flush after gluing. Cyanoacrylate is used to glue the magnets and plugs in place. I used a 10mm Veritas taper plug cutter to make plugs which when fixed in place were almost invisible.

DRAWERS

34 Two small drawers are fitted above the lower dresser drawers. The guides, runners and kickers were fixed in place by gluing and screwing. The drawers have hand-cut dovetails although the bandsaw is used to remove the waste between the tails and pins. The sides and backs are 12.7mm thick with the fronts 22mm thick. The dovetails in the front are 10mm wide so when a 10mm-thick fielding is made the fronts do not appear thick. Most of the waste between the front pins is removed with a 6mm diameter straight cutter set to a depth of 12.7mm and a 10mm width of the cut. The drawer fronts are quartersawn, straight grain oak, so it is easy to trim the tails with a sharp paring chisel. I cut the tails first and then used a marking knife to mark the outline of the pins. This leaves a small groove in which to rest the chisel so you get a good fit every time. A groove 6mm wide and 5mm deep is cut in the sides to take the bottom board. Before gluing up, a 12.7mm diameter hole is made to take the knob. The drawer bases are 6mm-thick MDF knobs for the doors and drawers are then turned from 32mm square section timber.

DRESSER TOP

35 The wood with the most figure and the required 787mm length for the top needs to be put aside as the job proceeds. If necessary, join two boards to make the correct width. These boards are planed and thickened to 12.7mm. Use a butt joint strong enough with modern glues. The top and edges are sanded smooth down with a belt sander followed by a palm sander using finer grit sizes. The upper front and side edges are moulded with a self-guided 10mm radius roundover bit in a handheld router; the lower front and side edges are treated similarly but with a 6mm radius roundover cutter. The top is held in position with table buttons allowing for slight movement to prevent splitting.

FINISHING

I used two coats of Danish oil, which gave it a slightly darker wet look and provided a base for waxing. The rack can stand on the dresser base without any fixing, but a small length of wood on top of the rack allows it to be fixed to the wall behind.



SEVEN-DRAWER CHEST

ANTHONY BAILEY MAKES A MISSION-STYLE
CHEST OF DRAWERS FROM AMERICAN OAK

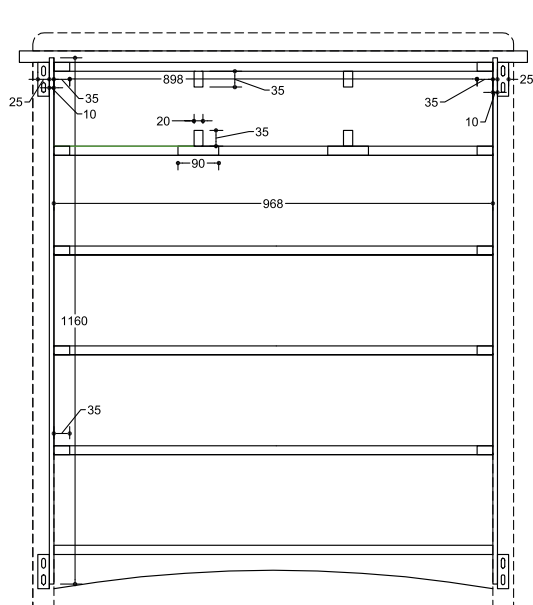
This substantial and imposing chest of drawers was made for a bedroom decorated with Mission-style furniture. This style began in the US in the late 19th century and was associated with the

American Arts & Crafts movement.

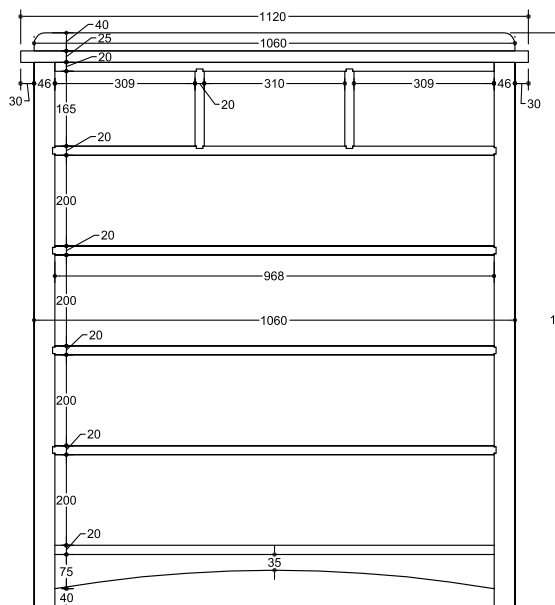
Unlike a typical Georgian or Victorian chest, which would have drawers graduated in size, with the smallest at the top and the largest at the bottom,

this chest has equal-height drawers apart from the top row.

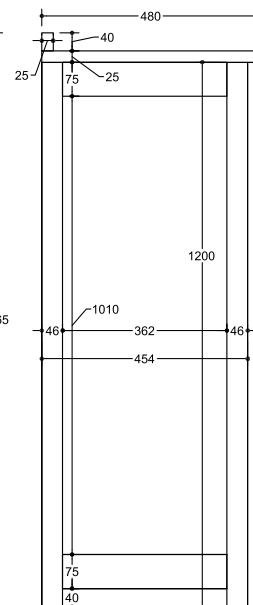
The timber is American white oak, finished with a sealer coat and waxed to keep the look as natural as possible.



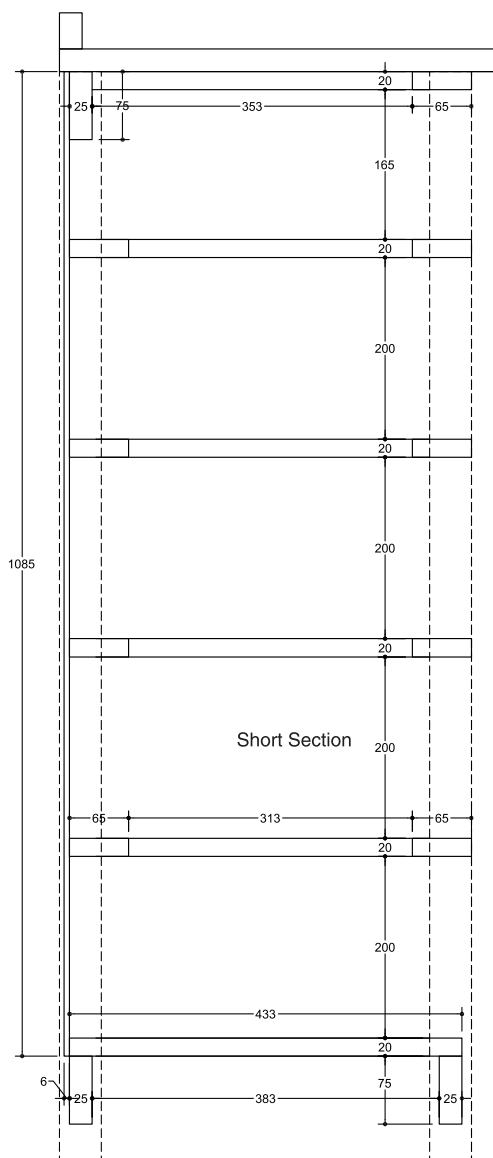
Long Section



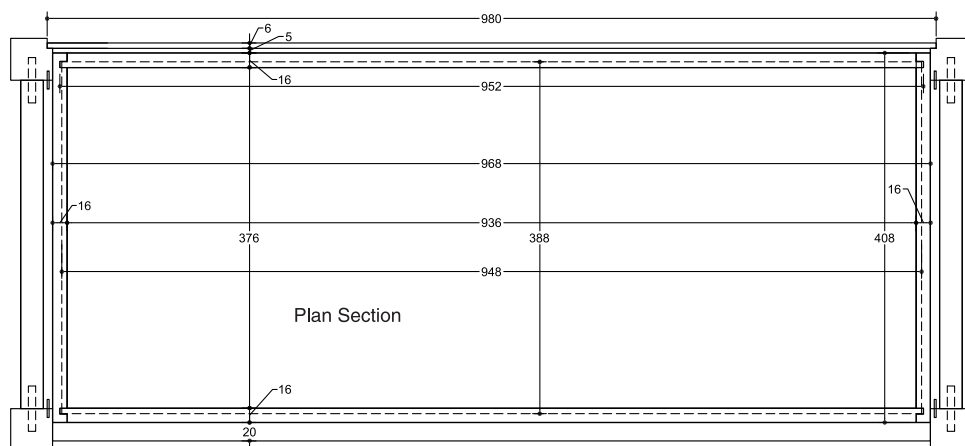
Front Elevation



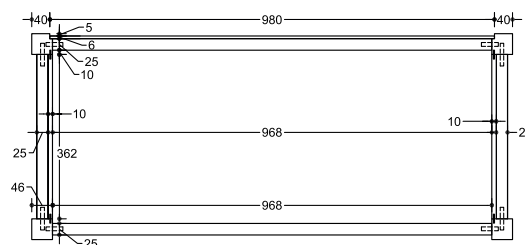
Side Elevation



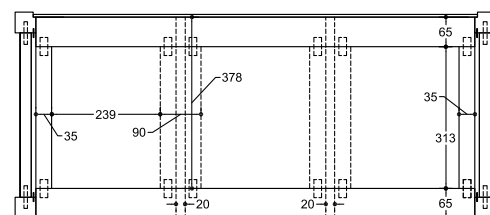
Short Section



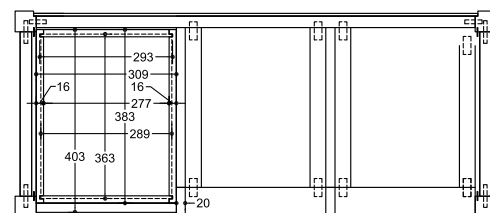
Plan Section



Plan Section



Plan Section



Plan Section

Cutting List

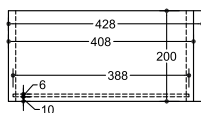
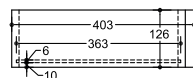
TOP.....	1 @ 1120 x 480 x 25
TOP UPSTAND.....	1 @ 1060 x 40 x 25
LEGS.....	4 @ 1200 x 46 x 46
SIDE RAILS.....	4 @ 362 x 70 x 25
SIDE PANELS.....	2 @ 1160 x 362 x 10
BOTTOM RAILS.....	2 @ 968 x 75 x 25
TOP BACK RAIL.....	1 @ 968 x 75 x 25
TOP FRONT RAIL.....	1 @ 968 x 65 x 25
BACK.....	1 @ 1085 x 980 x 6
BOTTOM SHELF.....	1 @ 968 x 433 x 20
DRAWER RAILS.....	8 @ 978 x 65 x 20
SIDE RUNNERS.....	10 @ 313 x 35 x 20
DIVIDERS.....	2 @ 175 x 65 x 20
GUIDES.....	2 @ 353 x 35 x 20
GUIDES.....	2 @ 378 x 35 x 20
MID RUNNERS.....	2 @ 313 x 90 x 20
MID KICKERS.....	2 @ 353 x 90 x 20

SMALL DRAWERS

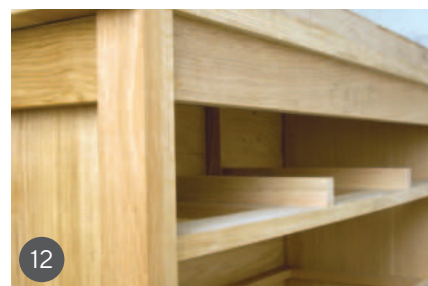
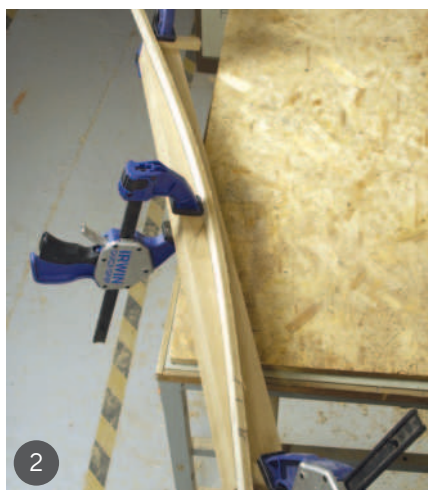
DRAWER FRONTS.....	3 @ 309/310 x 165 x 20
BOX FRONT/BACK.....	6 @ 293/294 x 165 x 16
DRAWER SIDES.....	6 @ 383 x 165 x 16
DRAWER BASE.....	3 @ 363/364 x 289 x 6

LARGE DRAWERS

DRAWER FRONTS.....	4 @ 968 x 200 x 20
BOX FRONT/BACK.....	8 @ 952 x 200 x 16
DRAWER SIDES.....	8 @ 408 x 200 x 16
DRAWER BASE.....	3 @ 948 x 388 x 6



Drawer details



PREPARATION

This project uses a very large amount of timber and there is wastage because even American oak suffers from splits, shakes and knots. Keep your best boards for matching colour and grain for the drawer fronts, and find good matching boards for the top. The back panel, end panels and drawer bottoms are all oak-veneered ply – not authentic but it looks fine and saves on cost and preparation time. Study the plans carefully and make up what is a substantial cutting list.

Cut out all the major components first, especially if they need to be wide boards – with any luck narrows can be cut from the waste sections. Keep component lengths down to only what is required plus wastage or you will end up planing boards bowed from end-to-end down to less than acceptable thickness!

Overhand plane one face and one edge and check all boards for square. The top needs to be made from four boards, slightly overwidth, as does the bottom board in the carcass. All the other boards can then be thickened to width.

CARCASS ENDS

Assemble the ends first as these match and form sub-assemblies, thus breaking down the whole procedure for carcass assembly into bite-size pieces. I used Domino components, but you can use mortise and tenon, in which case add tenon length to the top and bottom rails. Cut the stiles and rails to length.

The 10mm oak-veneered MDF panels butt between both stiles but go up behind the top and bottom rails; note how the MDF extends 10mm above the top rails so it can slot into the top when that is fitted on.

Firstly, joint the stiles and rails together using a Domino jointer and 8 x 50mm Dominos; the position of the joints is important so the inside of the rails and MDF lie flush together.

1 Dry assemble and carefully measure the gap width as it is critical for a neat fit. Cut the MDF to the measured width and

to length then biscuit slot into the stiles. Sand all awkward-to-get-at edges and faces, glue and assemble. Check for square and leave to dry after cleaning off any excess glue.

THE RAILS AND BOTTOM BOARD

2 The front and back carcass rails are now cut to fit between the carcass ends and Domino-ed using two per joint. Use clamps and a strip of MDF to create a curve to mark against.

3 The bottom end rail curves are 'pack cut' on the bandsaw to a line and then belt sanded to get a smooth curve.

4 Dry assemble and clamp up in order to measure accurately the space between the ends for all the drawer rails. The size should be consistent throughout.

5 Measure up for the carcass bottom board; this can now be cut exactly to size.

6 Dry fit it in place, mark biscuit positions where it meets the carcass ends and onto the front and back rails; note the end slots must be 'O' biscuits to avoid showing through the end panels.

7 Knock the assembly apart, then biscuit and glue the bottom board to the front and back rails only. Note the block used to keep the assembly square.

FIXING MISTAKES

Let's face it, no one is perfect, least of all me! In this case I forgot the ply panels went between the end stiles, and Domino-ed the rail flush with the inside face of the stiles. But the problem could be fixed ...

8 The answer, as with mis-slotted biscuit positions, is simply to glue and plug the

wrong holes, in this case with Dominos, which have been cut in half.

9 Saw off the projecting part with a fine-tooth saw and trim flat with a plane.

10 Re-joint in the correct position and the old plugged holes will be completely hidden and this mistake kept a secret – just between you and me...

DRY ASSEMBLY

11 Now dry assemble the carcass with rails in place, using a block and mallet.

12 Get the rails flush on the front and the back ones knocked forward to give the correct gap for the back panel; note that you will need to clamp across the carcass middle to allow the dovetails to go in easily without damage as the carcass will almost certainly bow a little. Here you can see the back panel allowance on the finished piece.

DRAWER SUPPORTS

Measure the gap between the front and back drawer rails; this should be consistent. Cut the drawer supports to fit this measurement. There are two narrow outer supports and one wide middle one, except for the small top drawers where there are two wide supports with uprights to separate the drawers; note that these uprights can be biscuited and glued in the centre of the supports to make small sub-assemblies.

13 At the same time measure up for the two drawer stiles that go between the small drawers.

14 These are housed exactly as the rails are; if you leave your router table set up these can be quickly machined.

15 Check that all the housings fit (carcass rails not present in this photo).

Keep your best boards for matching colour and grain for the drawer fronts, and find good matching boards for the top.



16 Mark all drawer supports ready for Dominos, one slot for each narrow support and two for the wide ones, using 6mm-thick Dominos. Make a marking jig to ensure consistency, then it won't matter where each component goes when it comes to final assembly. The narrow components will simply butt-glue against the carcass sides. All the carcass components, bar the top itself, have now been cut, jointed and where appropriate made into sub-assemblies. Everything can now be knocked apart and all internal or hard-to-access surfaces sanded prior to assembly. Machine the back panel rebate with a large straight cutter.

DOVETAIL HOUSINGS

17 Place both end panels face down on the bench with the inside faces upwards. Mark up where the drawer rails will be,

across both end panels; this will then allow you to accurately mark out for the housing joints.

18 You need a large 19mm-diameter dovetail router cutter and a big ½in collet router with a 30mm or similar guidebush. Make up a housing jig using the tablesaw to give a precise gap just large enough for the guidebush to slide through.

19 As always, do a trial cut first to get the correct depth for the housing which will be about 7–9mm. The housing slot needs to be either the same as the rail width at the front but deeper at the back to account for the 10mm back panel or, as I did it, the same slot length but with the dovetails on the rail ends cut back by the thickness of the back panel. Machine all slots but note that the top front rail isn't housed as it is too close to the end of the board; this is better biscuited to help hold it in place. Now machine the dovetails on the end of each rail. This is done vertically on the router table using a sub-table surface and a high fence facing to stop the components dropping into the cutter opening. Take your original measured drawer rail length and add the depth of the dovetail housing x 2 to give the finished rail length. Cut all rails exactly to this length bar the top front one, which is a biscuited butt-fit in between. Do some test cuts, machine both rail faces and try fitting in a housing and adjust until it is a good tight fit. Use a fine saw and chisel to round the 'inner' end, keeping the dovetail angle. Tap the rail home then, once satisfied with the fit, machine all rail ends in the same fashion.

20 The finished housing; sanding will remove the fluff.

21 All the housings and Domino joints have been machined.

GLUE-UP

This is more than a little stressful so get everything ready first. You will need plenty of long sash clamps and several long deep-throat clamps to span the carcass width plus a number of shorter sash clamps. PVA glue will give the best working time as it won't start setting too quickly.

First, glue and clamp the carcass rails and bottom shelf assembly in place. Next, glue and fit the front drawer rails then the drawer supports and finally the back drawer rails. Your longest clamps are used to hold the carcass together crosswise, with the shorter ones pulling the drawer support frames together from front to back. You will almost certainly require help and plenty of pads to protect the wood from crushing.

Check the whole assembly is square and all joints closed properly, then carefully remove excess glue using only a slightly damp cloth to avoid stain marks on the oak.

MAKING THE DRAWERS

The drawers are simply tongue and grooved construction and will slide on the drawer supports in the carcass. Measure the openings to ensure you get the drawer box sizes correct. The front and back fit within the sides; add the tongue length x 2 to the length of the internal front and back measurement in each case.

Machine all parts to width and thickness. The width, which will be the height of the drawer, should be a tight fit in the carcass; it will be trimmed later. The bases are oak-veneered ply to be cut to size later. Cut all solid parts to their respective lengths and mark them – sides or front and back – to avoid any confusion.

22 Set up the router table with a 6.4mm groover on an arbor and do test cuts for the groove until you have it exactly right. Machine all grooves including the drawer bottom grooves, leaving the groover at the same height. Now do the tongues; as the groover is not thick enough, use a piece of ply or MDF as a sliding sub-table on one pass to increase the effective cut width. The resultant tongue must be a nice tight fit in the grooves.

23 Assemble a couple of drawers, measure the size of drawer bottom required and

cut out the ply to suit. Sand all drawer components, then glue, assemble and clamp. The drawer fronts need to be carefully sized and 'gapped' to fit in their respective positions in the carcass. Trim each drawer box to fit its particular position and fix on the drawer front when the handles are fitted in place. The handles must be aligned neatly from top to bottom on all drawers, apart of course, for the top middle one. Screw each front onto its respective drawer box from the inside.

24 An assembled drawer box ready to have its front planted on

THE TOP

Loosen the two projecting tongues from the MDF end panels and house them into the top, using either the previous housing jig if it is long enough or making up another one if not. Bear in mind that a 9.5mm straight cutter will be used to make a 10mm or thereabouts slot, so either the slot in the jig needs to be slightly wider or the jig needs to be moved over between cuts. Make sure before you start that the MDF upstands are square to each other and mark their positions accurately onto the underside of the top, then clamp on the jig and machine the slots. Try fitting the top and adjust the widths of the slots a fraction if needed.

25 Now sand the top thoroughly and glue and fit to the top of the carcass using plenty of clamps to pull it down hard onto the carcass top. Lightly bevel the edges with a handplane.

RUBBING STRIPS

Rubbing strips are glued onto the underside of the top. This avoids adding them to the general carcass assembly, but they are necessary to prevent the top drawers from simply hanging down at an angle when the drawers are pulled out.

26 Lastly, sand the entire carcass exterior, apply a clear sanding sealer and wax thoroughly.

Use a fine saw and chisel to round the 'inner' end, keeping the dovetail angle.

TOMORROW'S HEIRLOOMS

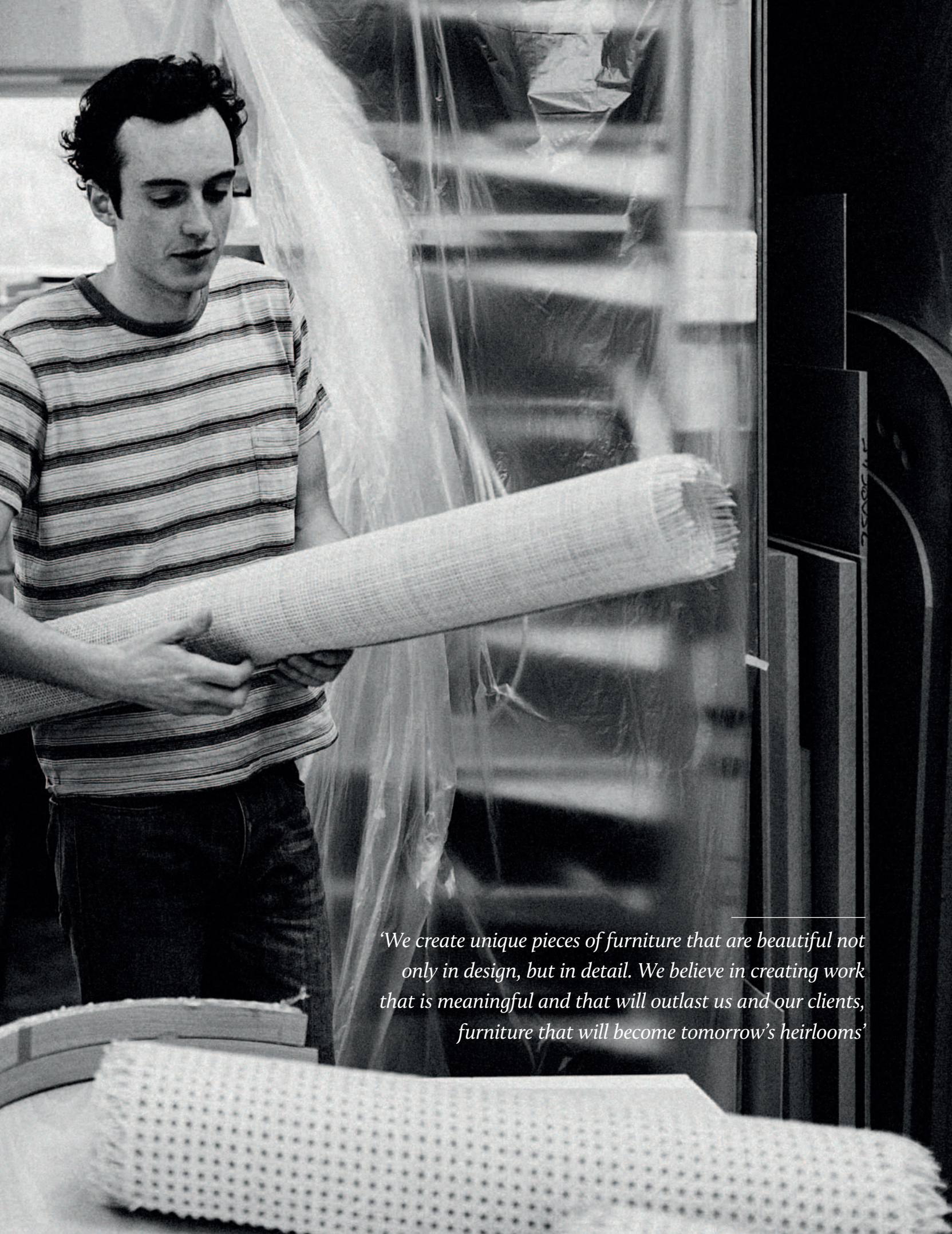
HUSBAND AND WIFE TEAM
CHARLES BYRON AND MARIA GÓMEZ MET AT FURNITURE SCHOOL AND NOW MAKE BEAUTIFUL PIECES TOGETHER IN SOMERSET

'We create unique pieces of furniture that are beautiful not only in design, but in detail. We believe in creating work that is meaningful and that will outlast us and our clients, furniture that will become tomorrow's heirlooms,' says Maria Gómez, one half of the husband-and-wife team behind West Somerset-based Byron & Gómez. The pair met at Williams and Cleal Furniture School in Taunton, Somerset seven years ago, and started a business in the school's incubator space. 'Since then we have made a life in the area and now have our own workshop space just a few minutes away from the school where we first met,' says Maria. 'We did not really think that hard about it, we met through our love for making and thought it would be the right thing to do, we also had very compatible design styles and thought something great could come of combining our skills.'

Charles has always been both creative and practical. 'From the age of eight he was already learning how to use a lathe and using some basic woodworking skills,' Maria says. He completed his first project at that age – a little stool that still lives in his parents' house. Maria grew up in Puerto Rico and remembers wanting to be a woodworker from the age of 13 or 14. She completed a bachelor's degree in architecture before fulfilling her dreams – although she did make her first project, a sculptural chair, during her first year studying. After she graduated Maria took internships with Puerto Rican craftsman René Delgado, before training at woodworking schools in the UK. The pair have nothing but praise for Williams and Cleal Furniture School and its skilled craftsmen and women. 'It's a very hands-on way of learning, you are on the bench 90% of the time during the year-long course,' says Charles.

After securing two bench spaces at the school's incubation workshop, the pair saved up to afford basic power woodworking tools and at the same time developed a small range of furniture to show off their skills and develop new ones. Maria says: 'We allowed ourselves around nine months of non-paid time to develop and produce this body of work, which was a fantastic time to get to know better how we would work together.'





'We create unique pieces of furniture that are beautiful not only in design, but in detail. We believe in creating work that is meaningful and that will outlast us and our clients, furniture that will become tomorrow's heirlooms'

IN THE WORKSHOP

'We are very lucky to have found the workshop we are in at the moment,' says Maria. 'It's a massive room in what used to be a cheese factory. We have beautiful brick floors, high ceilings and large north-facing windows. It's not very well insulated, so in the depths of winter it can be quite cold, but we love it. We also have a small ceramic studio around the corner. The whole building was bought by a woodworker who has plans to turn the space into multiple workshops with a gallery for artists and makers to showcase their work. We have been here for two years now, and I see us here for at least five more years – but time does fly, so it could be much more than that,' she adds.

'We work using a combination of machines, power tools and hand tools. To process the timber we use a sliding tablesaw, planer-thicknesser and bandsaw. Then we move on to using other tools in combination with precise hand work,' says Maria. 'Woodworking is a very time-consuming craft – one could spend months and months if one were to try and process it all by hand, but the reality of having a business means we need to combine our love of hand work with the versatility and precision of technology to make our work within realistic budgets.' The pair have one spindle moulder they are not yet comfortable working with, but they have a few projects coming up that will force them to use it more. 'The spindle moulder can be a terribly dangerous machine if not used correctly, so we just need a bit more experience to break the ice,' Maria says.

Byron & Gómez have a strong focus on sustainable sourcing and only use FSC-certified timbers such as walnut, oak and ash grown in North America and Europe, as well as working with local sawmills to source British felled wood. Although it's expensive, walnut is one of the couple's favourite woods to work with: 'The smell is particularly beautiful, it's soft but strong and it's always such a surprise to see the beauty in the grain,' Maria explains. 'We prefer finishes that breathe and accentuate the natural beauty of the timber, such as waxes, oils, light whitening, fuming with ammonia or ebonising with an iron solution instead of lacquers. There is a beauty to leaving the timber to age with use, and although sometimes lacquers are the right application for a piece, we prefer to use oils,' she adds.

Maria is currently exploring the use of ceramics in her practice. 'It is not to be part of our furniture pieces as such, but I am developing a body of artistic work combining ceramic and timber,' she says. 'Clay is a flexible and forgiving material, you build by adding and in contrast timber is a hard and unforgiving material, you build by removing material. Making furniture is an execution exercise, it's engineering, and working with clay allows for a more intuitive creative process which is what I am excited about at the moment.' One of her favourite pieces to work on has been Helen's Dining Table, which used ceramics and timber, while Charles loved the artistic, freeform approach to the Molecular Desk.



PHOTOGRAPHS YESHEN VENEMA





PHOTOGRAPH BYRON & GÓMEZ

ON COMMISSION

The business is currently made up of around half and half commission and speculative work, but the pair hope to lean more towards the speculative going forward. 'We benefit a lot from both types of work,' says Maria. 'Commissions help us create a meaningful connection with our clients, designing and making something truly unique and specific for them that has a lot of value for us, as we really enjoy the fact that our labour will be enjoyed by someone we know. It's also very interesting to work on products, as that requires a lot of planning and investment to make it successful, and we also enjoy this part of our business. It's truly enjoyable to not do the same thing all the time.'

When working with clients the approach depends on how customers want to work and how much involvement they want to have, and the commissioning process can take six to 12 months from the initial phone call to a finished project, depending on how complex the piece is. 'If we are designing a product we usually go back and forth for months, make prototypes and plan to make small batches. We always design together, although usually the seed of an idea comes from one of us or the other, then we refine it together,' says Maria.

The most challenging project they have worked on was the Kensington Dressing Room – 'our first and last fitted job,' says Maria. 'Although it was a wonderful commission as we absolutely love the design, we just did not have the right equipment for it. It helped us realise we much prefer to focus on freestanding pieces.' The pair are currently working on a small black and fumed cane cabinet, and after that will move on to making a large order of their Kensington Dressing Room doors and one Clara Sideboard. Maria says: 'That will take us to the end of the year. Then we are in conversation with clients about dining tables, cabinets, coffee tables and bedside tables. We are also allowing some time for us to develop our own artistic pieces: I am working on my ceramics and Charles will be making a series of console tables.'

LOOKING FORWARD

When the Covid-19 pandemic and lockdowns hit, everything went very quiet for Byron & Gómez – and then suddenly there was a surge in interest in bespoke furniture, and they have been very busy for the past two years. 'People are investing more in their homes and the quality of furniture they want to own. The pandemic gave us an opportunity to move our workshop as well. So far it's been positive for our business, and may it continue the same,' says Maria. She hopes they will grow the business by employing one or two more makers in the future, and to build a larger collection of work as small batches, as well as producing artistic speculative pieces for galleries and exhibitions.

The pair bought a house three years ago and always have projects going on there. They got married last year and now have a little puppy called Pumba who keeps them busy when they're not in the studio. They also love gardening and travelling, and find that much of their inspiration comes from outside the workshop. 'Travelling is a great way to look back into craft, architecture and design in general, as do being in nature and looking at how things around us are constructed,' says Maria. 'The best ideas come to us when we are away from work, being away from home and the studio is a huge way to find inspiration. Away from the to-do lists, we always come back full of ambition and lovely ideas.'

So how does it all work, living together and working together? 'We get along very well,' says Maria. 'We are good friends as well, so this is a great thing for our business. We create well together, we are always thinking about work but in a good positive way, although sometimes one of us needs to say: Stop, no more shop talk! once we get home. It's always good to disconnect as well.'

byronandgomez.co.uk
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LINEN PRESS CUPBOARD

LOUISE BIGGS GETS TO THE BOTTOM
OF A STICKING DRAWER PROBLEM

A customer contacted me to discuss his linen press. Initially he did not know what the problem was, only that he could not withdraw the two large drawers in the bottom half of the cupboard. With some help to extract the drawers he brought the bottom half of the cupboard to my workshop. He wanted the job done so as not to devalue the piece but so that he could continue to use it. It was made from mahogany with oak drawer liners and mahogany veneered fronts. The dustboards were pine. Old, reclaimed

pine would be used to replace the dustboards and animal/hide glue would be used throughout the restoration.

The sales label on the cupboard reads 'A fine George III mahogany press cupboard by Gillow of Lancaster' and bears the maker's stamp. Gillow's of Lancaster was in business throughout the 18th and 19th centuries, making and retailing high-quality furniture. In 1903 it merged with Waring of Liverpool, forming the well-known Waring & Gillow firm of furniture makers.



PHOTOGRAPHS BY LOUISE BIGGS

THE RESTORATION

1 All well constructed linen press cupboards have dustboards between the drawers. These prevent dust and dirt from the runners and clothing dropping into the drawers below. It was evident that the dustboards, having twisted and warped over the years, were causing the problem. They had curled downwards at the back and prevented the backs of the drawers from being pushed in or pulled out.

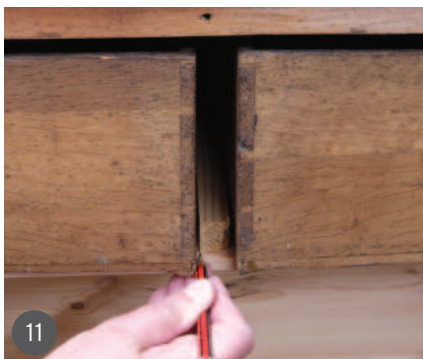
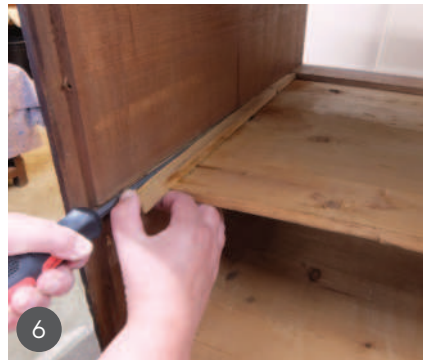
2 The back panel was a frame and panel construction 20mm thick and was

securely held in place with iron nails. After a detailed inspection inside and out I could find no evidence that the panel was glued, so with some trepidation I set about removing the back using a stout piece of timber. Starting in a corner and following along each edge I gradually knocked the back out a short section at a time.

3 As expected, the back had suffered some damage, mainly around the joint areas at the corners. Had it been glued as well the damage would have been more severe. The iron nails for the most part

came away with the back, which was put safely to one side. Any broken nails were removed from the carcass. The broken joints were glued and clamped until dry.

4 The dustboards were made up of three sections. As this was a named and expensive piece, I wanted to leave as much of the original as possible. So I decided to remove the back two sections as these were the most warped, and replace them with old pine. The front section, attached to the drawer rails, was thankfully still straight.



5 Having removed the central drawer guide for the two small drawers, the next stage was to remove the side battens, which acted as the 'kickers' for the drawers and fixed the dustboards into the grooves. A small amount of methylated spirits was run along the edges to soften the animal/hide glue. Each batten was loosened further using a Japanese cat's paw to break the remaining glue line.

6 A stout screwdriver was then eased in behind the battens to release them out of the groove. Once separated, any remaining debris was removed from the grooves using a chisel.

7 The back two sections of each dustboard needed to be released along the

glue line. Having again used methylated spirits to soften the glue, a wide chisel and the cat's paw were carefully eased into the glue line and, with some bending up and down of the dustboards, the glue lines were slowly parted.

8 Sections of old pine were selected and cut into the required wide and narrow sections. Before cutting to length the sections were planed down to the required thickness. The edges of the boards were then planed to form a tight joint with the remaining existing dustboards.

9 In order to glue up each dustboard and keep them flat, two sections of MDF were clamped top and bottom to the upper side of the dustboards with paper in between.

Battens of timber were clamped to bring the sections of dustboards tight to the MDF panels then sash clamps were used from front to back to pull the joints tight. Protective blocks were used as required to prevent any damage from the cramps.

10 New drawer kicker battens were also prepared to size using old pine. They were planed to create a slight taper along their length to ensure a tight fit in the grooves while keeping them flat against the dustboards. When they were all prepared they were glued into place.

11 The two small drawers were placed in the carcass and the new central drawer guide, which had been prepared to size with the kicker battens, was pushed into



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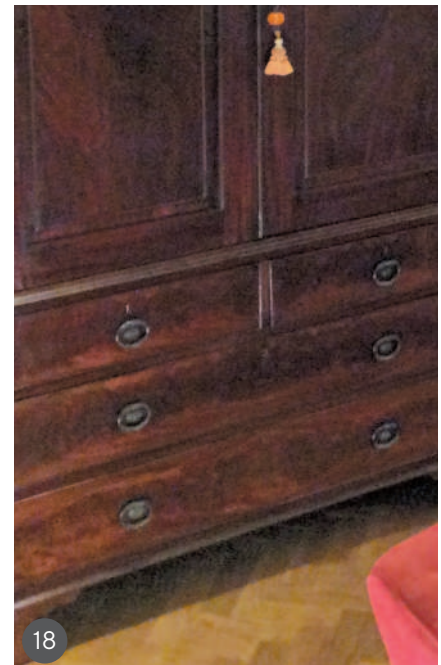
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place. The front end was lined up with the central drawer divider and the back end was centred between the two drawers and the position marked.

12 The central drawer guide was glued into place and clamped at the back end. Clamps would not reach the position of the front end due to the width of the centre drawer division so, in order to put pressure on the guide until the glue set, a timber wedge was formed and tapped into place until tight.

13 Before the back was refitted the new dustboards were stained to a similar colour. As the work is internal, I left a colour difference to show that the dustboards were replacements. The back

frame was replaced. Where the iron nails had broken I sourced replacements from those removed from other broken pieces of furniture.

14 The only other damage was to one corner of the bottom drawer where the cockbeading edge moulding had been damaged, the side piece was missing and the bottom edge was a broken previous repair.

15 Long tapering joints were cut on the existing beading using a knife so as not to damage the drawer side and the rebate was cleaned of old glue. Pieces of old mahogany were then prepared to thickness and cut and planed to fit the two areas. Before gluing into position the

pieces were cut to width and mitre joints cut for the corner.

16 With the glue dry the replacement sections were planed flush with the drawer side and bottom edge using a block plane. The front edges were planed flush to the existing beading. By planing across the corner both replacement sections were kept in line without creating a dip at the mitred corner.

17 The new sections of cockbeading were stained and polished to match, completing the restoration.

18 The bottom part of the linen press was now ready to be reunited with the upper section.

UNDER THE HAMMER

FOLK FURNITURE

BONHAMS' RECENT SALE OF FOLK AND NAÏVE ART FEATURED SEVERAL FINE EXAMPLES OF VERNACULAR FURNITURE. WE TAKE A LOOK AT SOME OF THE TOP-SELLING LOTS HERE



▲ **LOT 228 • £5,737**

An oak jointed and panelled tester bed, made in the early 17th century in south-west England.



▲ **LOT 1 • £3,825**

A large ash and elm turner's armchair, made in the late 17th century in northern England, possibly in the Lake District. All parts of the chair were formed on a lathe, apart from the seat. The back spindles and rails are supported by the single rear leg.

▼ **LOT 278 • £1,275**

An elm wing chair made in the late 19th or early 20th century in a 17th-century style.





▲ **LOT 15 • £1,020**

A small carved oak coffer, made in the 16th century.



▲ **LOT 45 • £4,845**

An early 17th-century oak court cupboard. It is decorated with scrolled lunette and flowerhead carved frieze above a canted cupboard inlaid with ebony and holly urns of flowers.

► **LOT 204 • £1,657**

A joined oak and spindle-filled mural food cupboard, made ca. 1680 in North Wales.



▼ **LOT 232 • £637**

A 17th-century oak panel back armchair, with a serpentine top rail above a floral carved diamond panelled back and solid seat.



▼ **LOT 14 • £4,080**

An oak trestle-end table, made in the late 16th or early 17th century. This table is believed to have originally come from Glastonbury Abbey.



A photograph of a modern wooden coffee table on a sandy beach. The table has a dark, thick, live-edge wooden top and two light-colored wooden cylindrical legs. The background shows the ocean and a clear sky at sunset or sunrise. The text is overlaid on the left side of the image.

‘For inspiration, I am obsessed with the concept of beauty. My eyes are constantly on the look-out and see it everywhere. An ocean wave, the starry sky, human or animal forms, the natural world. It all provides great content to feed into the forms for my furniture.’

WOYKING IT

TWENTY YEARS AGO *FURNITURE & CABINETMAKING* PROFILED AN UP-AND-COMING FURNITURE MAKER FROM FALMOUTH IN CORNWALL. HERE WE CATCH UP WITH **SCOTT WOYKA** AGAIN AND FIND OUT WHAT HE'S BEEN UP TO

When we last met Scott Woyka, he was working with a friend from a tiny workshop – or ‘Woykshop’ – in Falmouth, Cornwall, barely bigger than a single garage, taking on any woodwork projects they could find to make an income and build their business. ‘We didn’t make anything particularly special in those early days,’ Scott recalls. ‘But occasionally I’d carve out some time to make a speculative piece and exhibit it locally in one of the Cornwall Crafts Association galleries. My first appearance at Celebrating Craftsmanship in 1998 was a key milestone in attracting commissions for work in my own style.’

Scott was brought up with wood in a five-generation family business, where he worked in his school holidays and for a while after his degree, but the business was sold to timber supplier Timbmet after the 1993 recession. ‘I always loved messing around with wood, making

small projects and even a wooden windsurf board,’ he says, ‘but I was first inspired to make furniture after visiting an exhibition of the late Tim Stead.’

In fact Scott was originally interested in traditional boatbuilding and enrolled on a course at the Falmouth Marine School. But, he says, ‘I soon realised there was little creativity in the field, so I moved across to a furniture-making course. I didn’t really attend lectures, just worked on my making skills in the workshops and did lots of reading – including *F&C*, of course.’ His first project at college was a deck chair made from laminated sycamore with cherry, and his first successful speculative piece was a blanket chest called Aglaia’s Chest. ‘I ended up making and selling another five of those after exhibiting it in Cheltenham at the Celebration of Craftsmanship, as it was called then,’ he says.

After spending seven years in his first, tiny Woykshop, Scott moved to a

redundant riverside warehouse, inside which he built a larger workshop unit. ‘It has been a beautiful place to work with a lovely creative community, although there was a 10-year battle to save it from development, which was achieved because it is an important wharf with good all-tide access and in an important strategic site for the economy,’ he says. ‘It is now owned by a heavy marine contracting company, which is investing in its refurbishment.’

Scott’s set-up is fairly traditional, with the usual machines, including a planer-thicknesser, saw, spindle, bandsaw, pillar drill, small thickness sander, WoodRat, power tools and hand tools. ‘I have a woodstore, full of all the lovely boards I have collected,’ Scott adds. He says he loves all woods, but tends to stick with British ones: ‘I don’t see any reason to use anything else,’ he says, ‘though if I’m honest I have strayed occasionally when I’m asked.’



'Like people, they all have their own personalities, strengths and weaknesses. Sometimes I'll make a piece in just one wood to celebrate its virtues. More often, I will pair two together and find the combination will have a synergy and can evoke wonderful feelings. Occasionally, I will combine a cosmopolitan mix, a veritable party of woods, special for its diversity and harmony. So I work mostly with ash, cherry, sycamore, elm, London Plane and some other rarer species. I do love oak too, but tend to steer away from it as it is so ubiquitous.' He has also worked with other materials including gold, silver, tin, brass, British leather, glass and stone. 'Combining the different materials has a synergy, and brings out the best in the wood,' he says. His favourite finishes are hardwax oils – 'they are natural and the modern blends have great performance and feel fantastic,' he explains.

In terms of tools, Scott uses the full spectrum of machines and hand tools. 'If I could keep just a couple it would be the bandsaw for its versatility and a spokeshave, because they are such a

pleasure to use,' he says. He admits he has a slight aversion to digital making and CNC work. 'Though I can see the positives, and I do use CNC machining in some projects, I am very mindful of what can be lost in the process,' he says.

FINDING BEAUTY EVERYWHERE

'I have always been moved by beautifully hand-crafted objects, marvelling at the creativity, dexterity and skill of makers,' says Scott. 'It's the way these objects make me feel that I would like to pass on to others. The serenity, the joy, the moments of pleasure that crafted objects can give is what I want to give to my clients.' His favourite furniture period is Art Nouveau, where he loves the sinuous curves and the 'extraordinary effort' makers would go to. 'For inspiration, I am obsessed with the concept of beauty,' he says. 'My eyes are constantly on the look-out and see it everywhere. An ocean wave, the starry sky, human or animal forms, the natural world. It all provides great content to feed into the forms for my furniture.'

His favourite project to have worked on was the interior furniture for the new Cove Macmillan Support Centre in Truro. 'It was a lovely brief, and I got to put my interest in boatbuilding to good use as we steam-bent the planks for all the pieces. The bookshelf screen was the size of a small yacht, and we had to come up with a new technique for the extreme bends on some of the planks. The whole centre was designed to engender wellbeing, and the furniture was a key part of that. It's also very satisfying to be working on a public project, as it will be appreciated by so many.'

His most challenging project was the bilateral meeting tables he designed for the 2021 G7 summit in Cornwall. Scott recalls: 'I put forward an ambitious pitch, which involved much more work than the budget offered, so I had a couple of months to make 10 sculptural pieces that I'd never made before. An added challenge was having to use what Cornish wood was available at short notice. I had some good wood, but it would have been nice to go shopping and select some stuff that would make the pieces really sing.'



PHOTOGRAPHS BOB BERRY, HUGH HASTINGS



'Another element of the brief was that the tables should be eye-catching, but not so much that they would distract from the leaders. There were some very long days in the Woykshop, punctuated by visits from the media from all over the world. It was a fabulous opportunity and a great honour, but some more time would have been nice.'

CLIENTS AND SPECULATION

Scott works mainly on commission now, and says he enjoys both this and the occasional speculative piece. 'As many makers know, a speculative piece can be a great advert, but might hang around for a little while before finding its owner,' he explains. 'With a stronger portfolio now, I attract the sort of work that I enjoy doing and clients are happier to go with my ideas and guidance. Saying that, I'm currently having fun with some small speculative projects where I'm enjoying the freedom of spontaneous making.'

He adds: 'There's nothing nicer than seeing one's own ideas come to life, unconstrained by a brief, and it can be an opportunity to create original work. On the other hand, I enjoy working with people and putting their wishes into reality, finding out what makes them tick. It's another interesting part of the design puzzle. Ultimately, I like to make what people need, and seeing their pleasure in the outcomes.'

The way Scott works on his designs varies from client to client and project to project. 'Sometimes you get an instant

vision of what is going to work and hit the ground running, and other times it can be a bit of a tennis game,' he says. 'Some clients can be very clear about what they want, particularly if they are used to commissioning. Others can be less sure, so I guide them carefully through each aspect of the design. And then I often have a completely open brief with clients who like what I do and just want me to produce something in my own way. For me it is about a meeting of minds, and so one has to find a way to tune into the client's frequency.'

'After establishing a brief, I normally have two design stages, with simple sketches followed by developed drawings. On larger projects there might be many more stages of development, refinement, lots of meetings and so on. I present designs in a number of ways. Traditional drawing, sometimes CAD, but I prefer perspective drawings. I'm not especially good at them, but they are the best way to present and feel so much more personal than a CAD drawing or render.'

He is currently working on a wine store in English oak for some longstanding clients. 'It's essentially a large chest of drawers for about 300 bottles, and has been an interesting exercise in optimising storage,' says Scott. 'In the pipeline I have a large dining table to make, and I'm drawing up some proposals for some tables for a party barn in Cheshire.'

Going forward he hopes to make some more meaningful sculptural pieces with stronger narratives.

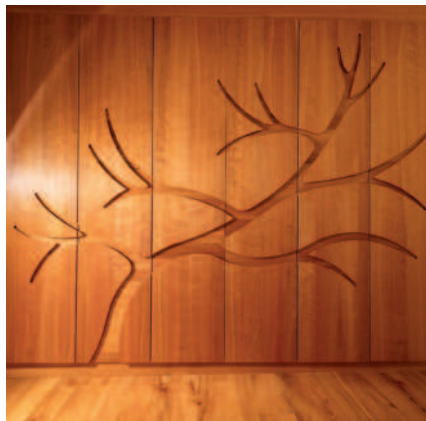
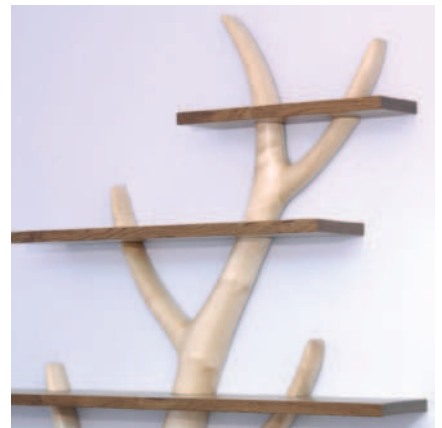
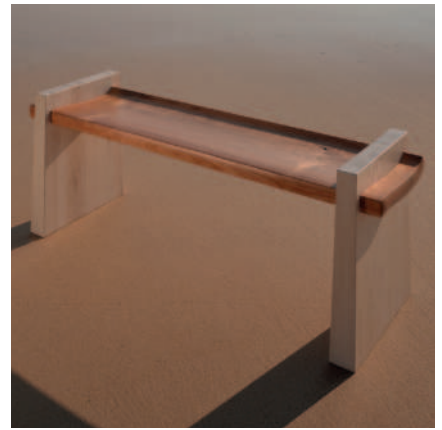
DECADES OF CHANGES

So what is different now from when we last met up with Scott two decades ago? 'The price gap between production and bespoke work continues to increase,' he says. 'Obviously digital manufacturing has brought some huge changes to the market. I used to design on the basis that we were making things that machines couldn't – or at least couldn't do cost-effectively. Now that gap has closed too, but it means that people are increasingly drawn to work that is obviously handcrafted.' When the Covid-19 pandemic and lockdown hit in 2020 Scott was initially terrified and his work quickly dried up. 'But fortuitously a respected local boatbuilder asked me to produce all the joinery for one of their boats, as they had had to lay off all the staff. That kept me going all summer, and then things returned to normal,' he recalls.

When he's not working Scott loves spending time with his family and cooking. 'My favourite exercise is a run or swim before or after work, and I was a fan of wild swimming when it was just called swimming. I was obsessed with windsurfing before my furniture career, but still do it occasionally. And I love live music,' he says. So what's the secret to building an enduring furniture business? 'No idea,' Scott admits. 'Maybe being content to work hard for a modest income, loving what you are doing and sharing the passion with your clients.'

scottwoyka.co.uk
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'The serenity, the joy, the moments of pleasure that crafted objects can give is what I want to give my clients.'



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DESIGNING AND MAKING CUSTOM FURNITURE

IN THE FIRST OF A SERIES OF ARTICLES, **DENNIS ZONGKER**
BEGINS WORK ON A HALLWAY TABLE

This is the beginning of a series of articles covering the design, glue-up, joinery, carving, bending, inlays and marquetry of a custom hallway table. Later, I will also describe how I made the accompanying side chairs.





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DESIGN CONSIDERATIONS

How do I start a new design? Actually, it can be a pretty simple process. It all starts with an idea, usually the customer's. Most customers have some idea of what they want. If not, your experience can help them to design the perfect piece for them.

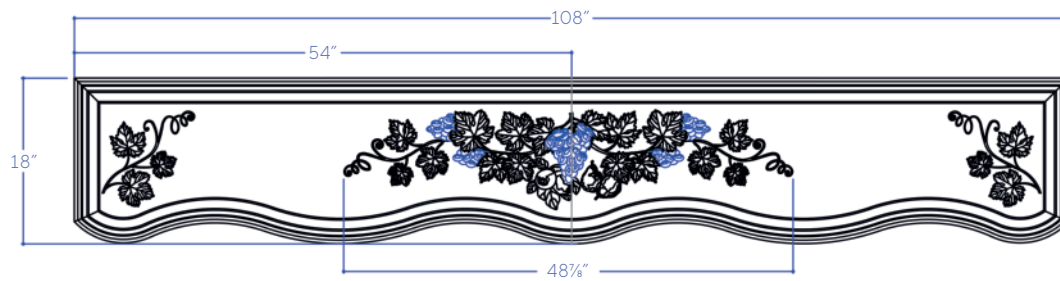
Basically, you are going to make a piece of furniture that will be exactly what they want. It might not have anything to do with your own personal design style unless they request that you incorporate your style into the piece. This customer is very familiar with my work and wanted both carving and marquetry added to the design.

For this hallway table and two side chairs I felt a little blessed because I have worked with this customer in the past, and he is from my hometown of Omaha, Nebraska. The piece he wanted designed and made would go into a penthouse in New York City on the 78th floor. So yes, I was a little excited to have been flown out in a private jet to see the décor of the rooms and the size of the space where the furniture would be placed.

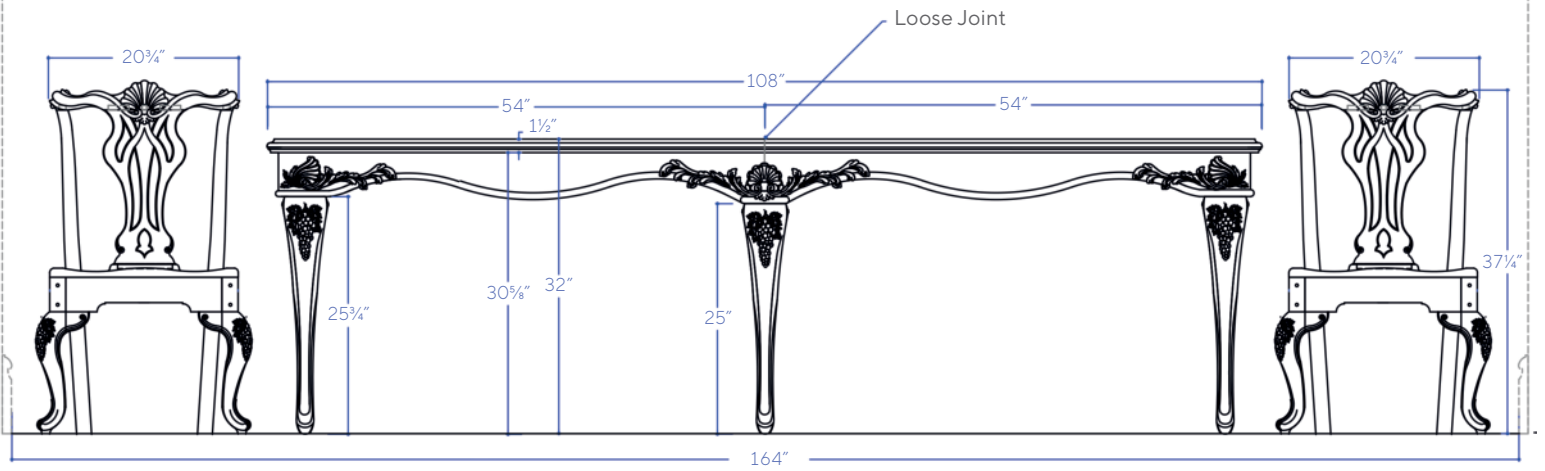
This would be situated in the main hallway with tall ceilings with traditional mouldings. The large room in front of the hallway has all different styles of antique furniture. All this information helps when designing a piece to fit in the décor of what already is existing in the room.

There were many restrictions to incorporate into the design, such as the table could only be 18in (460mm) deep, in order for people to be able to still have room to walk down the hallway. The customer wanted a centre table with a side chair on both sides of the table. The size of the hallway opening is 164in (4,165mm) so the table would have to be about 108in (2,743mm) long. I knew that to get this piece up in the lift it would have to break down into two pieces, having a loose joint in the middle.

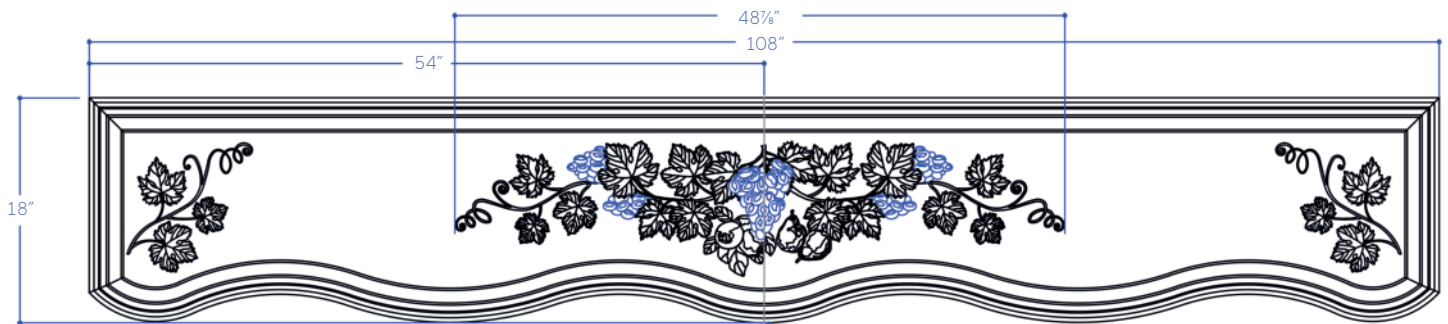
The design of the hall table was up to me. My vision was to have a fruit theme with grapes and leaves as the main design element. This would fit nicely with a strong traditional style adding radiuses and curves to the tops, aprons and front legs.



Plan View of Marquetry Top - No Scale

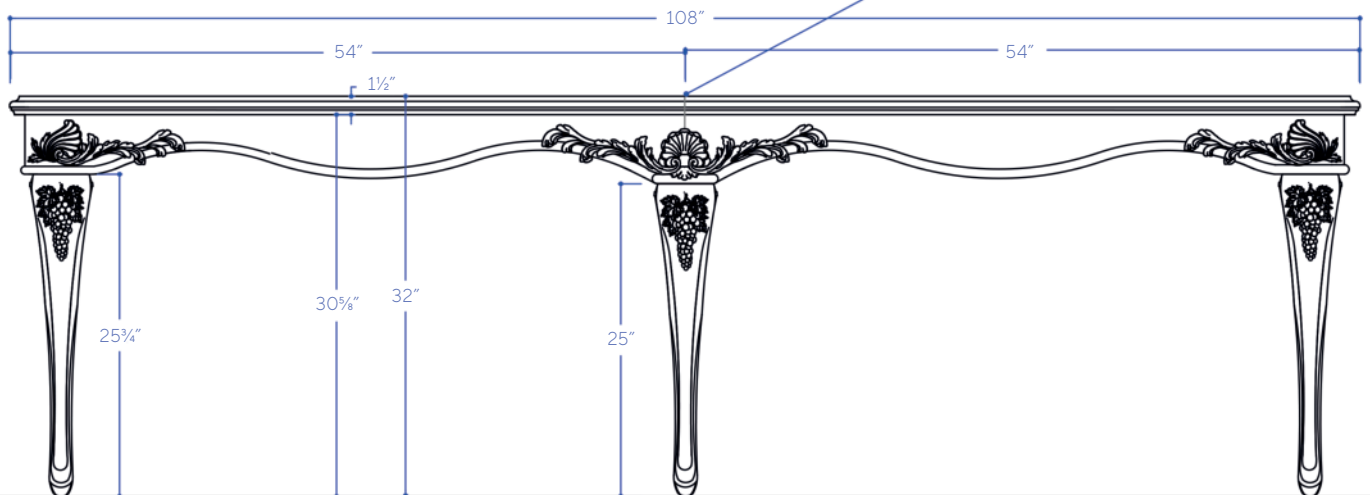


Front Elevation of One Hallway Table and Two Matching Chairs - No Scale

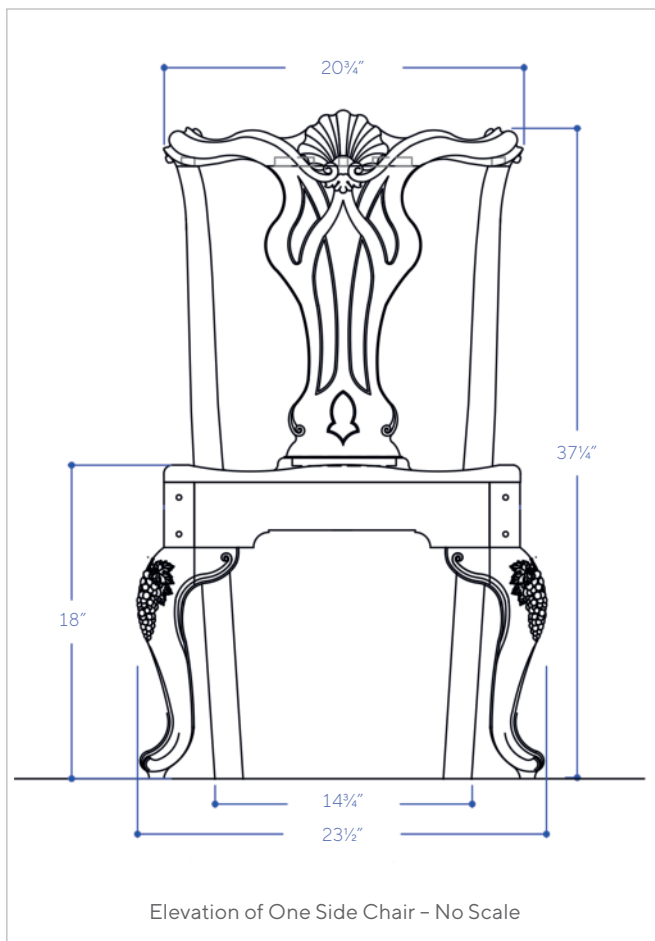


Plan View of Marquetry Top - No Scale

Loose Joint



Front Elevation of One Hallway Table - No Scale



The design needed to be a fruit melody with more of the grape theme, then adding a few apples, leaves and pears to bring a little colour to the design.

COMPUTER AIDED DESIGN

Using this project as an example, I'll explain my design process in AutoCAD. I began by drawing a rectangle of the exact size of the hallway table centred between the walls. Then I drew a side view and top view of the table. Once all my sizes were correct, I started to add the shapes and details; this can take a few attempts to get right before I see my vision realised on screen. Once I figured out my design, I drew in the carving details for the legs and aprons; I will do this until they fit proportionately. For the apron, I designed a main shell in the centre with flowing acanthus leaves and side shells on both ends.

Then I moved onto designing the top marquetry. The design needed to be a fruit melody with more of the grape theme, then adding a few apples, leaves and pears to bring a little colour to the design.

My next step was to design the two side chairs. For this style of table, the Thomas Chippendale type of chairs would be a perfect match. The chairs will have the same decorative elements as the table, with a centre shell with scrolls running from the shell to the corners of the upper back legs. The cabriole chair legs will use the same grapes and leaf design, just scaled down to fit the corner of the legs. Adding similar carving details to the hallway table and two side chairs will make the three pieces a matching set.

CLAY MODELLING

Once my drawings were approved by the customer, I went straight to clay to make models of the carved elements. I made a corner mock-up of the table so I could see how the shape of the legs and aprons, top and carvings will blend together and make any changes before I move to working in wood.

By using oil clay, I don't have to worry about the clay ever drying up. This gives me the time needed to find the shape I am looking for. Sometimes the design stage can take a few days, depending on my vision and transforming the correct shape around armatures. The finished clay model of the table legs and apron can help me figure out the glue-ups and my carving layout.

1 I made the armature smaller than the finished size of the leg, in order to mould the clay design with room for adjusting the shape of the leg. I drilled holes in the armature, then screwed in the screws at different lengths for holding the oil clay in place without falling or sagging.

2 I applied the mass of the clay around the entire leg, then used a heat gun to soften up the oil clay to make it easier to move around and adjust the design. Then I smoothed the clay by simply using my hands.





3 I applied extra clay to where the carvings will be placed then I outlined the design with a drawing template of the carving. With clay tools it is easy to press and move the clay around to mould the design of the grapes and leaves. This is the best time to change the design if needed. I ended up adding extra grapes to my design, which is a nice thing to figure out before carving into wood.

4 Once I had the leg design all worked out, I started on the apron. The bottom edge of the apron will have a half-circle hand-carved trim that will following the double radius profile of the apron. I printed to scale the half-shell scrolled acanthus leaf and pinned it to the apron. This showed me where to place the screwheads for the clay to hold to the smooth area of the apron.



5 I repeated the same steps used on the end carvings for the centre shell and acanthus leaves. By making this mock-up of the table and adding the clay I am positive the design will work out on the American black walnut for the final piece. This gives me the exact sizes and answers all my questions on how this hallway table design will work out.

THE NEXT STAGES

I hope you will follow along as the next several articles will show the processes I have taken to achieve the finished result of a custom hallway table and two side chairs.

You can also follow my work on Instagram: [@denniszongker](https://www.instagram.com/denniszongker)



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DANISH-STYLE FOOTSTOOL

GRAHAM DUGAN SHARES HIS STEP-BY-STEP
GUIDE TO TURNING AND WEAVING THIS STOOL

It was in the early 1970s that I found myself visiting Denmark for a couple of months, to work at Aarhus University. When at a colleague's home there, I was taken by how clean and simple the timber furniture looked. The finishes helped show it at its most natural, almost as if there was no finish, but it was beautifully smooth to the touch. Mainly the finish was oil or soap, sometimes with an added pigment to enhance the grain and gently lighten or darken the wood.

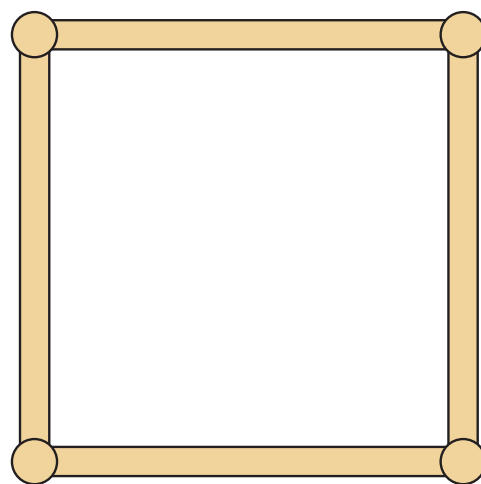
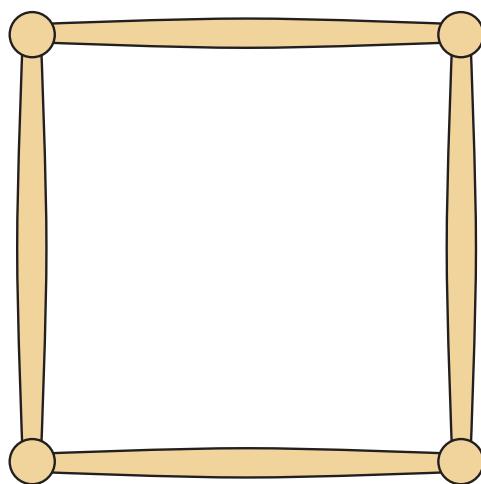
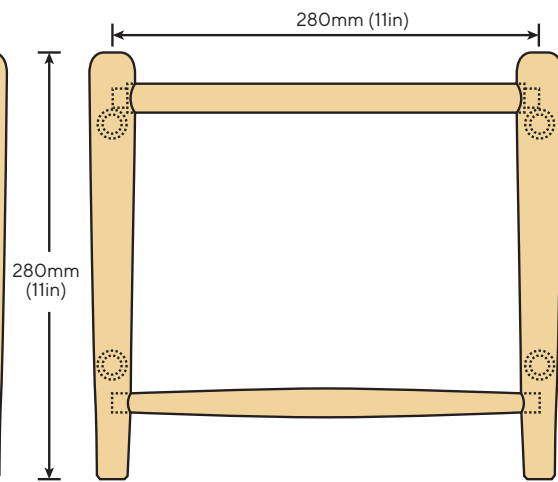
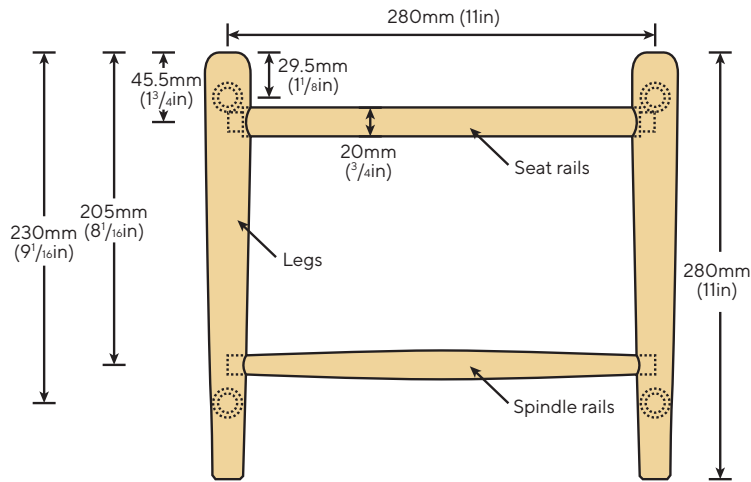
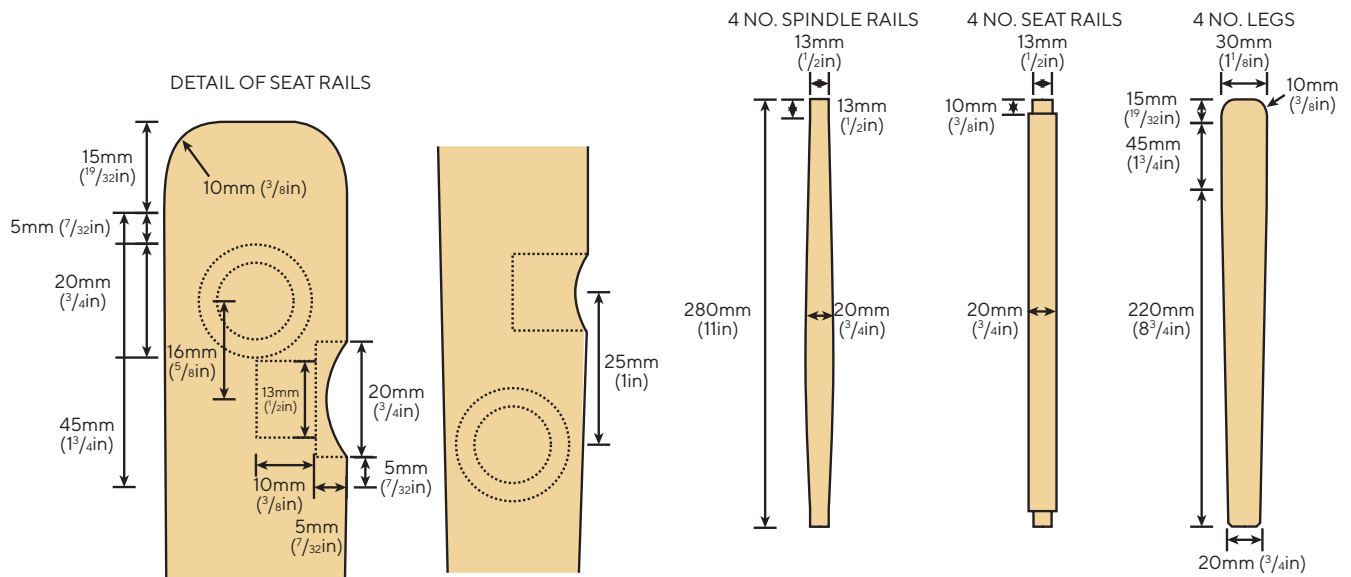
I saw that the woven seats on the chairs were made from a paper cord, three-ply, just twisted together to give a cord 3.5mm thick. They claimed it had a 60-year life with normal usage.

Although I made a few pieces of furniture in those early years, I spent my working life designing, first on drawing boards then computers, while seeing Danish design influence spread to other countries.

When I retired a few years ago I decided to return to making pieces of furniture, first designing and drawing, then

generating 3D renders on the computer to get a feel for how it would look.

This footstool is the outcome of one of those ventures trying to recreate the simplicity and delicacy of those Danish pieces. It looks very simple, but requires great care in the making. The frame is made with slender turned pieces of ash and the seat weave uses natural Danish cord. The weave, while not a traditional Danish weave, gives an interesting pattern and is woven both sides to give a stronger and more attractive finish.



YOU WILL NEED

Tools:

- Personal and respiratory protection equipment
- Lathe with indexing capability
- 32mm spindle roughing gouge
- 20mm spindle roughing gouge
- 13mm spindle gouge
- 5mm diamond parting tool
- Digital Vernier calliper
- Sprung callipers
- Tenon saw
- Power drill
- Precision boring system
- 13mm Forstner bit with shank size to fit precision boring system
- 20mm Forstner bit with shank size to fit precision boring system
- 2 x band clamps
- Soft-faced hammer
- 4oz cross pein hammer
- Telephone cable staple gun
- Workshop-made heddle (see drawing)
- Workshop-made weaving tamper (see drawing)
- Workshop-made spacing stick (see drawing)
- 150mm soft-nose metal spring clamp

Materials:

For the footstool:

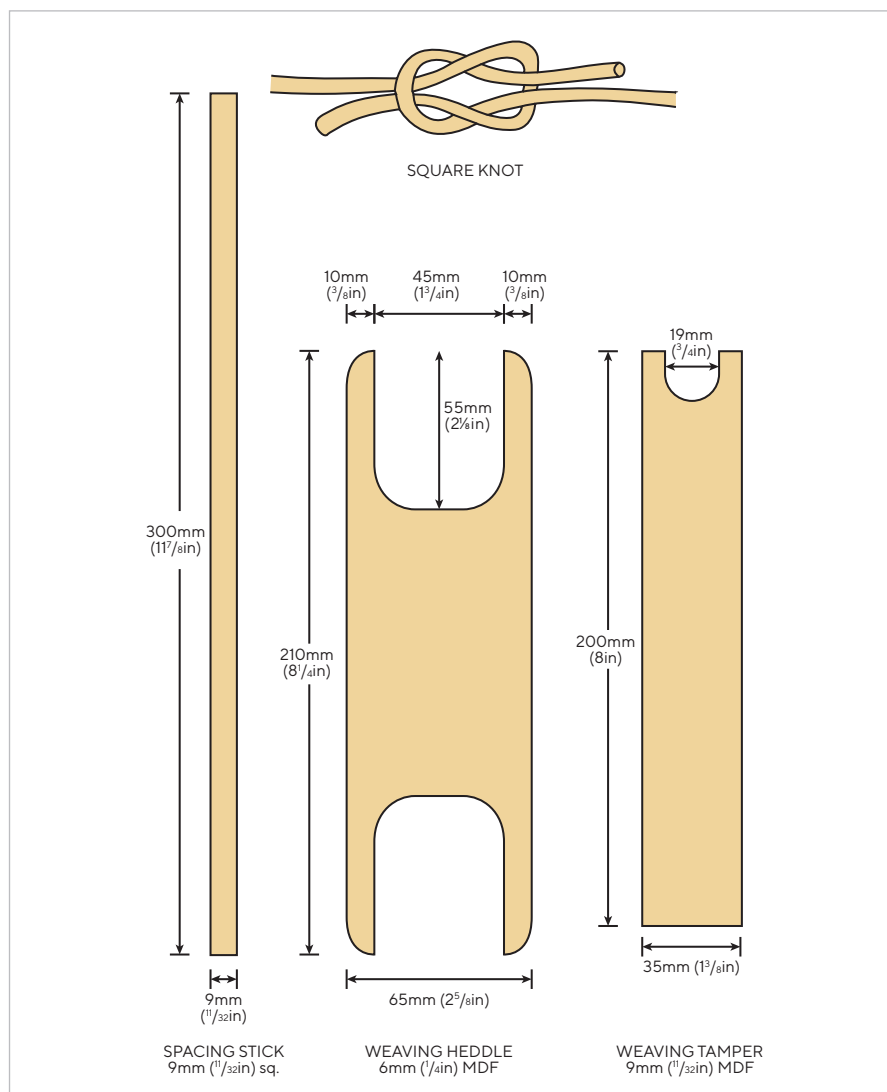
- 4 x ash spindles 38mm square, 330mm long
- 8 x ash spindles 25mm square, 330mm long
- Abrasives down to 400 grit
- Urea-formaldehyde synthetic resin adhesive
- White pigmented Danish oil, for furniture, manufactured in Denmark
- 13mm paintbrush
- White nylon scouring pad
- Lint-free white cotton cloths
- White kitchen paper towels

For the seat weave:

- 3.5mm unlaced Danish paper cord, about 80–90m
- Telephone cable staples or 12mm tacks
- Extra-strong thread, colour matched to Danish paper cord
- Cyanoacrylate adhesive

THE WEAVING TECHNIQUE

Before we get started on making the footstool, I will explain the techniques used for making the woven seat.



The weaving is divided into two parts. The warp (the front to back cords), and the weft (the side to side cords). The first stage of weaving the warp should be done as one continuous operation with no knots.

Place your footstool on the workbench with a soft cloth under it to protect it. You will have seen that the seat rails are positioned at different heights. The front and back rails are the lowest, with the side rails higher. This is so that the completed weave will end up slightly dished, which makes the footstool more comfortable. Choose one side to be the front.

A word of warning: sometimes when weaving the cord it can start to untwist slightly. So check that the twist is maintained as you weave.

Use spring clamps to hold the cord in tension on the rails when you are away from it.

CALCULATING THE WEAVE (A)

The seat rails are 250mm long. This means that using 3.5mm-thick Danish cord will result in 71 wraps. It needs to be an odd number so that you end with a wrap around the seat rail the same as you began. To help keep on target as you weave, put a pencil mark midway along the seat rail front and back. As your weave progresses, check occasionally that you are on target to achieve 71 wraps. Use the weaving tamper tool with gentle taps of the small hammer to compress the weave to stay on target. You are aiming to achieve 36 wraps around the rail and 35 wraps running front to back on top.

DECIDING ON THE WEAVE PATTERN (B)

You will see from the finished piece that the 35 warp cords running across the top

of the seat have been gathered together by the weft weave to make a pattern. I've made the pattern symmetrical about the centreline of the footstool.

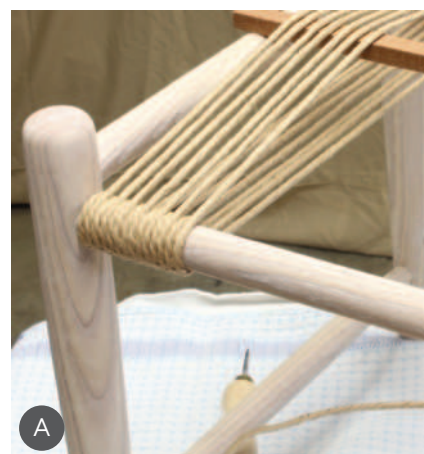
I decided to weave it as you can see, using a starting arrangement for the top warp cords of over 4, under 6, over 4, under 7, over 4, under 6, over 4, giving a total of the 35 cords running across the top of the seat. Various other patterns are possible, but if you want a symmetrical pattern they always need to add up to the odd number 35.

Using a thin stick, slide under and over the 35 warp cords in the pattern chosen. This makes it easier to identify.

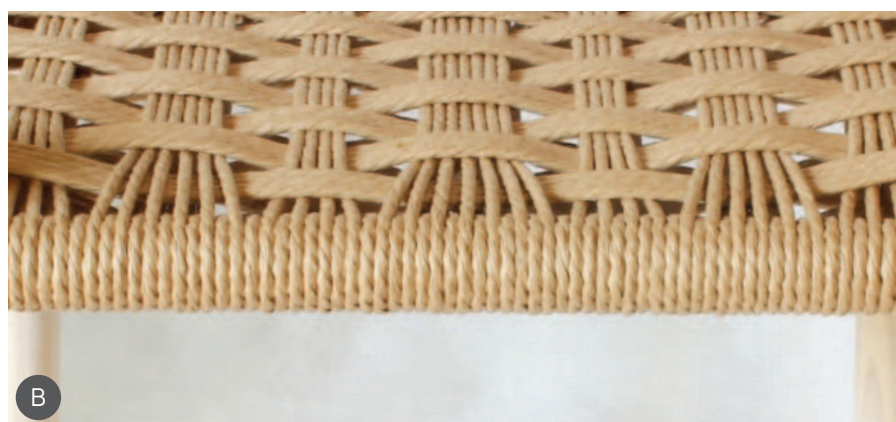
In this weave I have done the weave on both the top warps and those underneath. It gives a tidier look to the underside and a stronger seat.

KNOTTING IN ADDITIONAL CORD (C)

When you need to add more cord, use a square knot on the underside and choose a position so it will be hidden under the warp weave (front to back cords). Make the knot, tighten it, easing it into the correct position, and trim the ends and use a few drops of cyanoacrylate on the knot. Then weave into place under the warp cords.



Weaving the warp to achieve 71 wraps at the end of the warp weave

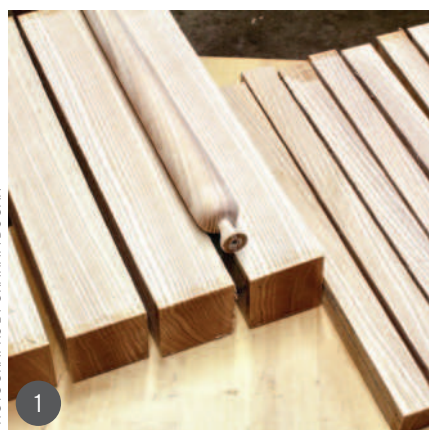


Weave pattern of warp cords



Positioning the knot

PHOTOGRAPHS BY GRAHAM DUGAN

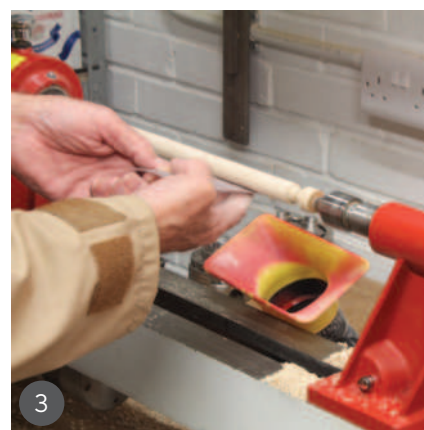


TURNING THE FOOTSTOOL SEAT RAILS

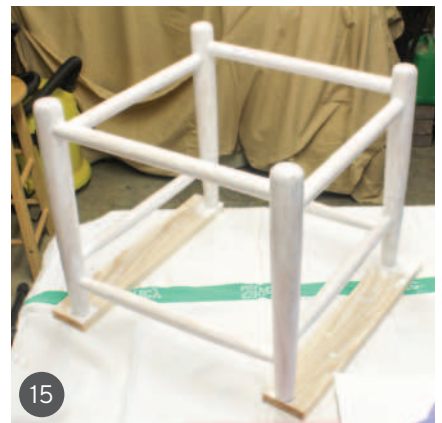
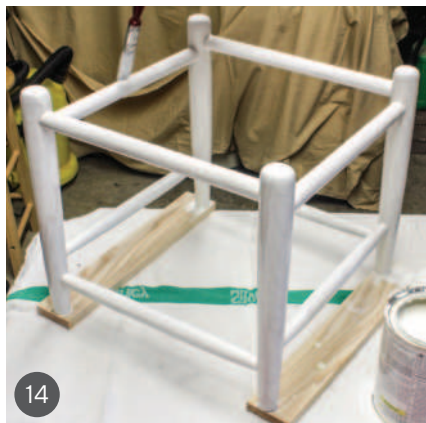
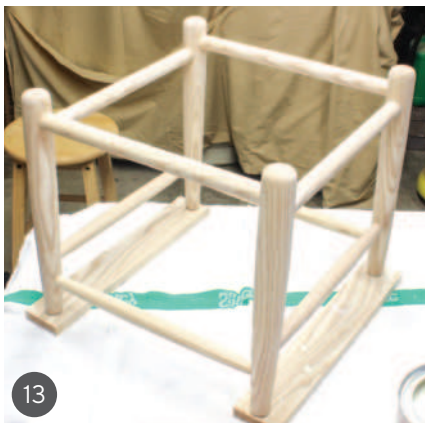
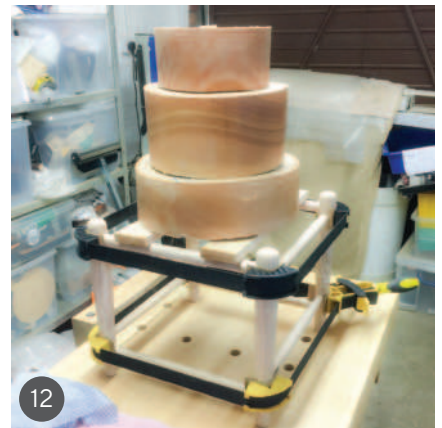
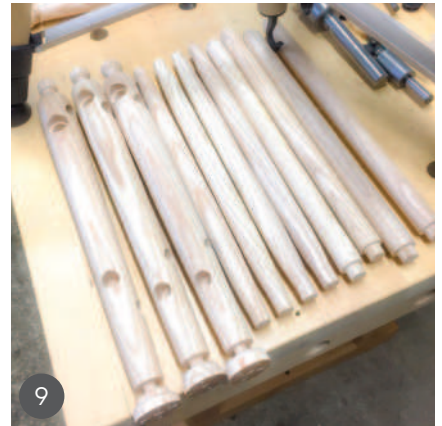
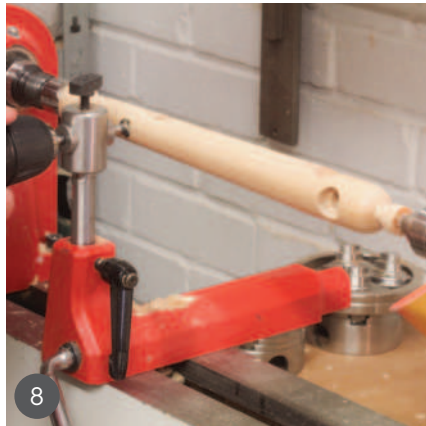
1 The ash you use should be straight and close grained. Cut the pieces to size. The seat rails and spindle rails are 25mm square; the legs are 38mm square. All spindles are 330mm long to allow for a finished length.



2 Mount the spindle between centres and turn down to a cylinder, slightly larger than 20mm to allow for sanding. Stop and mark out the overall length of rail, 280mm, and mark the circular tenon positions at each end, which will need to be 13mm diameter and 10mm long.



3 Use the parting tool to part down to within 3mm of the centre at each end of the 280mm seat rail. Reduce the 10mm-long tenons either end to 13mm diameter. Sand the 20mm spindle through the grits to 400 and re-check the finished diameter is 20mm and the tenons 13mm. Repeat steps 2–3 to give the four seat rails.



The weave, while not a traditional Danish weave, gives an interesting pattern and is woven both sides to give a stronger and more attractive finish.

TURNING THE FOOTSTOOL SPINDLE RAILS

4 Turn the spindle rails down to cylinders, just over the 20mm to allow for sanding. Mark the overall length of rail, 280mm, mark the centre of the spindle and circular tenon positions at each end, these will be 13mm diameter and 12mm long.

5 Use the parting tool to part down to within 3mm of the centre at each end of the 280mm spindle rail. Then form the 13mm diameter tenons at the ends. From the centre mark, turn a gentle curve in both directions, down to the tenons. Sand through the grits to 400 and re-check the finished dimension is 20mm at centre and the tenons 13mm. Repeat steps 4–5 to give the four spindle rails.

TURNING THE FOOTSTOOL LEGS

6 Turn the legs down to cylinders, allowing for sanding to achieve the 30mm finished size. Stop and mark the overall length of leg, 280mm, and use the parting tool to form the overall length of 280mm. Part down to within 3mm of the centre. Mark for the curved top section 15mm below the top and mark the end of the parallel section at 45mm below that.

7 Form the bead at the top of the leg. Then, from the lower mark of the parallel section, taper the leg towards the base, from 30mm down to 20mm. Sand the leg through the grits to 400 and re-check the finished dimensions.

8 Engage the indexing pawl. Fit the precision boring tool. Mark the locations for the blind circular mortises, four to

each leg, using the indexer to turn the leg 90°. Remember, for the mortises, two legs are identical and two handed. Begin with the 20mm Forstner bit, drill 5mm in then switch to the 13mm Forstner bit and drill the seat rail mortises 10mm further and the spindle rail mortises 12mm. Check depths. Repeat steps 6–8 to give the four legs.

9 Once all the pieces are turned (I don't part them on the lathe), trim the ends using a fine tenon saw and sand to finish. Pay particular attention to the top of the legs where they are rounded over to ensure a smooth finish. Check that each group of four are equal in length. Adjust as necessary. The seat rails and spindle rails ideally should be a millimetre or so less than the drawing to give room in the blind circular mortises for the adhesive.

10 Begin a dry assembly of the parts to check for fit. Ease if necessary. Aim to get the sides of the footstool to sit correctly, with the legs at 280mm centres. Check the sides are square and flat.

11 Lay the dry-assembled sides of the footstool on the bench and proceed to fit the cross seat rails and spindle rails. Then lift the second side and fit it on to the cross rails. I gently use a soft-faced hammer to ensure all joints are well seated.

12 Once you are happy with the dry assembly, carefully take it apart, keeping the pieces laid out so you know which goes where. Using the synthetic resin adhesive, glue and assemble the footstool, making sure any adhesive that squeezes out is removed with a

damp cloth. Fit the band clamps, using cardboard between the clamps and the legs to protect the wood, check for square across the diagonals and place some weights on the assembly. Leave for 12 hours or overnight.

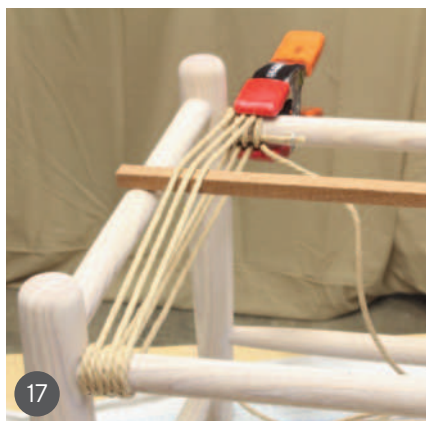
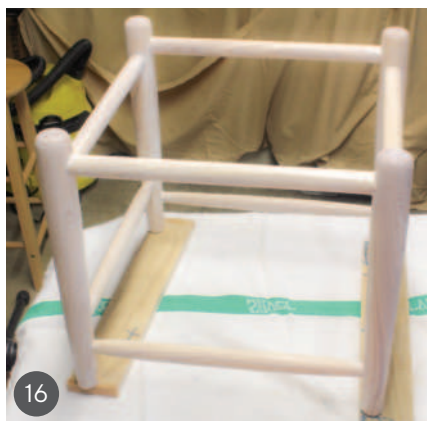
13 Once released from the clamps, check it's still square and true. Check for wobble, then rotate the footstool through 90° and check again. If there is still a slight wobble, establish which leg is slightly out and gently use a sander on the base of the leg to minimise the wobble.

APPLYING THE OIL FINISH

14 Open the white-pigmented oil and stir well before use. Apply a generous coat of the oil to the ash footstool using a 12mm brush and work well into the joints. Leave to stand for about 30 minutes at a room temperature of 20°C. Lower temperatures will require a longer time for the oil to be absorbed by the wood. Note: oil-soaked cloths can be a fire hazard and need to be disposed of appropriately.

15 With the oil still wet, gently abrade the wood surface in the direction of the grain using an ultra-fine white scouring pad to remove any nibs and work the pigmented oil into the grain.

16 Using lint-free white cotton cloths, wipe the wood in the direction of the grain to remove all surplus oil and set aside at room temperature to cure and harden. Steps 14 and 15 can be repeated if an even paler effect is wanted, but I find usually one application is enough. Leave the footstool to fully cure and harden then buff with a piece of paper kitchen towel to give a silky smooth finish.



THE WARP

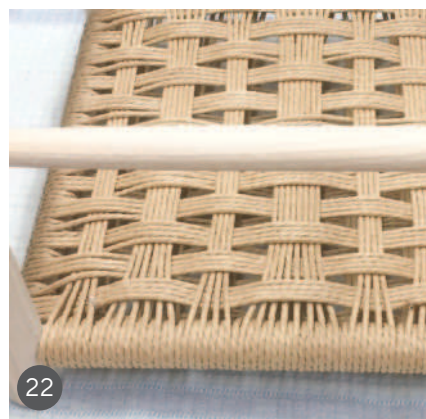
17 Wind 36m of cord on to the heddle. Hold the cord over the back seat rail on the left-hand side and secure the cord to the inside of the back seat rail using the cable stapler or tacks. The last staple/tack should ensure the cord lines up just inside the left-hand corner leg. Put the spacing stick in place.

* Wind the cord back over and under the back rail. Bring across the underside of the seat, under the front rail, then wind round the front rail. Pull taut. Bring the cord over the front rail and across the top, over the spacing stick, then over and under the back rail. Continue the cord round the back rail one turn and then bring forward under, the same as you started.*

Repeat the section between * ... * until reaching the right-hand side of the stool. Towards the end of the warp weave the heddle won't go through, so unwrap the remaining cord from the heddle and continue to finish the warp weave.

18 You now have 71 wraps, starting and ending the same. On the last wrap of the warp weave, the cord passes over the front rail, under the right-hand side rail, back up over the right-hand side rail ready to begin the weft weave. Remove the spacing stick.

19 With the remaining cord you should get into the weft weave before having to knot in another length of cord. Weave across from right to left through the warp strands in the pattern described. Maintain some tension on the cord at the left-hand side rail and bring this cord to the front as much as possible.



20 Turn the footstool over and weave back. Weave the bottom cords the same pattern as the top. There is an extra warp cord on the underside – include this in the centre group. Continue this pattern until you have four cords on top, at the left side rail. Wind twice around that rail, turn the footstool over and weave across in the same pattern to complete the fourth row under. Turn the footstool back up, wind twice around the right side rail and bring the cord to the top.

21 For the next four cords, reverse the

design, under 4, over 6, etc., winding twice around the rails between each group of four cords. Check the wraps along the side rails as you are aiming to get 70 cords in total along the sides in the pattern 4, 2, 4, 2 etc., ending with a 4, and use the tamper when necessary.

22 Continue this pattern until the back of the footstool is reached. The last cord should run on the underside, be woven in and secured to the warp cords with extra strong thread and a drop of cyanoacrylate glue.

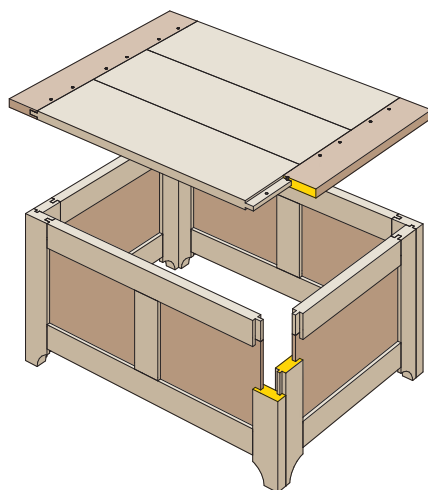


FRAME AND PANEL JOINT BOX

TOYOHISA SUGITA DEMONSTRATES HIS METHOD FOR MAKING
A FRAME AND PANEL JOINT USING A VERTICAL RIPPING GUIDE

Frame and panel joint boxes make convenient use of the grooves made for fitting panels (or mitred inset panels) into the stile and rail framing. This style of box is also more economical as it is made with plywood panels and frames, rather than solid panelling.

Here, I will discuss the main structure and reinforcement points. A vertical ripping guide is used for cutting the 'tenons' (tongues in this case) that fit into the grooves. The overall structure is completed by first making the four frames – front, back, left and right – and then assembling them.



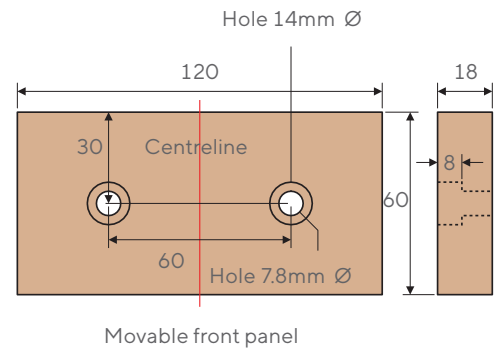
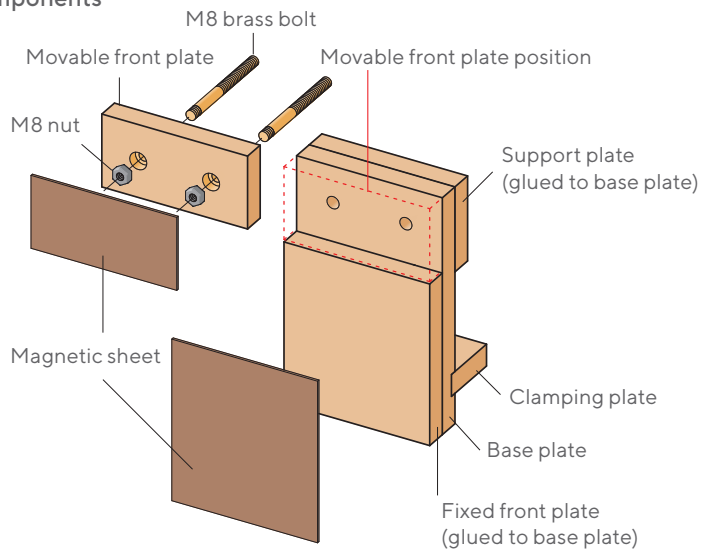
The frames are joined together in a frame and panel joint. Gaps are made between the frames, which are later corrected with a planer

PHOTOGRAPHS BY TOYOHISA SUGITA

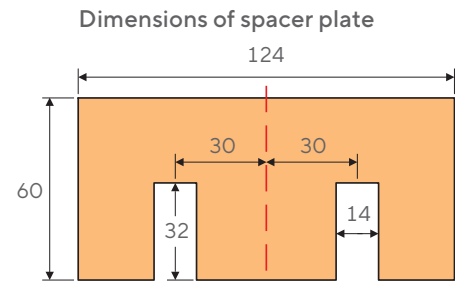
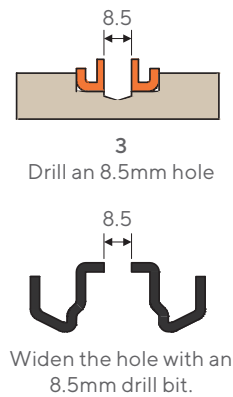
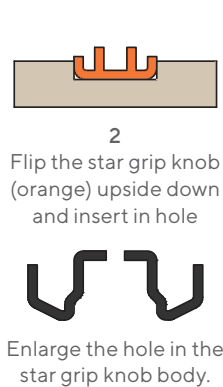
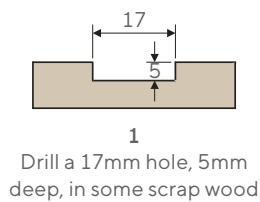
NEW-TYPE RIPPING GUIDE: 3-DIMENSIONAL VIEW

Unit: mm
t: thickness
Ø: diameter

Components

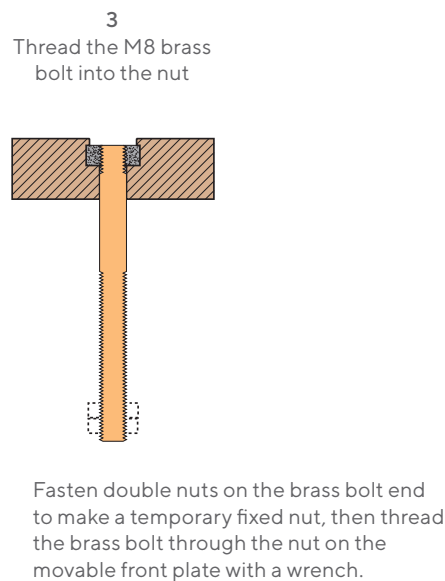
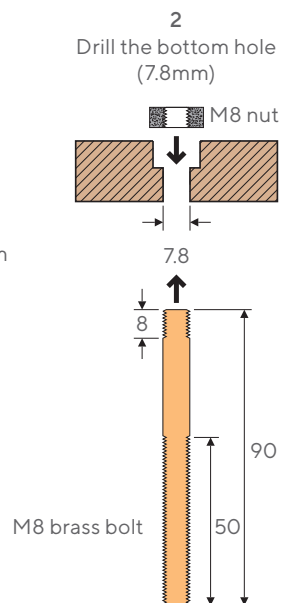
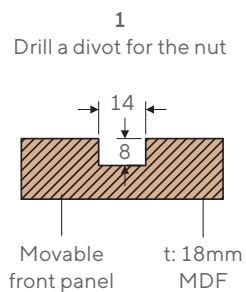


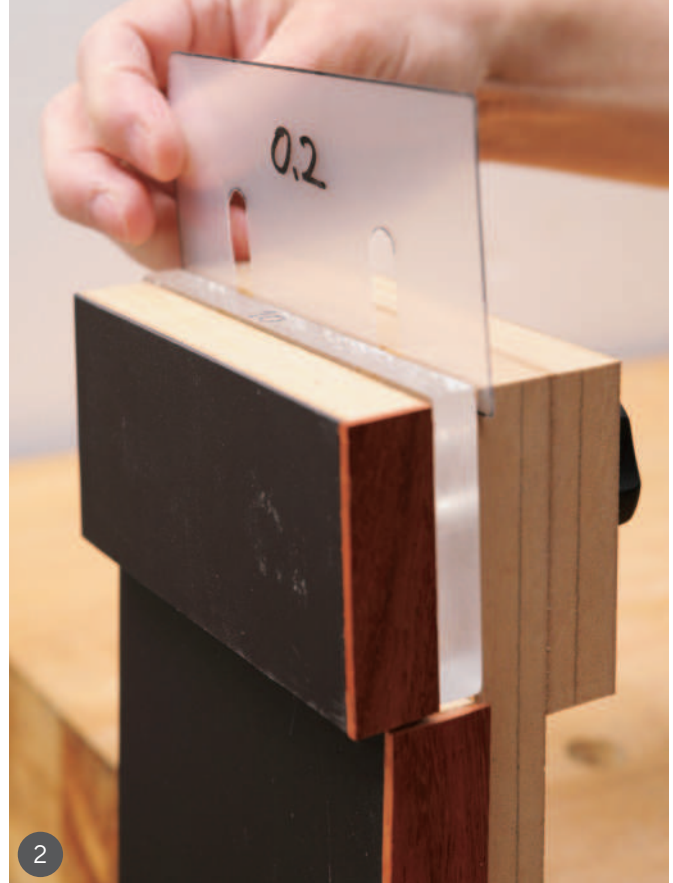
Modifications for star grip knob



This is a dimensional drawing of the spacer plate. This plate is used when cutting out the spacer with a trim router or router. Use a 12mm flush trim bit with a bearing. MDF or plywood with a thickness of about 9–12mm is best.

Modifications for star grip knob





VERTICAL RIPPING GUIDE

1 This type of guide uses spacers, ranging from 0.1mm to 10mm in thickness, to set the exact position for making precise cuts.

2 As an example, when creating a mortise and tenon joint, mortises can first be drilled and then this guide can be used to make a tenon of the appropriate thickness. The diagrams show how the guide is assembled.

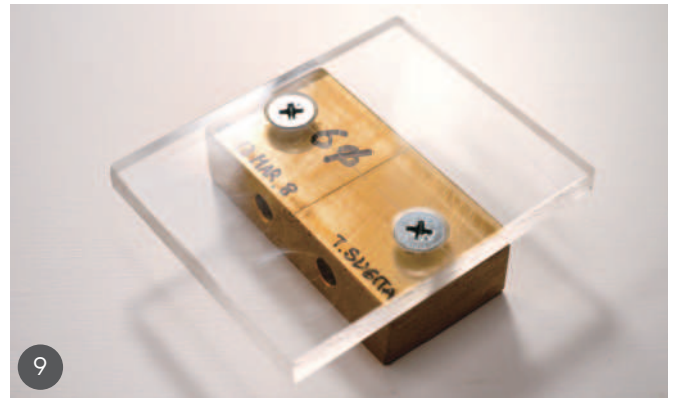
3 Spacer plates cut from acrylic sheets.

4 A mortise and tenon joint made using the ripping guide.

MAKING THE FRAME AND PANEL JOINT BOX

5 Long pieces are grooved before cutting out the individual members. The grooves don't have to be in the exact centre. After grooving, cut to the required length.





6 The 'tenons' on both ends are cut with the vertical ripping guide. These are not proper tenons, but more like end tongues. The tongues should be cut out slightly thicker than necessary. Their depth is the same as the groove depth.

7 Use a planer to thin the tongues until they fit perfectly.

FRAME AND PANEL JOINT REINFORCING

8 One of the weaknesses of frame and panel joints is that the amount of material between the groove and tongue is limited. Reinforcing with dowels is easy and effective.

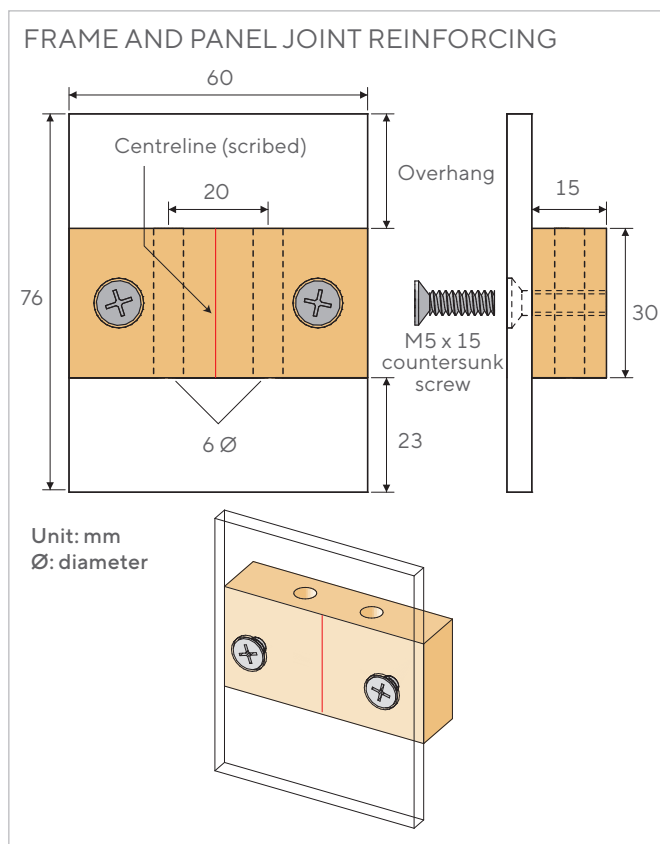
9 This is a custom dowel hole jig.

10 Mark the joint with a pencil line, as shown.

11 Drill dowel holes in both end grain and wood edge, without turning the dowel hole jig around. If you don't make adjustments, the holes will be shallower than the grooves and tongues.

12 That being said, make sure to adjust the depth of your drill and make the holes as deep as possible.

13 When using this joint to make side panels for large storage boxes or cabinets, the joint can be reinforced with actual tenons. In this case, it is common to process the groove width according to the panel thickness and drill mortises that are the same size as the groove width. Grooves are cut with a groove planer, and holes are drilled with the dowel hole jig mounted on a drill press. I assumed 9mm plywood panels would be used here, so I have used 9mm for both the groove planer blade width and the drill bit thickness.

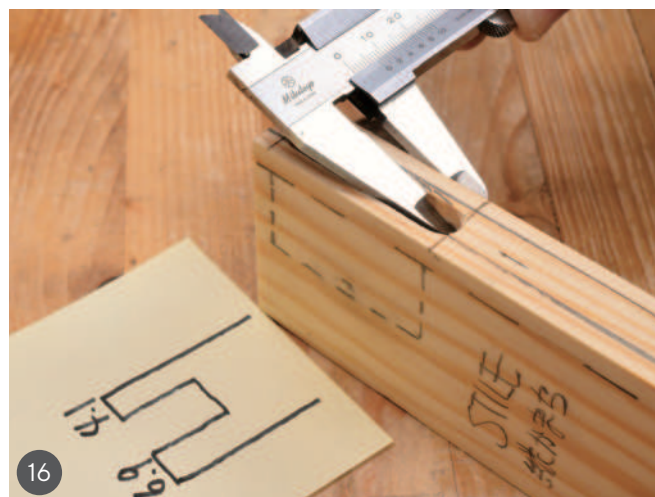


When actually producing boxes or cabinets, just change the blade and bit sizes to match your target panel thickness.

14 Find and mark the position of the mortise hole. Here, there are small blocks attached to both ends of the holes with double-sided tape. By simply placing the drill bit here, the position of the holes at both ends can be accurately determined.

15 First, drill holes at both ends. Then, drill the 'stepping stone' holes. Connect the holes. Finally, press the material firmly against the fence and move it from side to side to flatten the walls.

16 Mortise holes aren't centred in the pieces, so you will need to note the distance of each tenon from the edge. This distance will be the spaces thickness inserted into the vertical ripping guide.







*If you can see the area marked with an O,
insert a saw blade spacer*

17 Install a 9mm blade into the groove planer. Let the blade protrude about 10mm, as highlighted here.

18 Insert the 9mm blade into the mortise hole made with a 9mm drill bit. It should fit perfectly without any gaps.

19 Attach the groove planer, with the fence in the shown position, and place it against the wood. The distance from the fence to the groove is now exactly the same as the tenon hole in the fence. This set is complete.

20 Return the groove planer back to its original state and start grooving.

21 All materials are now grooved and mortised.

TENON PROCESSING

22 Insert a spacer of the same thickness as the target groove wall into the vertical ripping guide and rip vertically. My rule is: 'If you can see the area marked with an O, insert a saw blade spacer'.

23 Make 5mm cuts at both ends of the tenon.

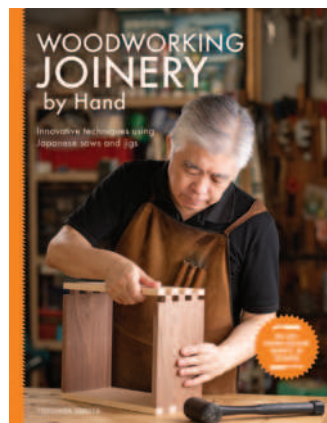
24 Use the cross-cut guide to cut off unwanted parts at the proper tenon length.

25 Leave the convex bulge on top of the piece so that the groove will be hidden when assembled.

26 This completes most of the processing.

27 Flip the piece over and chamfer the bottom corners of the tenon holes with a box cutter.

28 Tenon joint reinforcement is complete.



This is an edited extract from *Woodworking Joinery by Hand* by Toyohisa Sugita, published by GMC Publications, RRP £25, available online and from all good bookshops



A DOUBLE DOVETAIL WITH A TWIST

ALEX REYNAUD OF UNDER THE WATER DESIGN
INTRODUCES AN UNUSUAL JOINT

Double dovetails are fun, visually appealing and a unique way to show off your joinery skills. My little twist to this joint is revealed by looking closely at the grain orientation, the width of the primary tail and the depth of the tails.

Typically, double dovetails are made by cutting the tails and then inserting another set of tails into them of a different species, maintaining continuous face grain orientation. After they are glued together, you trim off the excess to leave a proportionate

outline, cut new tails and then proceed with marking and cutting your pins. This leaves a continuous outline between the joint.

To make this look, I cut the first tails one-eighth of an inch deeper and wider, then mark, cut and insert the pins like a traditional dovetail with buckeye burl. The next step is to trim off all the excess to leave behind just the pin shape of buckeye burl. The final step is to cut new tails and pins as normal. The result is a unique look and a great conversation starter.



MASTERS OF WOOD

200W Orbital Palm Sander 1/4 Sheet

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