FURNITURE & CABINETMAKING

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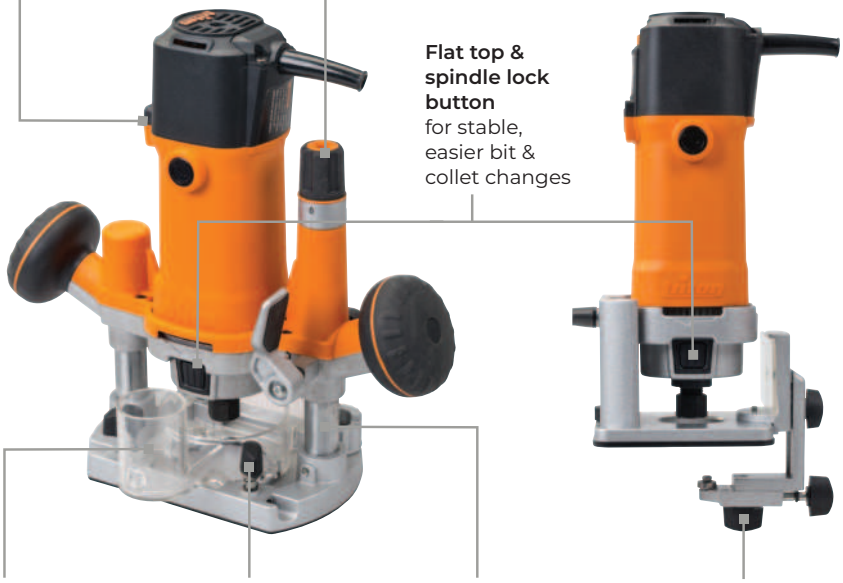

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3YR GUARANTEE

WELCOME

Every furniture maker balances a rich heritage and history with individual creativity and innovation. Whether it's an intricate rococo wall carving, the clean lines of mid-century pieces or even a unique take on a mass-produced item, both elements feature in every chair, table, box and cabinet.

In this issue we have plenty of pieces to inspire you with different stylistic traits. Steve Bisco carves a Chippendale console bracket, Michael Huntley restores a worm-ridden card table and Mitch Peacock introduces draw boring to build a 16th century-style frame and panel box. Israel Martin has adapted one of his own earlier designs to avoid making the same piece twice, Kevin Ley builds a sycamore linen box with a woven, fumed oak panel and Germán Peraire has taken inspiration from a mid-century mirror he spotted online to create his own, improved version.

Our profiles this month include three younger makers who are just starting out, yet each of them is influenced by furniture heritage. California-based Alex Reynaud of Under the Water Design was mentored by his wife's grandfather, a professionally trained cabinetmaker of Italian descent. In Suffolk, Brendan Worsley was thrilled to be invited to work with the UK's crafts advocacy body Heritage Crafts on some oak medallion boxes, and in south London Rob Prentice of Plane & Able brings Japanese training and joinery to his furniture making and architectural work.

Whether your work leans more towards the historical or you're keen to invent something that's never been seen before, we hope you'll find plenty of inspiration in this packed issue!

Beautiful furniture gives us something to live up to. All designed objects are propaganda for a way of life.

ALAIN DE BOTTON

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F&C ISSUE 308

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COVER IMAGE Rob Prentice of Plane & Able

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.

MAPLE CHEST OF DRAWERS

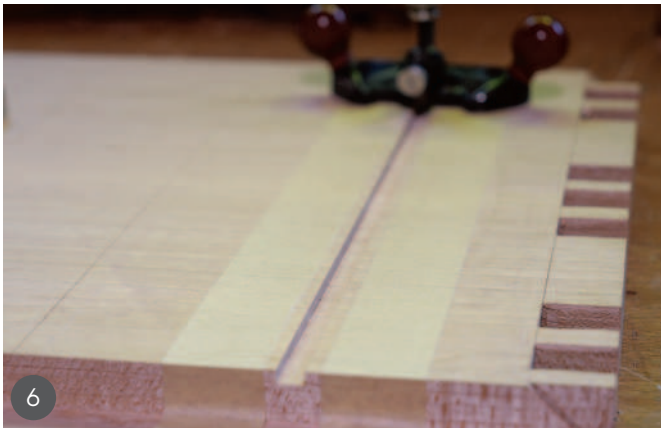
ISRAEL MARTIN ADAPTS A PREVIOUS DESIGN TO MAKE A CHEST OF DRAWERS WITH VENEERED FRONTS AND TWO SIDE DRAWERS

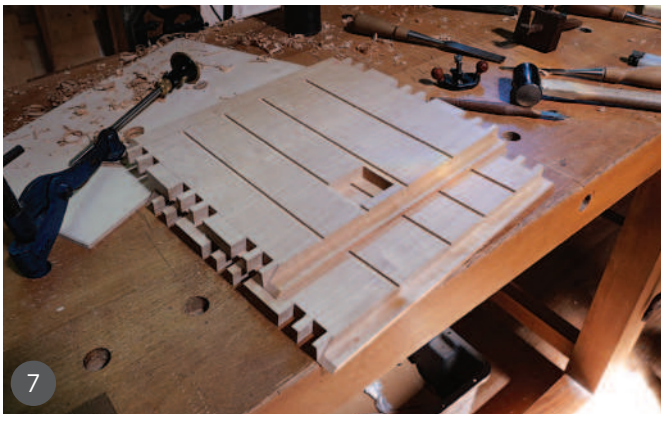
I was asked to make a chest of drawers similar to one I had made a year before. I try not make two identical pieces, so I offered the client some changes on the original design. For this version, I decided to make two small side drawers instead of just one side drawer – a bit more complicated, but a really nice addition. I also changed the dovetail pattern, with good results. And the last change was the veneer for the front: instead of quilted maple I chose a nice quartersawn ripple sycamore. When planning a project, an important consideration for me is to accommodate the design, if possible, to the width of the available wood. I try not to use more than two boards glued together, so that was a factor in this piece.

CARCASS JOINERY

I tried to make this piece simple, delicate but with something interesting in it. This interest came from the dovetail pattern: there are three groups of dovetails – the middle one has three dovetails, and the side ones have two and one mitred dovetail. This arrangement allowed me to use a plough plane to make the rabbets for the back and for the inlays. There are two wider pins between the three dovetail groups.

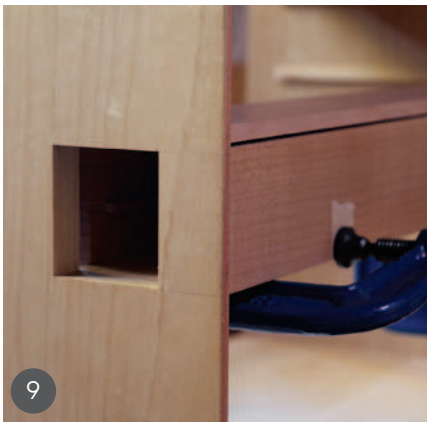
The rest of the joinery was made up of dados for the drawer guides, and the opening for the side drawers. I made the hole to fit the side drawers in by first drilling and then sawing the inside with a coping saw, then chiselling to make the sides

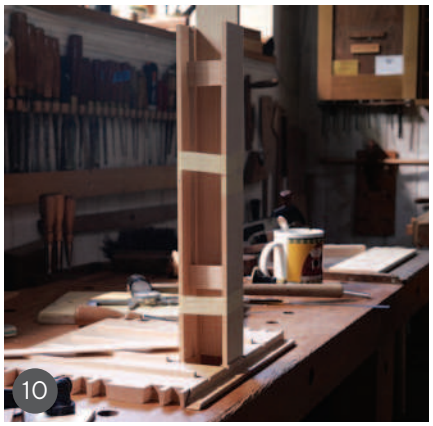


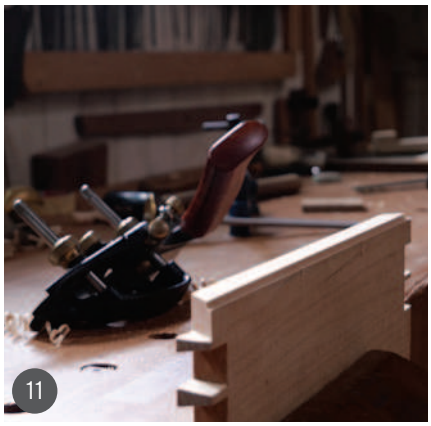


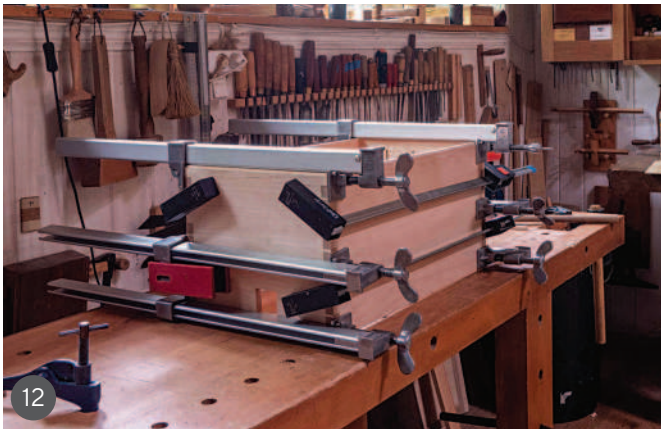
PHOTOGRAPHS BY ISRAEL MARTIN

1 Making the dovetails for the carcass: adjusting the tail shoulders **2** Paring the tails **3** Transferring the tails to get the pins
4 Dry fit of the carcass **5** Details of the carcass dovetails **6** Rebates for the drawer guides
7 Rebates for the back and opening for the side drawers **8** Working on the side drawers' carcass









9 Detail of the opening for the side drawers **10** Structure for the side drawers **11** Making rebates for the inlays **12** Carcass glue-up **13** Testing the drawer fronts **14** Detail of the tails **15** Dry fit of the drawer fronts and sides

smooth. Then I made a case in quartersawn maple for the side drawers (to reduce wood movement), which fits in grooves into the carcass sides. The case has also thin guides for the upper side drawer.

RIPPLE SYCAMORE VENEERED FRONT DRAWERS

I made five front drawers in maple: fronts, sides and backs and two side drawers with ebony fronts and maple sides. I made the front drawers with dovetails in the front and sliding dovetails at the back and then veneered the ripple sycamore on the fronts. Once everything was glued up, I fine adjusted the veneer on the fronts. Then I made the drills for the pulls. I like veneering after glue-up, as it makes the dovetailing easier.

THE FRAME AND PANEL BACK

I love frame and panel backs, they give a piece a luxurious touch. I normally use a bridle joint for the frame. I love this joint for the backs, but I think it is weak for doors.

For this piece, I made two square panels in red cedar. First, I made the grooves for the panels and then the bridle joint, to avoid errors when measuring the pieces. The middle stile is joined with a mortise and tenon and two pegs. The back fits in the back rebate and is screwed to it with old brass screws.

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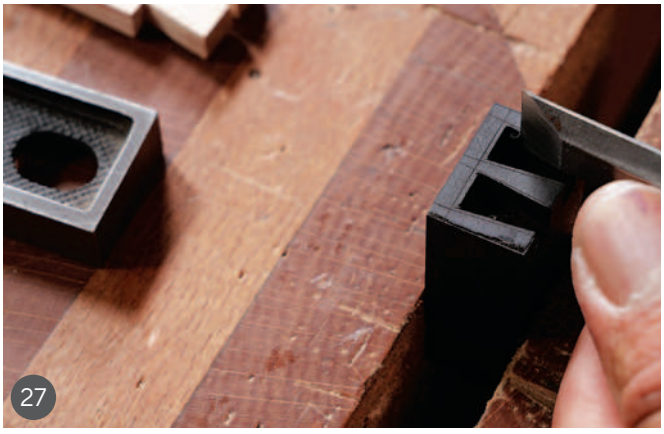

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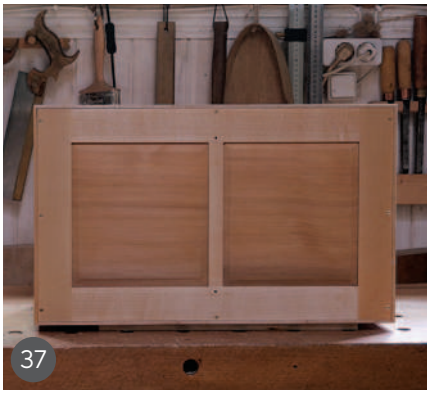

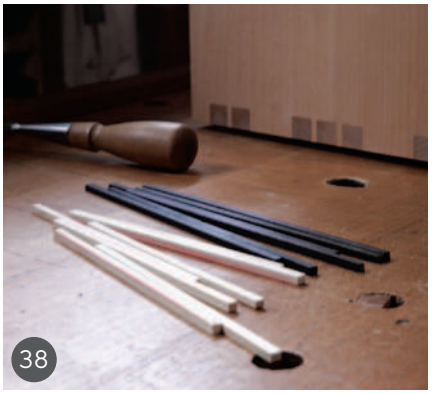

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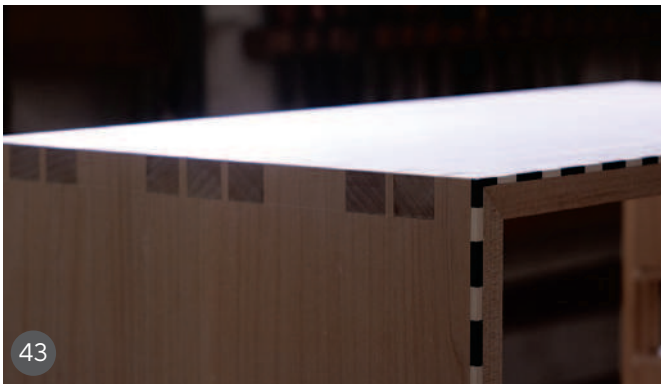
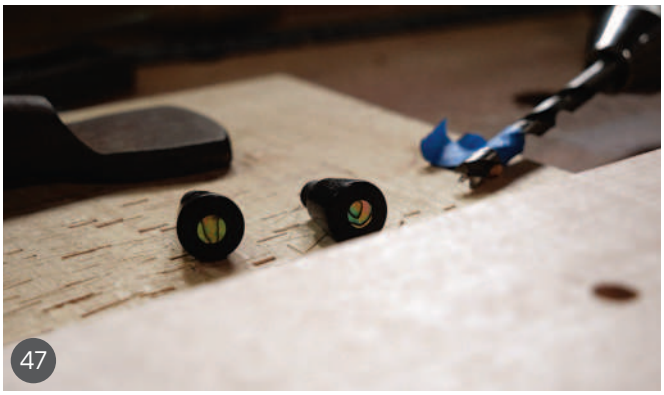
36 Detail of the back **37** The finished back, fixed into the carcass **38** The ebony and holly sticks for the edge inlays **39** Gluing the corner pieces
40 Detail of the corner pieces already planed flush **41** Gluing the rest of the pieces





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EBONY AND HOLLY EDGE INLAYS

Making edge inlays is fun and adds a lot to a piece. I made the rebate on the carcass before gluing it up, after that I fine-tuned the rebates with a shoulder plane to make sure everything was lined up. After making the 2mm square sticks, I cut them in small pieces and started gluing them. I began on the corners, making a mitre on the tiny pieces. Those corner pieces had to be a bit smaller than the ones in the line. After gluing the first corner pieces, I planed them carefully, then I continued gluing up all the pieces from the corner to the centre, and at the end I adjusted the middle piece. Then I planed them flush with the carcass.

WALNUT BASE

Another subtle difference between this piece and the one that I made before is the small base that this chest stands on. I think this base adds a lot to the piece, making it more elegant. This one was made with walnut and the front pieces are joined to the side ones with half-lap joints. The base is joined to the carcass with screws in the front piece and screws in slotted holes in the side ones, to allow for wood movement.

TURNED DRAWER PULLS WITH ABALONE DOTS

I'm not a woodturner but I like to make my own drawer pulls. I wanted these ones to be simple but with a little detail, so I made the ones for the front drawers in ebony, and for the side drawers I used holly, each set decorated with a small abalone dot.

First, I turned the pull in the lathe, a small Proxxon one, and then I drilled in the small hole, enough so that the abalone dot (glued with cyanoacrylate) protrudes a little bit. I sanded it from coarse grit to a fine sandpaper for metal (1,500 grit), then added shellac and polished it with beeswax.

BESPOKE JEWELLERY BOX

THOMAS EDDOLLS FULFILS A COMMISSION FOR A PERSONALISED MONOGRAMMED BOX WITH A FAN MOTIF

A few years back I was approached by a client based in the US who was interested in commissioning a bespoke jewellery box. I had designed and made a few boxes before that the client liked, which was a good start. It meant I could follow on from these designs using previously developed stylistic details and features, while tailoring specific points of interest to create an individual and personal item for the commission.

DESIGN CONSIDERATIONS

Given the required dimensions in the brief, I was then tasked with finding an elegant solution in regard to uniquely linking the piece to the client and her surroundings. She showed me some interior pictures of her home in America so I could see her furnishings and décor style.

After some discussion, we both agreed that a nice point of interest was a carved fan on a dresser in her home where the box was likely to sit. This was chosen as the design inspiration for the box. Picking up on this detail, I sought to take things further with some kind of initialling. The client's first name is Vanessa, so 'V' was chosen.

For the material, we decided on rippled sycamore – a light, elegant and sophisticated choice with feminine tones.

PHOTOGRAPHS BY THOMAS EDDOLLS

1 Work on the carcass began with the through dovetailed joinery **2 & 3** Bird's eye maple applied to birch ply was used for the top and base **4** The components were joined with bareface tongues in routed grooves

JOINERY

I began by making the through dovetailed joinery required to construct the box carcass. First, I carefully marked out the tails, leaving an extra-wide pin area to cut through to make the top, before sawing out the tails using an angled board on the bandsaw. This always speeds things up, saving precious time in the working day. The rest of the jointing work was carried out in the traditional manner, using saws and chisels.

I marked the pins out from the tails before hand-cutting. I prefer Japanese saws for fine work as I feel I have more control over them, though I often switch to their western counterparts if I feel there is any advantage to be gained.

Jointing is a task I can get lost in, it being an exercise in patience, technique and a kind of zonal mindset.

After the jointing was complete, I nipped the joints up just enough to check things were aligning as they should.

THE BOX TOP AND BASE

Working with the client, there were still some decisions to be made and the next one on the list was the material choice for the top and base.

We agreed on some beautiful bird's eye maple that I had in stock, which I laid on to a 9mm birch ply substrate. The top and base were going to be captivated into the box carcass, so in due course precise sizing was needed in order for the works to properly mate together.

ASSEMBLY

I opted to bareface tongue the components into routed grooves, cutting the panels on the panel saw before routing a rebate into the faces to create a mating shoulder line, carefully matched to the shoulder lines of the tail and pin boards.

When I was happy that everything was accurate and the shoulder lines would mate nicely without holding the dovetails off, I glued the assembly up with Titebond, clamping the pressures where necessary to hit the joints home snugly. I left the assembly for 24 hours for the glue to fully cure, then I could proceed with the rest of the project.


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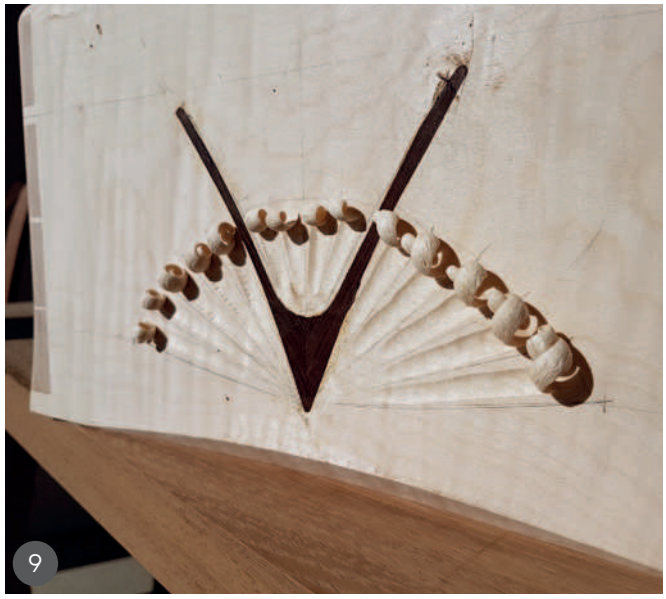
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7


10

5 & 6 A rosewood string line was added to give a clear break between the carcass and the lid
7 The fan and V were first drawn on the box front to check size and placement **8** I practised carving the motifs in sycamore to check how it would work with the tricky grain **9 & 10** The V was inlaid using a piece of rosewood and the fan motif was then carved in place
11 The lid was separated using a pattern saw **12** Stop hinges were then added to the lid

ROSEWOOD DETAIL

After taking the box out of the clamps and cleaning off any glue residue, I decided to break the mating point between the box carcass and the lid top with a rosewood string line.

I routed a 1.5mm groove line half and half into the joint line with a single flute cutter in a router with a side fence, stopping just shy of the corners, which were squared in by hand. I ran the Santos rosewood string line into the groove, finely beading glue into the groove before burnishing the mitred lines in with the back of an old gouge.

SHAPING

As I was happy with the way the piece was coming out, it was time to add shaping to the box. Using a large roundover cutter in a router with a following bearing, I took the corners off the box, reducing the visual weight of the piece. I stopped short at each foot corner so I could curve chamfer this area in by hand with spokeshaves.

I also curve chamfered a relief bevel at the bottom of the box sides, front and back to give a bit of elevation, a stylistic detail I have used on other bespoke box projects. I then gave the box an initial clean-up.

MOTIFS

At this stage it was time to look at the tailored personal elements of the design in the flesh, so I drew out the initial and fan on to the front of the box in pencil to get an overview and check its proportion in relation to the box carcass itself.

Once I was happy with everything, I attempted a practice run to see how the tricky-grained rippled sycamore fared under the chisel and to get my hand and eye in. This gave me a good idea of how to carve the fan, but before I could carve the actual box, I needed to inlay the initial.

I did this in rosewood, using an old piece gifted to me from a retired restorer. Using mating male and female templates, which I made myself, I routed the curved V into the box before carefully cutting out the inlay using an exact reverse mate template.

After clamping the inlay into the box face, I could begin carving the fan motif in place. After hand-working in some scribe lines with a V-point chisel, I carefully worked out the fan with an out cannel gouge until I had the form, finishing off with abrasive papers and rounded sanding blocks.

SEPARATING THE LID

With these design elements complete it was time to pierce the box and separate the lid.

I carefully marked out a nice parallel cutting line, which I worked to with a fine dovetail saw. I used a Veritas western pattern saw with a stiff back and a slightly heavier gauge blade than my Japanese counterparts for a bit more weight and aggression in the cut. Gently and methodically working around the perimeter, I sawed through, before the pieces were separated.

After fettling the two parts together with a hand plane I hinged the lid on with a very nice pair of Brusso 90-degree stop hinges.

I also curve chamfered a relief bevel at the bottom of the box sides, front and back to give a bit of elevation, a stylistic detail I have used on other bespoke box projects.

13 & 14 The trays were assembled and fitted into the box
15 & 16 Turquoise veneer was used for the tray bases

THE TRAYS

It was on to tray making next. I planed up the stock for the parts out of rippled sycamore and housed the dividers into the fronts and backs with a router cutter matched to my stock thickness, mitring the corners together. The tray lining was rebated at the bottom to accept veneered bases before I glued the trays together.

When the glue was cured, I reinforced the mitres with rosewood veneer key splines, carefully marking out with a dovetail angle before sawing in by hand. Fortunately I have a saw with the same size kerf as a standard veneer.

With the trays assembled, ever so slightly over size for a final fit, I veneered up some bases. I had spoken to the client regarding this and we both liked the idea of using a vibrant splash of colour here, so I used a dyed turquoise veneer obtained from the wood veneer hub. This was fitted into the trays before I final fitted them to the box carcass.

Carefully working them in by hand with hand planes and a cabinet scraper (I am lucky to own a very nice Veritas example with an elongated sole at the rear to prevent any sniping at the end of the stroke), I aimed for a nice fit where, once located, the tray would gently slide down into the box gradually, slowed down in its movement by the expulsion of the air beneath it.

The last bit of making to do was to put a bevel around the top of the upper tray in order for the lid to close properly. I did this by hand with a No.5 smoother and block plane, taking care on the corners not to break the mitres out.

17 My maker's mark was added as a finishing touch
18 The completed box, ready for shipping to the client in the US

FINISHING TOUCHES

I began the final clean-up by sanding the exterior to 340 grit with aluminium oxide abrasive papers – this being a closely seen and accessible piece, I went that bit finer with the finish.

When I was happy, I began the oiling process, using a favourite hardwax oil finish system, Osmo 3032 satin finish, applied with a rag and leaving to tack off before buffing the excess off. Cutting the oil back between coats with a very fine paper gives a significantly better finish, lightly denibbing and giving a beautiful sleek surface to apply the final coats to any piece.

I then stamped my maker's signature into the piece, a stage in the proceedings I am always glad to reach.

Finally, the piece was complete and ready for shipping to its new home in America.

BACK TO THE DRAWING BOARD

A COMBINATION OF NOT ONE, NOT TWO BUT THREE FALSE STARTS SENT **IAN PARKER** BACK TO THE CAREER DRAWING BOARD – BEFORE A COMPETITION IN *F&C* LED HIM TO THE PERFECT NICHE FOR HIS CREATIVE MIND AND WELL-HONED HAND SKILLS

'All I have ever wanted to be is an artist, since I was six years old or even before,' says Ian Parker, who now makes fine furniture and teaches furniture-making for a living from his workshop on a former farm estate in the middle of the Ashdown Forest in East Sussex. 'I used to draw all the time, even before I could write, and I still draw pretty much every day.'

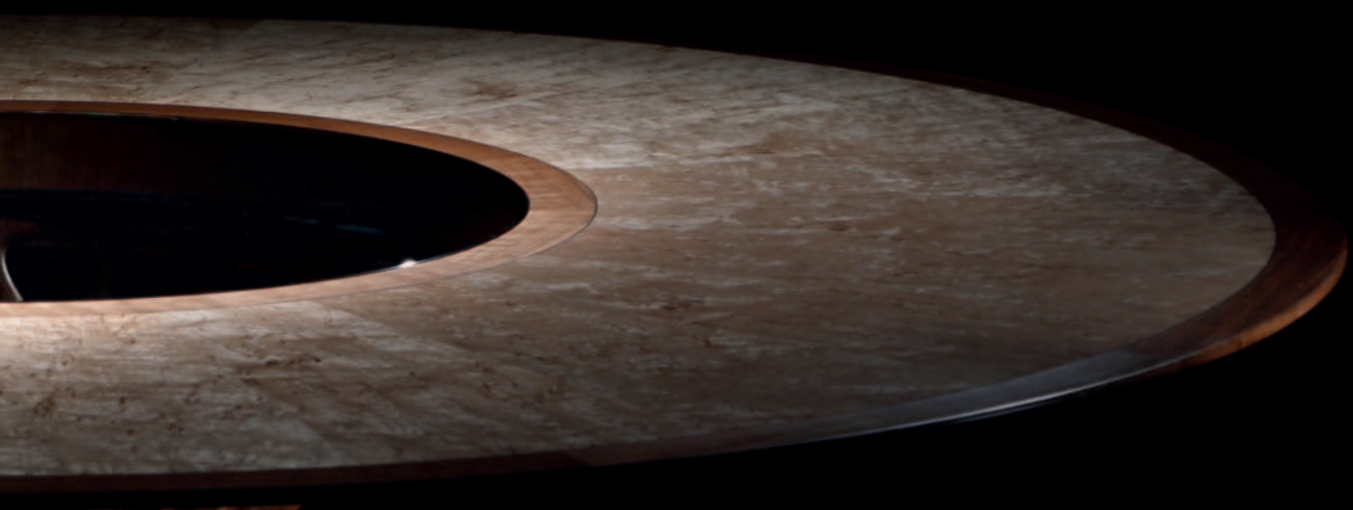
He always wanted to make his living from his art skills, and went through school in order to get himself to art college. He spent two years at Reigate School of Art & Design, where he studied lettering, calligraphy and graphic design. 'I have always been drawn to precision, so I went towards commercial art rather than fine art,' he says. When he left college in 1989, Apple Macintosh computers had just come in and art departments were getting rid of drawing boards and drawing instruments and installing computer suites instead. Ian decided not to follow suit. 'I wanted to use my hands, and had spent years learning how to do that,' he explains.

Although the country was in the grip of the first recession of Ian's lifetime, he found a job with a high-end building company, which employed him to paint watercolour illustrations of its projects – mainly interiors, kitchens, bedrooms, rebuilds and the odd extension and new house. 'The illustrations had to look like the finished project, so the client didn't have to read the plans to get a proper visual,' he says. During three-and-a-half years there, he taught himself airbrush illustration and started painting custom motorcycle helmets alongside his work.

He decided to get a qualification in technical illustration, something that was only available at three colleges in the UK. 'I rode on my motorcycle to Swansea for the interview, with illustrations from where I was working as well as some other drawings I had done,' he recalls. 'At the interview the course tutor introduced me to the course director, who offered me a place there and then, so I was delighted. He said some of my work was better than his second-year students were doing.'

Ian went to Swansea and spent two years there, learning how to take 2D engineering drawings and create a 3D view of anything from a yacht to an engine or a sports car. 'It may take a few weeks or months even just to produce the drawing,' he says. 'You would then render it, and that would take another couple of weeks, as they are quite technical subjects. At the end of those two years, computer-assisted design had just about come in, so engineers who wanted to produce 3D drawings would press a button and the computer would produce it.

'After two years in lettering, three years in watercolour illustration and two years learning really detailed technical illustrations, I was obsolete once again. I was without employment, but with a lot of really detailed hand skills. I was



disappointed, and couldn't see how I could use these long and hard-earned skills,' Ian recalls.

IN STEPS *F&C*

Ian got a job working for a sign company and bought his first home, a maisonette, the purchase of which left him without cash to buy furniture – so he started making his own, starting with his bed. He had begun reading *F&C*, and in 2002 entered his second make – a dining table and chairs – in the magazine's furniture competition, only to win third prize in the Newcomer category. 'I built them having had no training and no experience of woodworking,' Ian remembers.

'Having been introduced to furniture making by necessity, I went to the exhibition at the West of England Showground to collect my prize and take my work home.' When he was setting up his entry, before he knew he had won, he stumbled upon an exquisite cabinet entered in the same competition. 'I had never seen anything quite like it,' he says. 'It had marquetry, it was curved not square, and it was all French-polished like a piano so it was just gleaming. My heart sank and I thought I was totally outclassed – my work looked like it was made with an axe by comparison. Now I realise I must have been looking at the professional category!'

Ian's win inspired him to use his hard-won hand skills to make furniture. 'This is a direction I can go in, because the bespoke world isn't going to be taken over by computers,' he told himself. He decided to get some training and found John Lloyd's Furniture School in Ditchling, East Sussex, not too far from his home, where he took two courses in the fundamentals of cabinetmaking.

John became a friend and encouraged Ian to enter the *F&C* competition again, and in February 2006 he did so – and won a special award for the most promising amateur. By this time he had changed jobs and was working for an importer of designer radiators from Italy. He started there building exhibition stands, then overhauled the company's marketing brochure, building sets to photograph the radiators it sold and creating a thick and glossy publication that would fly off the shelves at the Ideal Home Show. He had a big workshop at his disposal and had kitted out his own garage as a workshop as well. 'I was still making my own pieces in the evenings, developing better and better pieces and upping my skillset. Then people started asking me to make things, so I did, until it got to the point where I just wanted to do my own thing – so in 2008 I packed in the job and started making to commission out of my garage.' He has moved twice since then, and has been in his current workshop, a spacious building in a beautiful setting but hard to heat, for about eight years.

GETTING STARTED

Another recession hit as the credit crunch of 2007 played havoc with global financial markets, and Ian lived like a church mouse to keep his fledgling business going in the early days. But he was buoyed by some major commissions, starting out with an architect who ordered seven double wardrobes in ash, all with curves, for his own home. 'That brought in a hefty price tag,' Ian says. 'The pieces I have made have always been on the heftier side of the price tags, and I suppose the advantage I have had in securing those commissions is that I have been able to produce an illustration of what it is actually going to look like, not just that but an exciting illustration, an aspirational illustration, something fun.'

Ian's sketchbook came in handy once again when a church asked him to suggest a design for a bishop's chair. Some ecclesiastical businesses had offered the organisers catalogues from which to choose, but Ian picked up a detail of the tracery on the church windows and incorporated that into his idea for a high-backed chair, sketching it out there and then. 'They loved that because it was clearly made for their church,' he says. The commission grew from a single chair to three chairs, kneelers for each chair, a lectern, a communion table, a side table, four candleholders and a processional candle, ending up worth more than £10,000. 'They keep popping back saying can we have this or that, which is rather nice actually,' Ian adds.

Another boost to his business came from Grand Designs Live at London's ExCel, where he had a wide, shallow stand on the main avenue which was great for showing off his work. He had made a 2m-wide French-polished cabinet in macassar ebony, and it was only when he was at the show that he realised that if he had to take it home, he would not be able to get it into the showroom attached to his workshop at the time, because there was a sharp bend in the staircase to get to it. Luckily, on the last day of the show he sold the piece for £16,000 – and was commissioned to make a desk to go with it.

On the same day he had noticed a smartly dressed man waiting near his stand, but not approaching. In the end he came up and asked if he could represent Ian, on behalf of a company called Quintessentially, a concierge service to very wealthy clients. Within the week he had been asked to create a cabinet to house a knife collection, for £13,000. 'Just one or two pieces can tide me over for a year,' Ian explains.

The client who wanted the knife cabinet wanted a plain white box with a glass top, but Ian was concerned this might be boring. So he added walnut details and added long solid aluminium handles worked into curves, so that when all the drawers were shut they looked like knives. 'The client thought that was fantastic, as he hadn't thought of it,' says Ian. This client's wife had opened a gallery in Mayfair, and asked Ian to produce furniture pieces inspired by artists showing in the gallery, in order to set off the art. His first commission was a pair of chairs and a console table to complement the work of Nigerian-born painter Onyeka Ibe, and Ian introduced some of the geometric motifs from his work in veneer form into his furniture. The client was so pleased that she also asked for jewellery boxes and picture frames to be sold in the gift shop. This was the first of several similar collections. Each time he gave a submission he would provide plenty of illustrations, showing what his pieces would look like in a room setting.

BACK TO SCHOOL

Ian wants to encourage other makers to learn drawing skills, and to that end has started a furniture school, offering courses in drawing, tool sharpening and various aspects and levels of furniture-making. His main one is the art course, which he says is 'for furniture makers who think they can't draw'. He adds: 'I have always wanted to teach the art and the drawing side, because it is something I have always done and it is a real string to any maker's bow, to be able to actually draw in front of a client. I offer a three-day course to teach you to sketch to scale, so you can brainstorm ideas and they will look something like what you might want to make. The difference between drawing furniture and a vase of flowers is that if you draw a vase of flowers and the flower is a centimetre in the wrong direction, it doesn't matter that much. If you draw a leg of a table a centimetre or more out, it is clearly wrong. I can teach you how to produce a clear drawing.'

The three-day course starts with learning to sketch on day one, day two is about drafting and technical drawing, producing a scale three-quarter view of a proposed piece, and the third day is rendering: colouring in the drawing in watercolour. On the first day of the course Ian gives his students the dimensions of a simple piece of furniture and asks them to draw it, then at the end they do the same thing again. 'The difference is transformational,' he says. 'What they draw before is wobbly and looks like a doll's house piece of furniture, or something enormous – the scale is completely wrong. At the end of day one even the least talented have got something that is at least visually to scale, and completely different to what they started with. It is such fun.'

In the watercolour part of the course, students get to pick and paint one of dozens of veneers Ian keeps in a specially made box, which also includes a drawer for his sketchbook and pencils, so he can pull these tools out in meetings. 'It's like a box of chocolates,' he says. 'By the time I have opened it I have pretty much got the job.' His top tip to furniture makers who don't know how to draw is to start by learning to draw a cube. 'You have to be able to do that if you are going to be able to draw anything to scale,' he says. His other tip is to sign up for his course.

The art course led to other furniture courses, but the school had barely launched when Covid hit and it didn't feel right to try and continue during the pandemic, as his courses are geared at enthusiastic amateurs rather than professionals. At the time he wasn't set up to produce online courses, but now Ian has relaunched his school in person and is kitting out his workshop to be able to create online courses, so he can reach students beyond the UK's borders. Courses can host up to six students, as Ian wants to give each person plenty of individual attention.

GOING IT ALONE

After years of making commissions, Ian is keen to work on projects that he sees as wholly his own work. He explains: 'Clients always ask for something, and although what they get is something they hadn't thought of, that is more artistic or delightful in some way, or suits their needs more, it is something I make for them to a close brief, so it has never been my own piece. What I am doing now is focusing on teaching and not doing any more commissions unless they are really exciting and I can make them my own.'

His favourite piece so far is a 2m dining table on a pedestal of laminated cherry, with a central glass section in the middle of the wood. The idea was something he planned to make for his own family home, but when he was teaching one day a student asked him what he was working on. Ian sketched out his idea for the table, and another student loved it so much he ended up commissioning the piece for himself. 'It grew from a 1.8m table for us to a 2m table for him, and it took me over 2,000 hours – a year and a half – to make it and eight chairs which all match. To do them all differently is easy, but to do them all to match is not.' It took three attempts to work out how to make the pedestal, and Ian's own dining table – still in progress when *F&C* met him – has been relegated to a simpler rectangular design, because it is needed in his home.

Ian has changed the name of his business from Ian Parker Furniture to Ian Parker Studio. 'It's more relevant,' he says. 'People ring up and ask if I do sofas.' He plans to make a start his next 'own design' in the new year. 'The table is my first proper showpiece, purely for me to demonstrate my work. It's the only thing I've done with just my own constraints, no client brief, just for me.' He has five or six pieces in his head and in his sketchbook, which he says 'have got to get made before I die'.

Ian says: 'The way I work is that I draw all the time. I have got sketchbooks by the television remote control, on my bedside table and two here in the workshop, and they get filled up and replaced. It is brilliant because, if I want to make a table, I look back at my sketchpads. Something that is not necessarily related will spark an idea, and before you know it I have come up with a design that looks back on something I may have sketched years ago.' He follows industrial design and architecture for inspiration, but avoids looking at other furniture makers because he doesn't want to be influenced. He goes on: 'At the moment I have got four to six different pieces I sketch out regularly. Every time I sketch them, the drawing changes a little. Through a series of evolutions I get to the end result. When it's right it's right, and when I can't improve it any more to my eye, I start working out how I'm actually going to make it.'

Ian loves working with close-grained native woods, especially sycamore for its colour and flexibility, and although he uses machines 'for the legwork', loves working with hand tools the way he loves working with his pencils and paintbrushes. His pieces often feature veneer artwork and motifs, which come easily to him thanks to his long years studying and working in art. His favourite tool is his scalpel. 'I have been using this one since I was 18 and I'm now 51, so 33 years,' he says. 'It is the cheapest tool I have and I use it all the time.' When he's not working Ian spends time with his wife and two sons, aged nine and seven, but admits his creative mind rarely takes time off. 'Even when I get the odd quiet time gardening or, my favourite, sitting on my ride-on mower, my brain quickly switches to whatever is in my head at the time – generally a piece of furniture or design. My sketchbooks are merely a visual representation of what is going on in my brain all the time.'

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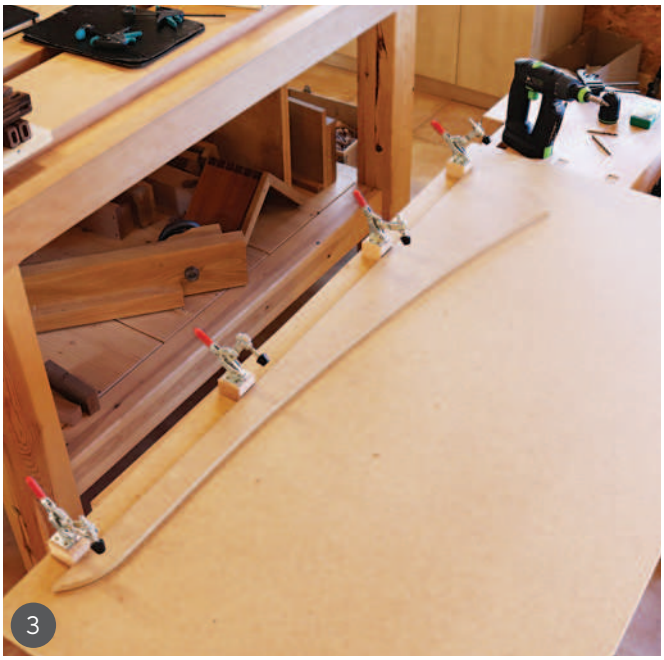
REFLECT ON CURVES

GERMÁN PERAIRE CREATES A MID-CENTURY INSPIRED WALL MIRROR

Of all the designs I have executed, I think this one is the most accomplished. It's nothing but four planks holding a mirror, yet its slender curves and joints make a statement from which I couldn't add or subtract anything.

I find great inspiration in looking at pieces made by other people, whether online, in books or even in mass-made furniture stores. Often there is a shape, a proportion or an idea that triggers the question: 'How would I do that to make it my own?' That is the case here: in 2017 I was deeply moved by a mid-century mirror I saw on the internet which had the loveliest profile, but it was a bit simpler in form, possibly joined with screws concealed with dowels visible on either side. That image stayed with me. Two years later, I replicated it more or less by heart.

My design departs slightly from the production-run simplification of the original to become a bit more sophisticated, with traditional Arts & Crafts joinery and a few more curves on the rails. At the time, I had in mind a collection of household furniture produced in small batches but still with the hallmarks of handcrafted cabinetmaking.



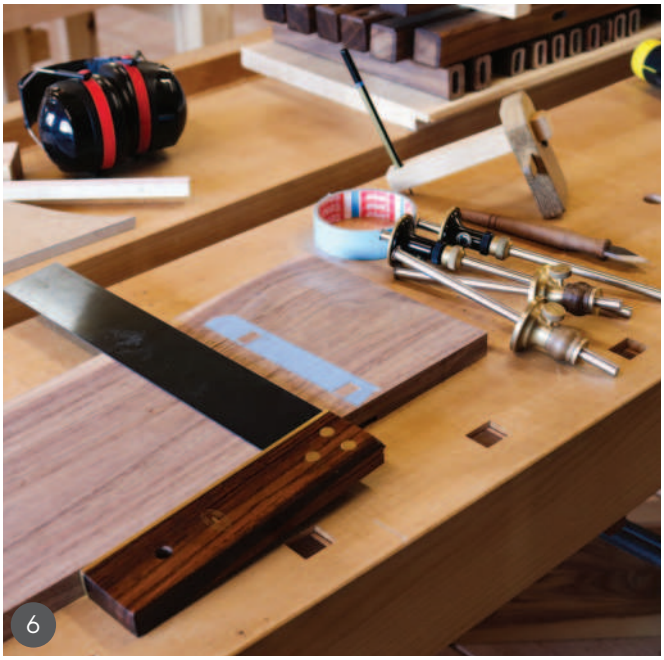
PHOTOGRAPHS BY GERMÁN PERAIRE

1 Scaling the compound curve on metric paper and transferring on to tracing paper **2** Gluing the traced profile on to MDF to make the master template **3** Using the master template to make the template-routing jig **4** Through wedged tenons are the sturdiest joint and add fine decorative detail

CURVED WORK FROM A MASTER TEMPLATE

The beginning of that profile was some scribbles on paper, repeated many times. Every subtle variation resulted in a whole new emotional response. Once satisfied, I drew it on metric paper to enlarge it to full scale by transferring dots. I am somewhat competent in CAD, but I still prefer the feel of a pencil and the smell of paper. Detailed plans for the joinery were essential to ensure no interference with the mirror rebate and the curves.

All the curve work is based on a master template that was used to trace the profile on the planks with the best possible grain orientation. It is also the pattern after which the flush-routing jig is created, so every irregularity there will be mirrored in every piece. To make the master template, I transferred the shape on to tracing paper. Then I glued it to a 10mm MDF board, cut to the line at the bandsaw (M42 steel blades allow work on composite materials) and refined the shape with a spokeshave.



5 Routing the housing for the shelf **6** Four wheel marking gauges define the through tenons
7 A tiny square helps avoid both undercutting and bumps **8 & 9** Fitting the shelf stock tightly to the housing

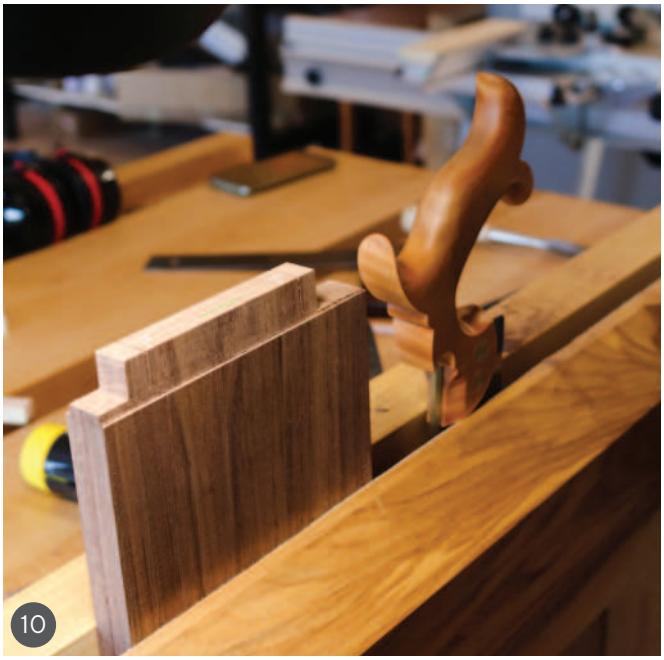
A STURDY JOINT

The housed through mortise-and-tenon is a splendid joint which I enjoy making. It was a favourite of Alan Peters and many other craftspeople because of its integrity and because it adds a little decorative detail. While the housing keeps the shelf flat and well supported, the wedged through tenons keep it attached to the sides with tremendous force.

First, I routed the housing using a large square as a guide. I know it seems precarious, but I am comfortable with that. A dedicated gig or even a roofing square would probably be safer.

I marked the mortises with four different gauges and saved the adjustments to mark the tenons later on. The masking tape works as a visual aid, although it's not essential. I like to use a 45mm square when chiselling to ensure that the mortise walls are flat and square to the faces: any bump there would keep the joint apart, while undercutting would undermine the glue bond.

I cut two rebates on the shelf to fit the stock into the housing with some friction.



10 A dovetail saw forms the tenons **11 & 12** Identical wedges are cut at the bandsaw. Note that a zero-clearance table is clamped for safety

The shoulders help achieve crisp inside corners – any gap between the shelf and the sides would be conspicuous! With that done, I could mark and cut the tenons using the previously adjusted gauges, a hand saw and a coping saw. The joinery in the upper rails is pretty much the same, except for the absence of housing. Next, I routed the rebate for the mirror at the router table. It is rather deep because it has to accommodate the mirror, the MDF backing and the screwing strip.

CUTTING THE CURVES

With the joints completed, I bandsawed the curves leaving a 0.5mm waste margin and made the final cut at the router table with a flush-trim bit and the previously made jig. Then, I spokeshaved a thumbnail profile into the edges, leaving the tool marks visible. I also bevelled the curved edge of the shelf to make it look lighter.

Template routing is a shrewd strategy for batch production, but if you intend to make a one-off piece, I would just cut close to the line and refine the shapes with a spokeshave.

13 Routing the rebate for the mirror **14** Shaping the component with a flush-cut router bit **15** The components are almost finished **16** Shaping the edges with a spokeshave

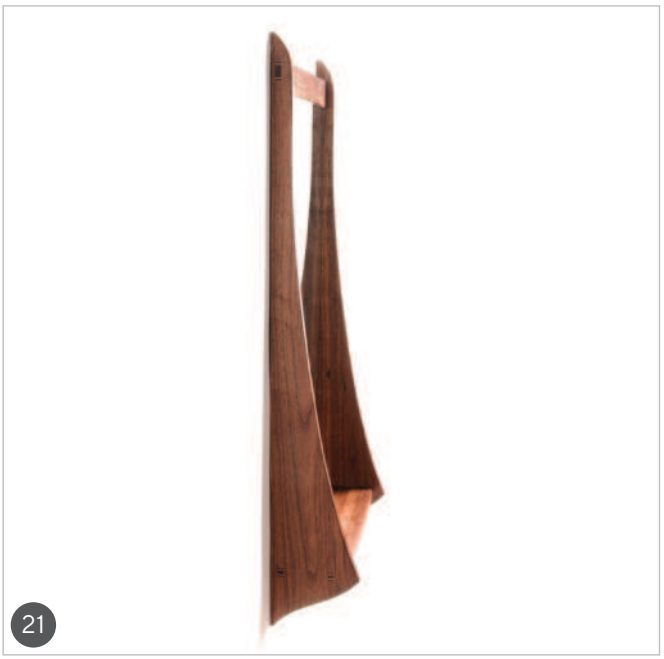
FINISHING THE JOB

I always finish the inside surfaces before glue-up: it is much easier and the finish prevents glue squeeze-out from sticking. I applied three coats of my favourite surface oil (Osmo Polyx Satin) to protect and enhance the American walnut.

Gluing wedged tenons is particularly challenging because you need to leave space for hammering the wedges home. You can't align the clamps with the joint, but the pressure should be even to avoid distortion. It must be thoroughly rehearsed and, to be safe, it's best to keep a few extra wedges just in case! The next day I trimmed the protruding tenons with a flush-cut saw and finished the outer surfaces.

It's wise to order the mirror after glue-up to take the final measurements, which may vary from your plans. If you don't account for a tolerance (0.5mm should be plenty), wood expansion could easily break the glass.

It's also best to avoid the fragile mirror back making contact with the MDF backing. A thin strip of wood or plastic



17 The clamping must be even and allow for driving the wedges in place **18** Flushing the wedges with a Japanese flush-cut saw **19 & 20** Installing the mirror with the backing and fixing strip **21** The piece is best appreciated from the side

(1 or 2mm) around the perimeter does nicely.

I routed recesses for the keyhole hangers at the edge of the uprights, but they fit rather tightly in the thickness of the stock, so next time I'll do it in the upper rail.

CONCLUSION

I've had this piece at home for three years now. The more I live with it, the more I value its quiet presence. I have found that it looks much nicer in wide empty spaces and its elegant shapes are fully appreciated in the side view. Using a lighter wood like hard maple could accentuate its slenderness.

It's nothing but four planks holding a mirror, yet its slender curves and joints make a statement from which I couldn't add or subtract anything.

'... Something that was reliable, that could be counted on. You saw what you were looking at and you touched what you were touching. The proportions were what they should be, everything about it had been designed and calculated by a meticulous mind for the purpose of utility ...'

The Poetics of Space by Gaston Bachelard

LARDER CUPBOARD

JIM BENNETT DESCRIBES HOW HE MADE A STATEMENT PIECE FOR ONE OF HIS FIRST CLIENTS

'A cupboard to hold everything' was the initial design brief I received for this piece some years ago. I had just moved to rural Suffolk and started my furniture-making business from a small workshop in a barn that I rented, and still do, on a nearby farm.

The client had recently had a new kitchen fitted as part of a large extension. The new space was an open living, dining and kitchen area, so the piece was to provide freestanding storage somewhere between a kitchen cupboard and a sideboard. It was not to be part of, or to match, the white high-gloss finish of the kitchen units, but had to sit well with it. It was to be a statement piece.

This was the largest commission I had received at the time, both in terms of cost and physical size, and was the first of three pieces commissioned by this client for this room. Combining this thought with the limited workshop space available I had to carefully consider how I was going to go about this. To say I was nervous would be an understatement.

DESIGN

Starting a new commission is exciting but also overwhelming as the choice of different materials and designs spin round in your head. You often need something to give you that inspiration, what Nancy Hiller calls a design cue in her book *Kitchen Think*.

On my initial visit I had noticed a couple of rather nice Italian high stools made of solid oak at the island unit in the same room, which was the division between the kitchen and the living area. They had caught my attention as they were a clever mix of a contemporary design with a traditional material.

The space was fairly quiet, calm even, and there was a sense of order, but somehow the stools gave it that slight twist. They were simple but elegant. I decided this was the way to go. If I could design a utility item – a cupboard – like the stools and give it that twist, a modern feel made in traditional materials and joinery, it could work.

One concern was its size. Although this was a large room, it was of normal domestic ceiling height. A 'cupboard to hold everything' was not by its very nature going to be small, and yet if too big, could be overpowering.

Ideas were sent back and forth and a design was emerging: externally there would be a simple double height cupboard with two sets of double doors to access the upper and lower spaces; internally there would be a mix of fully adjustable shelving to the upper level, with a central cutlery drawer and wine storage in the lower level, and removable shelving either side for more general storage of kitchen paraphernalia.

My idea was to have a plain exterior so as not to dominate the room, revealing finer detail internally when the doors are opened, giving an element of surprise. This also meant that the construction would not be hidden, so the craftsmanship internally would have to match the quality of the exterior.

TIMBER

The honeyed oak of the two Italian stools was a perfect colour for the room, so I decided to make the unit to match. Searching through the timber in my local yard for the least distorted and yet most pleasing grain pattern is a necessary and enjoyable part of any project. The timber is sawn, as in it has been cut from the log and, in this instance, kiln-dried. It has not at this stage been planed, so the actual grain is hard to see. For this reason I normally take a hand plane from the workshop with me, plane a small area of the timber and wipe it with a damp cloth to see how it will look. Having made my selection of European oak, I managed to load up the timber and get it back to the workshop.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PHOTOGRAPHS BY JIM BENNETT

METHOD OF CONSTRUCTION

The client had specified that the piece was to be made of solid timber...

'Ah yes, solid wood' we say, and knock... Any fairly involved piece made of solid wood that is to be strong, and interesting, demands judgement on the part of the craftsman...'

The Impractical Cabinetmaker by James Krenov

And so it does. I spent long hours working out the details of this piece – longer than I should. Basically, although solid timber was requested, the reality is that framed and panelled construction is by far the most stable and practical method of building a piece like this. Also, if carried out correctly, it will reduce damage and distortion due to movement.

I had decided that the cabinet was to have plain square-edged panels to the sides and doors. The rear was to be panelled, as it would be visible internally. The idea was to keep the front as a pair of opening panelled doors top and bottom, but once open, the interior was to be divided vertically into three rather than two. This was for an element of surprise and also to keep the shelf span shorter, as the cupboard was wide.

There were some immediate difficulties I could forsee. I had to be able to manoeuvre the piece around in the workshop. While working alone can have its advantages, the nature of the work is such that you start building a large piece of furniture from individual smaller components, and before long your creation is sitting on the floor or workbench and it's too heavy to move.

The unit would have to go through a single door. Also, it was to be a virtually full height unit in the room and, as the diagonal dimension of the unit will always be greater than the vertical height, I decided it would have to be made in two halves, top and bottom. This would add a complication in terms of ensuring they are an exact fit and ensuring a safe system of securing them together, but answered all the other issues.

The height was limited by the ceiling and the depth had to be no more than the adjacent pillar. However, at the end of the day the overriding dimensions are those which look right.

CONSTRUCTION OF THE MAIN CARCASS

The main upper and lower carcasses were to be of traditional joinery. The timber was cut down into suitable sizes for the frame and panelled construction, incorporating 20mm-thick and 70mm-wide stiles and rails with a 75mm-wide bottom rail. The central panels were resawn from thicker oak pieces, which were then milled to 10mm thickness. I numbered the pieces and jointed them using a rubbed joint with glue. I spent too long selecting the most pleasing grain pattern for the panels, but in the end it was worth it. The frames were made up with traditional mortise and tenon joints and grooved out for the panels. The panels were glued in with minimal glue to the centre of the top and bottom grooves only, to allow for movement.

I had decided that by increasing the thickness of the outer frames of the side panels, I could get away with hanging the door directly off them using traditional butt hinges. This worked well.

The upper part of the cupboard comprised two large side panels joined together by solid oak rails to form the carcass. This was done using barefaced lapped dovetails, with the rails set into the stiles of the side panels. Further lapped dovetails were cut into the rails along their length at one-third intervals and additional solid oak pieces the depth of the unit were set in to form a ladder-type frame. This was done on the top and bottom of the unit.

The cupboard had a traditional oak-panelled back which was made with solid oak vertical joints, called muntins, fitted between the top and bottom rails, again for strength. This muntin was a T section with the rebates either side housing the rear panels. This effectively divided the large back panel into three smaller sections which gave additional strength and stiffness and also looked better internally. The muntins were positioned at one-third intervals to coincide with the internal subdivision of the cupboard. A solid bottom shelf was then fitted and a lighter-weight top.

1 Oak re-sawn and being selected for panels and numbered accordingly **2** Panels made up using re-sawn oak with rubbed joints. They were finished with a cabinet scraper **3** Oak panels being made up. The tenon joints are visible here. Note: rail behind with a stopped groove as this is a door panel so the mortise and tenon joint is not exposed. On the frames forming the sides the joint is not visible so doesn't require a stopped groove **4** Oak frames being clamped following glue-up. The mortise and tenon exposed here as it's a side panel **5** The completed joint **6** Cutting lapped dovetail sockets into the rail **7** Testing lapped dovetails for fit **8** General view showing top rail in position and cross pieces jointed in to form ladder frames to cabinet top and bottom **9** Cupboard shown lying on the floor face down, to allow rear muntins to be fitted. Note: the muntins line up with the cross pieces previously fitted for symmetry and for provision of secure hidden fixings for internal vertical dividers


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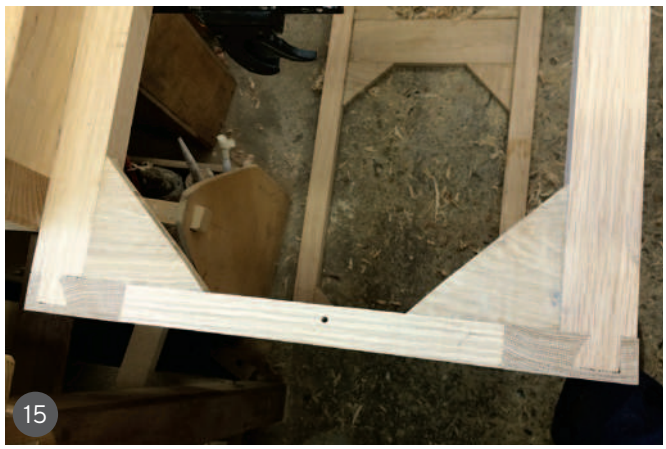
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10 View showing the top of the upper cabinet with the top and back fitted and screws fixing vertical dividers **11** Cutting saw tooth shelf supports on the tablesaw **12** Saw tooth supports glued to vertical dividers before fitting **13** Internal vertical dividers now fitted to upper section of cupboard **14** View showing the lower cabinet construction including additional corner blocks for strength. These were glued and screwed in position **15** Closer detail showing the rail dovetailed into the side panel of the cupboard together with additional corner block **16** Mid-rail dovetailed into the main cross rail and additional corner blocks fitted **17** The lower cabinet constructed and test-fitting drawer in the carcass unit **18** Using the router with shop-made timber trammel to cut holes in a piece of oak for the wine storage racks. The timber shown was cut in half to provide the semi-circular profile required **19** The lower cupboard, with drawers fitted and wine rack being test-fitted **20** The top cupboard with oak panelled doors and cornice fitted **21** Top and bottom units joined for the first time in the workshop

With the outside carcass made, I divided the unit into three equal sections internally by installing vertical oak pieces. To the rear they were fixed through the back of the centre of the muntin and also at the top and bottom through the additional frames set in between the rails. No fixings were visible internally.

I now had three tall vertical spaces of equal width in which to install shelving. The clients had requested adjustable shelving as they were unsure what would be stored here. Although this was a freestanding piece of furniture it was in fact partly a kitchen cupboard. For this reason I provided saw tooth supports with oak inserts cut to size as supports. This would be both practical and visually attractive. Also, in my experience, if the fully adjustable support system is complicated or fiddly, people tend not to use it.

The saw tooth support system was made by cutting solid oak strips the same height as the interior of the cabinet and planing them to approx 12mm thick. I then taped these together in groups and carefully marked up one face using a thin MDF template. Using the tablesaw, repeat cuts were made to form the saw tooth pattern.

This was repeated until all 12 were ready – four for each section. I then cut the smaller horizontal shelf supports, also in oak, which would slot in to carry the side edges of the shelves. The long saw tooth timbers were then glued to the inner sides of the spaces using a variety of clamps and wedges. This was a messy procedure but I did not want any visible fixings in the interior.

I did put a few of the shelf supports in at this stage and some temporary shelves, and used a short spirit level (boat level) to ensure everything was level during the glue-up.

One of the reasons for making the support system 12mm thick is to enable the shelving to be slightly undersized and therefore easily removed or repositioned. By repositioning the interlocking support bars the shelf height is not only fully adjustable, but also fully supported along each side. It is quite a simple system for the client to fully utilise.


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The top cupboard was now complete except for the cornice detail. In keeping with the plain style of the cabinet, I chose a very simple piece of flat oak fixed at 45°. This was returned to both sides with a mitred corner joint. Battens were fixed to the rear of the cornice and in turn screwed to the top of the cupboard. Again this prevented any visible fixings internally.

LOWER CUPBOARD UNIT

The lower cupboard was of a similar construction to the top. A template was used to ensure they were exactly the same size during the build. I also had to consider that the lower carcass would in fact be carrying the weight of the upper one. A similar construction was used with framed and panelled sides fixed together with solid oak rails, however, some additional corner pieces were introduced to strengthen the base unit.

The lower unit was to be divided into three compartments, as with the top. In the central section there was to be a cutlery drawer and beneath that a wine rack. The drawer was a traditional solid oak pull-out drawer on timber rails – no ironmongery. Purely as a feature, bearing in mind the theme of traditional joinery, I decided to use through dovetails on the visible part of the drawer construction. There was a particularly nicely figured piece of oak used for the drawer front. The through dovetails were hand cut with the pins and the tails being of equal thickness for strength and also appearance and worked well (often referred to as 'cistern dovetails'). A solid simple oak cutlery insert was made for the drawer interior with sweeping top edges.

Beneath the drawer I designed a wine rack. As this was at low level, it was decided to have a pull-out system. It would house 12 bottles in three rows of four. The construction was a form of open tray, with curved recesses cut into the front and rear to accommodate a bottle of wine, the front one smaller for the neck of the bottle and a wider one at the rear for the base of the bottle.

These were made by cutting circles at the required centres in a piece of oak using a router with a trammel arrangement made in the workshop. The timber was then sliced through the centre of the circles to form the half-circles required for the bottles. The front and rear pieces were then attached by solid oak sides forming a sort of open tray. Timber runners were then fixed to allow these to pull out to remove the bottles.

As with all of my 'wood to wood' drawers where there is no ironmongery, once the drawers are fitted I apply a small amount of beeswax to smooth out the action.

Either side of the wine rack removable shelving was provided for general storage.

As both the top and bottom cabinets were now completed it was time to fit the doors. Door fitting is always stressful on a cabinet. There is nowhere to hide. I chose solid brass butt hinges let into the side and door of the cabinet with brass screws. The only way to ensure these are done correctly is to take your time. It cannot be rushed.

Brass screws are considerably weaker than steel and shear easily when being fitted. For this reason, I used a self-centring hinge drill bit to fix the hinges using small diameter steel screws. Once all hinges are fitted and the doors operate correctly these screws were removed one at a time and replaced with solid brass ones fitted by hand with a small amount of beeswax and clocked.

With the help of some friends I lifted the top unit on to the base in the workshop. Thankfully it fitted. I had allowed for some additional fixings to lock the two together, which secured them. It was the first time I had been able to see the whole unit as one.

FINISH

The finish was Osmo polywax oil throughout. The whole unit was sanded, although most of this work had been done while the individual components were being assembled as it is easier than trying to sand once completed.

The client had requested leather handles to the cupboard doors. There is a local saddler near my workshop and they made the handles for me. I also had the idea of using one as a pull to open the cutlery drawer as a surprise when the doors are opened, which my client really liked.

The cupboard, which took longer to make than I ever imagined, was a steep learning curve for me in many ways. It was taken to its new home 230 miles away in Dorset, and I was there to assemble on site. There was, as always, that moment when you really hope you did measure it correctly... fortunately I had, and the piece now sits exactly where I had imagined it.

IN MEMORY OF NANCY HILLER

Shortly after writing this article, I heard the very sad news of the passing of Nancy Hiller. A maker, writer and teacher, she was an icon in the making world, a true professional, talented, and down to earth with the ability to tell it as it is. Nancy was a big influence on my work – both in the workshop and writing articles. I never met her but would have loved to. She inspired me to write by running a competition some years ago in her Lost Art Press blog, Making Things Work – True Tales of a Cabinetmaker's Life. I didn't win but was a runner-up and my article was published.

In her last book *Kitchen Think,* Nancy describes how she made her cabinetry. That was her magic: she turned out amazing work and related to the many thousands of woodworkers – like me – who have small workshops, giving us the belief that we could achieve something even close to the same without spending fortunes on expensive equipment. Thank you to Nancy R Hiller. RIP. A great loss.

22 View showing the top cupboard with doors removed and shelving in place **23** Doors on, drawer in position, wine rack in and hardwax oil finish on – ready for its 230-mile journey! **24** Exterior view showing cornice and finish **25** Cupboard in situ **26** The leather handles fitted on the front **27** View showing the top cupboard with the doors open **28** The lower cupboard with the cutlery drawer and its leather pull **29** The cupboard in place in the client's room

PHOTOGRAPH BY AARON GEIS PHOTOGRAPHY

ARTICHOKE CONFERENCE 2023

THE ARTICHOKE NEW DESIGNERS AND MAKERS CONFERENCE WILL RETURN WITH JOHN MAKEPEACE AS HEADLINE SPEAKER

Bespoke furniture studio Artichoke has announced it is to run its New Designers and Makers Conference for a second year, following the success of the inaugural event in February 2022. The event will be held in Cheddar, Somerset, on Friday 17 February 2023 with renowned furniture designer John Makepeace OBE as the event's headline speaker.

John Makepeace OBE will be the headline speaker at the 2023 conference

SHARING KNOWLEDGE

The primary aim of the conference is to bring designers and makers who already have experience running a business together with those who do not, and for the older generation to pass on some of their hard-earned knowledge.

The 2022 event covered topics such as how to charge properly for your time and how to create a powerful brand. The conference also heard from makers Alice Blogg and Charles Byron who shared how they had overcome numerous business challenges on their start-up journeys.

'We were surprised and delighted with the response we received after the first conference', said Andrew Petherick, a director of Artichoke. 'There is clearly a thirst for knowledge on these topics. Craftspeople are drawn to their craft by a passion for working with their hands, but rarely because they have a passion to run a business. Running one is what they inevitably will have to end up doing however, so it is in our best interest to bring the furniture community together and see if we can support young makers in this vital aspect of their furniture journey.'

The Artichoke New Designers & Makers Conference is sponsored by Axminster Tools and *Furniture & Cabinetmaking* magazine. There is a small charge of £10 for the day's event to contribute to the lunch and venue. Tickets are available from eventbrite.co.uk.

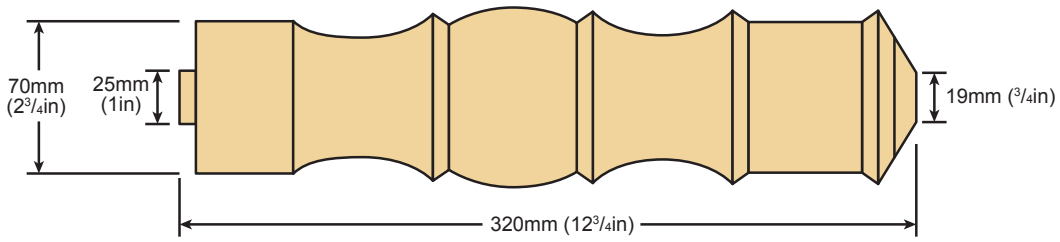
PRESERVING A FAMILY HEIRLOOM

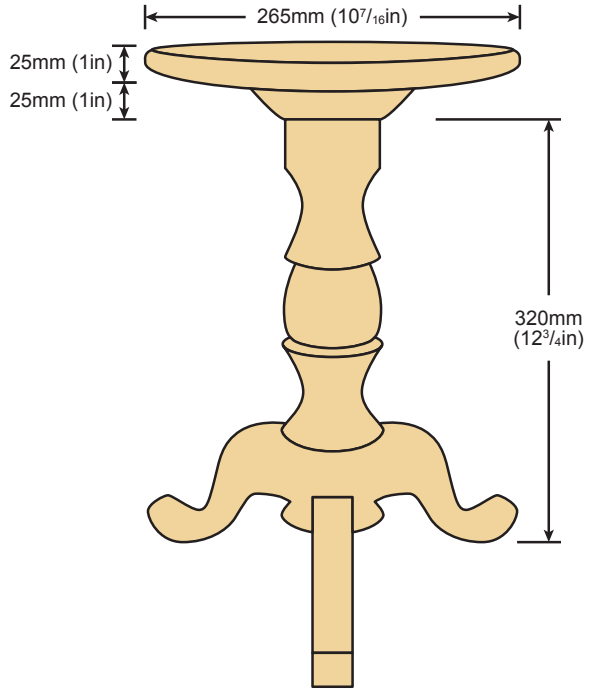
ANDREW POTOCNIK COMPLETES A FELLOW TURNER'S WORK TO PRESERVE A PEDESTAL TABLE

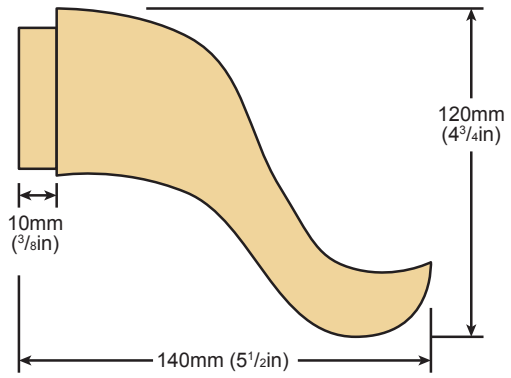
A friend called in to my workshop with a box of items his late father made while in retirement when he developed an interest in woodworking and became intrigued with the combination of turning and furniture making. After he passed away he left behind several partially completed projects and my challenge was to complete some of them so they could be passed on to his grandchildren as heirlooms. My task was to finish off components of a small pedestal table that combined turning and cabinet skills.

This job presented me with a rather delicate juggling act. I needed to work with a design aesthetic outside my own, yet I felt components needed to be tweaked to make them blend and form a table that was balanced once completed, without overpowering the original maker's personal style. I first needed approval from my friend to alter the design but not override his father's touch, after which I was off and ready to work, but constantly aware of not overstepping my limits and imposing personal tastes on those of the deceased and the heirloom significance of his work.

As you can imagine, the most difficult aspect of reworking an almost completed item lies in how to mount it for further modification. Lateral thinking comes in handy here, as does a bit of experience, so I began with the top and worked my way down to the three feet... gently.







THE ORIGINAL WORK

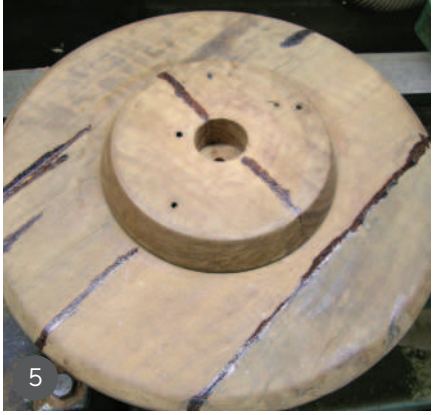
1 I began by examining the original pieces. These are the feet.

2 This is the original stem.

3 Here you can see the original table top ...

4 ... and the underside of the top.

PHOTOGRAPHS BY ANDREW POTOCNIK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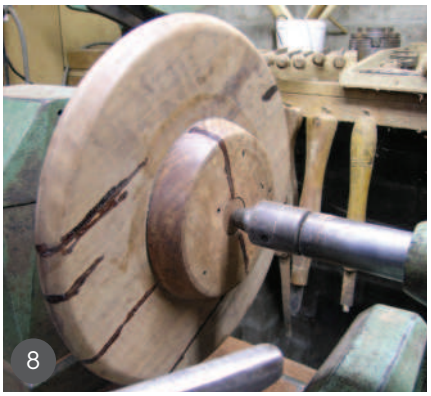
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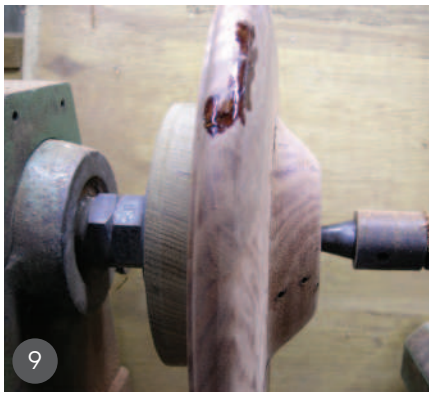
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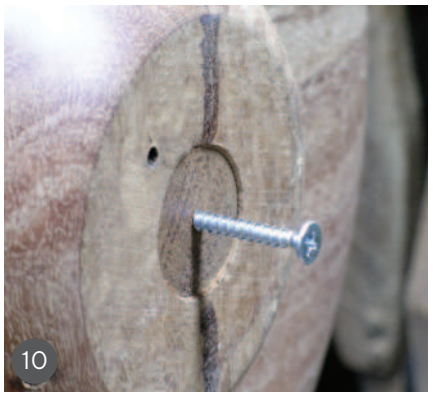
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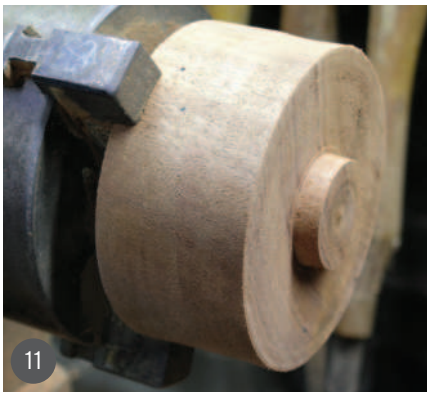
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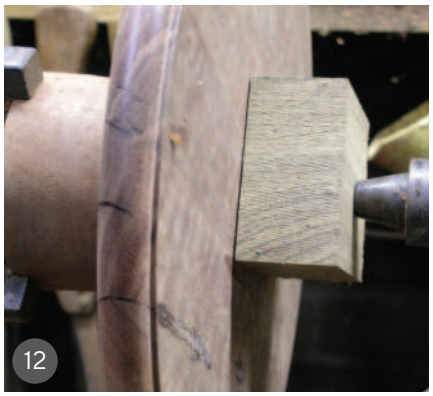
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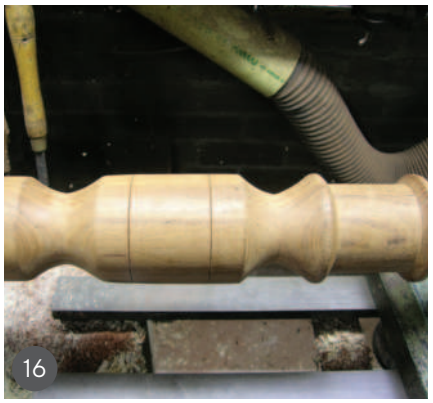
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MAKING REPAIRS

5 There were a number of cracks that I had to fill with CA glue, before deciding how I would mount the top. I also needed to figure out the most accurate method of finding its centre, and waste as little material as possible in trimming it down. There was a 25mm diameter hole already drilled to suit a tenon of the same size on the existing stem.

6 The solution was to turn a plug identical to the hole, then create a centre point before parting it free and inserting it into the hole.

7 A carrier fitted to a faceplate was mounted on the lathe, ready for the top to be held in place.

8 The tailstock was brought into position with the live centre fitting into the middle of the plug. Pressure from the tailstock was sufficient to hold the top securely centred in preparation for turning.

TURNING

9 The underneath and profile were reshaped and sanded smooth, replicating profiles of the existing design. This was simply a case of cleaning up what was already there and refining details – getting rid of tear-out, and so on.

10 Ready for the top to be reversed, a screw was driven into the plug so it could be removed with the aid of pliers. The force of the tailstock had actually driven the plug into a much tighter fit than I'd originally expected... another example of drawing on one's repertoire of problem-solving skills needed in situations such as this.

11 To remount the top so the upper surface could be cleaned up, I fitted a scrap piece of wood into a chuck and turned a 25mm spigot, in essence making another carrier to replace the tenon at the top of the table's pedestal. This is the key skill needed in this type of situation – figuring out how to remount almost completed components so they can be finished off.

12 With a support block held in place with the tailstock, I secured the table top so its upper surface could be flattened...

13 ... and sanded smooth. Checked with a steel rule for flatness, the final surface would be hand-sanded with a sanding block once removed from the lathe.

14 Remounting the pedestal was easy at one end, but at the other I needed to establish the centre of a round stub, ready to be held in place at the tailstock end of my lathe, so I used my finger gauge – two fingers and a thumb gripping a pen, sliding fingers along the perimeter of the stub several times until marked lines gave me an indication of where I could estimate the centre of marks and hence the centre of the pedestal.

15 Gripping the tenon was a much easier task. I mounted a scrap block of timber in a chuck and cut a recess of 25mm diameter, deep enough to accept the tenon already cut on the existing pedestal so once fitted between centres, friction would take over and allow the pedestal to be reworked.

16 The existing pedestal was now in place and ready for refining.

17 Here is the reworked pedestal with added details and refinements, keeping in mind my concern to not override the aesthetics of the original maker.

18 Sanded to completion, it was divided into three sections with the aid of the lathe's indexing head so mortises could be created to accept the three feet.

19 The feet had already been cut but were in need of refinement. The tenons needed to be trimmed on a bandsaw and the curves enhanced.

20 Unfortunately each of the tenons was of a different width but I opted to leave them this way as the thinnest was too thin for my liking and I was concerned about how strong the joint would eventually be.

21 The profiles were further refined on an oscillating spindle sander. The edges were eased and then rounded during the hand-sanding stage. It was time-consuming, but worth it as you can see from the improvements in the completed shape.

22 Mortises were drilled on a pedestal drill to remove as much waste material as possible. Note that a supporting V block was used to allow alignment of the wood and to prevent it from rolling while drilling.

The underneath and profile were reshaped and sanded smooth, replicating profiles of the existing design. This was simply a case of cleaning up what was already there and refining details – getting rid of tear-out, and so on.

23 The pedestal was returned to the lathe so the remaining material could be cleared from the mortises to accept each foot.

24 The shoulders of the tenons were undercut to fit snugly against the curved surface of the pedestal. I used a 25mm-wide chisel to keep the shoulders as straight as possible. Note the use of leather padding to protect each foot as I used an engineer's vice that has knurled steel jaws, which would otherwise have left indentations on the wood.

FINISHING

25 A finish was applied to all components before assembly. I like to use a wipe-on, wipe-off polyurethane finish; however, my friend's eventual reaction indicated he may have preferred a thick full gloss finish.

26 With the pedestal mounted between centres, each foot was glued into place using two-part epoxy resin. I glued them one at a time to ensure a neat fit, allowing gravity to hold them securely in place as the glue cured, rather than complicating the process with clamps placed at all sorts of odd angles.

27 With all the feet glued, only the top needed to be fitted to complete the job.

28 Throughout this project the original maker's style was at the forefront of my mind as I didn't want to overpower it with my own taste, just enhance what was already there. It's a difficult balance to achieve, but fortunately my friend was happy with the finished product. I too was pleased with it, so it could be called a win-win situation.

The shoulders of the tenons were undercut to fit snugly against the curved surface of the pedestal.

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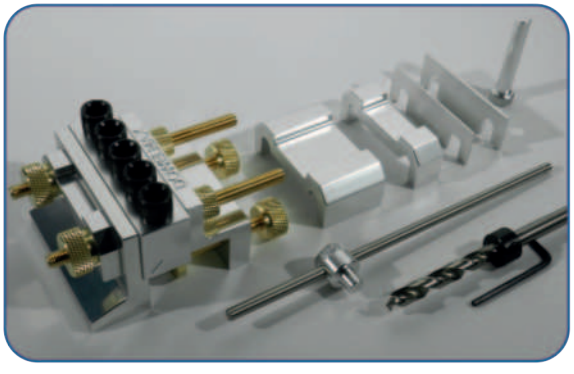

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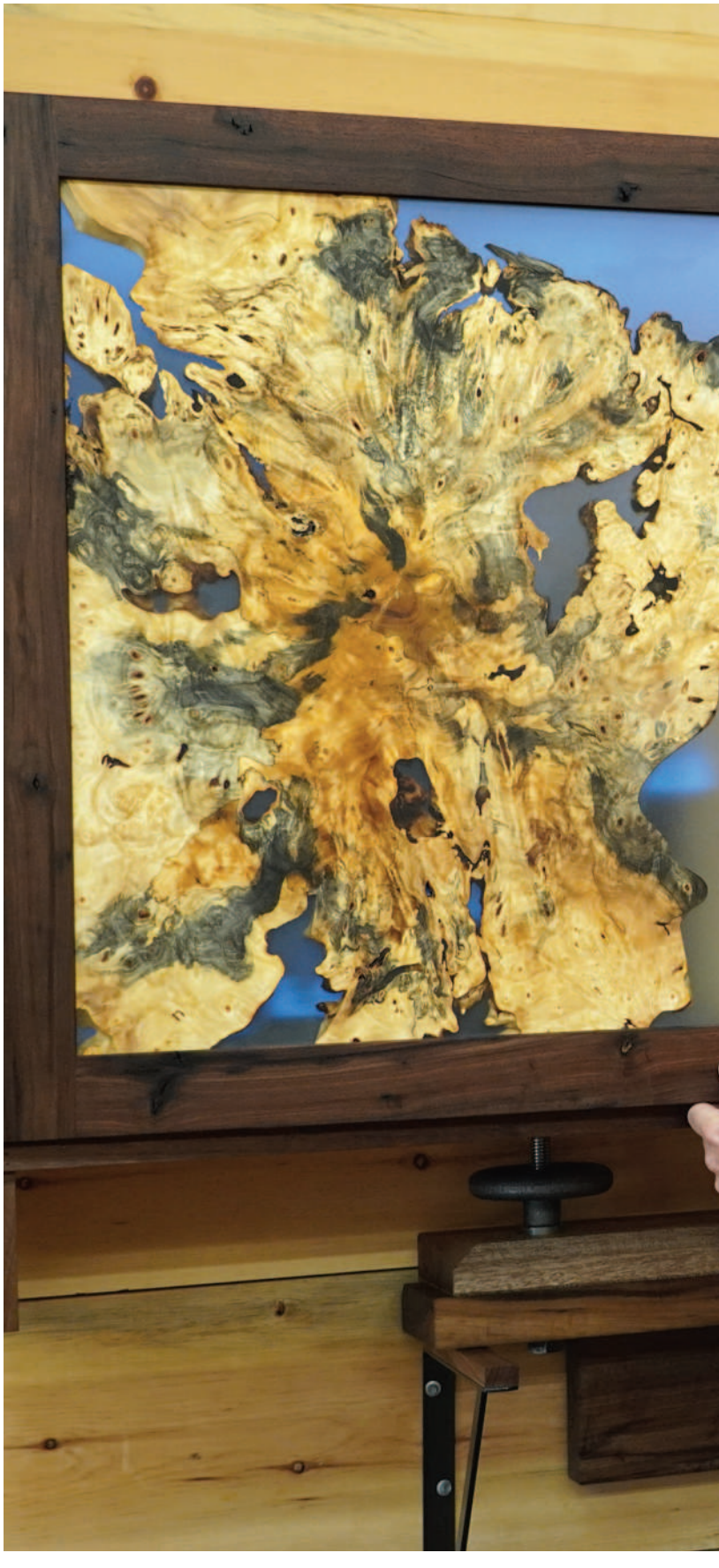
BUILDING A BUSINESS WITH A DIFFERENCE

CALIFORNIA-BASED **ALEX REYNAUD**, OF UNDER THE WATER DESIGN, IS BLENDING SOCIAL MEDIA WITH FURNITURE-MAKING TO CREATE A UNIQUE BUSINESS MODEL



Where are you based?
My shop is on my property in the little country town of Clovis, California. Well, it used to be country and little, but now it is a town of over 100,000. It is a great area, with fantastic schools and a great balance between rural and urban life. I was introduced to Clovis in 1995 when I moved to Fresno to attend Fresno State University. After college, I moved around a little for work, then found my way back to the area and settled right in.

How did you first get interested in furniture making?
A large portion of my life was lived with parents who flipped homes. My favourite family joke is that I never lived in a home for more than two years until I bought my own house. We lived in garages, campers and in sawdust for years. Don't get me wrong, it was a blast and there was always something going on. My Mom and Dad are talented and have built some amazing homes over the years. Finally, when I was out on my own, I bought and rebuilt a ranch-style home on three acres. The best part though, was that I moved my wife, daughter, dogs and cat into an RV for nine months while the house was under construction (I'm still happily married for 15 years). We had a ton of fun and still laugh about the funny moments years later. When this project was completed, I made the official statement: 'I am done with this and only making fine furniture from now on.' My wife's grandfather Leroy was a professionally trained cabinetmaker and would come over and check all my finished carpentry work, specifically the drawers, by slowly pulling them out, looking for issues, then closing them quickly. Many times, in his thick Italian accent, he would raise his right hand, touch his thumb to his fingers and say: 'That's a nice.' Then he'd test the next one, then the next one. He was an amazing mentor and was the last little catalyst that helped me commit to changing the way I thought about furniture. He has since passed away, but I always think he is watching me while I work in the shop.


UNDERWATER
DESIGN

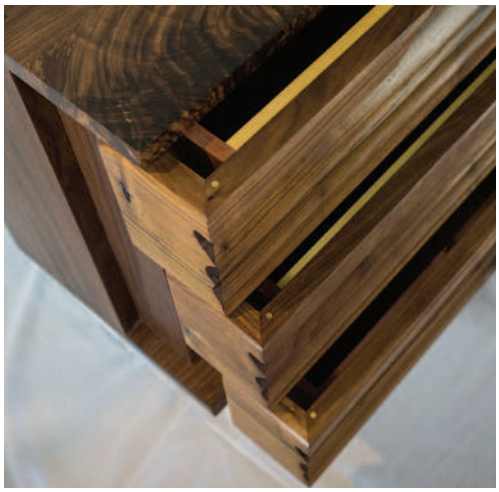
How did you train?
When the term train is used, I immediately think of years under the tutelage of a master, sanding for years, then learning to sharpen until all traces of fingerprints are gone, always a step away from failure and starting over. I am joking, but every time I went to Grandpa Leroy's shop I had to sweep and clean and couldn't get any advice until the shop was satisfactory! My education is a mix of in-person classes, lots of online courses, furniture magazine articles, books and an unwavering commitment to not fear failure. I am constantly learning, trying new approaches, pushing my comfort zone, creating new designs and always working on my hand tool skills. The people who have touched me the most in my ongoing education, just to name a few, are James Krenov, George Nakashima, Jory Brigham, Tyler Geitner, Austin School of Furniture, Gustav Stickley, Philip Morley, Rob Cosman, Ishitani, Paul Sellers, Matt Estlea, Matt Kenney and Kobeomsuk.

What was the first project you completed?
An entire home of custom cabinetry could officially be considered my first step into fine woodworking. The cabinet boxes are made from 7 ply, prefinished birch plywood with an MDF core. The face frames, doors and panels are made from hickory. All the drawers and doors are custom made to best fit their intended jobs with soft-close hinges, and finished with a weathered, rustic, walnut stain and a satin clear coat. Completing this was truly special at the time and, looking back, I can now have a good chuckle about how stressed it made me.

What made you decide to set up your own furniture business?
My business is in its infant phase right now and my primary focus is still on personal education and to design unique and exceptional pieces for the few generous clients I have connected with. My ultimate goal is to transition out of working directly with clients and into a virtual showroom environment. Building custom furniture, piece by piece, and working with clients is an extremely difficult environment to be successful in. I have an immeasurable amount of respect for those that are doing it and balancing their work, family and bills respectively. My business model vision is built around making a series of pieces that become available every six months, with smaller pieces every quarter. The showroom will be hosted within my website and my client base will be comprised of email and cell phone numbers of people who have expressed interest in my work. As pieces become available, an outbound contact campaign is executed to drive those potential customers to my virtual showroom. The supporting documentation and fine details of the lumber choice, how it was sourced, joinery, grain selection, finishing and additional details of each piece for sale will be available on my YouTube and other digital media streams.

What inspires you?
My business name is Under the Water Design, and this is derived from my deep love and personal history with the ocean. When I look at the ocean and the natural world within it, I see shapes, interconnections, relationships and a natural flow that












PHOTOGRAPHS: BLAKE MCFARLAND (@BMSCULPTURES)

I honestly prefer making furniture, without distraction, in my own world, peacefully attempting to make something exceptional.

lends itself beautifully to furniture, sculpture and art. It is my goal with each piece to try and bring those elements into play. Sometimes this works flawlessly, and other times not as well. It is a journey and I have much to learn still.

Which woods do you most like working with and why?
A large majority of my pieces are walnut, specifically claro, English and black. When I have the time and the chance to make something really special, I work with bastogne walnut. This lumber I source locally from the walnut orchards and it is milled by a friend of mine. Bastogne walnut is a hybrid of claro walnut and English walnut. It is purposely grafted to provide orchards with the best of both trees for nut production in my area. It is incredibly dense, heavy and unmatched in figure. It is difficult to work with because of these properties, requires sharply tuned tools and therefore I try to only use it when making smaller pieces of high visual demand. However, I am currently breaking all my rules and making a huge coffee table out of a single slab that started at three-and-a-half inches thick. I can barely move it around and have taken it to my local mill twice already for surfacing as I prepare it to dimension. This specific piece is to show at our local fair, hopefully win best in show and then it will reside in my home. The other woods I work often with are quartersawn white oak and quilted maple.

Tell us about your workshop.
My shop is 24 ft long by 22 ft wide by 15 ft tall – 528 sq ft. The shop is segmented into three primary work areas: first the tablesaw and production bench area; second the hand tool bench – Sjöbergs Scandi Plus – and hand tool cabinets area; and thirdly the welding table. I have the shop laid out so that I can move my bandsaw, planer and jointer into the open areas in the middle of the shop when I am milling lumber. I try to not repeat steps when working on pieces and allow ample time for lumber to move before final milling. This way I can keep my tools set up specifically for the project I am working on and can hopefully avoid milling mistakes. Inside my production bench, I have a 4 by 4 ft CNC and the rest is for storage. My carpentry tools are all Festool. Inside my production bench is a secondary vacuum system that runs all my Festool tools, so I can keep everything highly organised and keep tools out of the way when I don't need them. I actually don't like having all my tools out. Everything, for the most part, has a dedicated space in drawers or cabinets in my shop. The less that is out, the less cluttered my mind is and I can stay focused on the task at hand.

How does your design process work?
As odd as this may sound, I actually like to start with the joinery. For me, if I can make the joinery interesting to the eye and structurally valuable, then I want to take full advantage of that opportunity. I will start to then move outward and look at the piece from a 360-degree view, determining where fundamentals are required and where the rules can be bent to create an original piece. This is an area I have learned that is never mastered, and there is no ending. It is an open world to explore, and the best way is to simply build stuff and mess up. I learn more from trying odd ideas that turn out to be a disaster than from just regurgitating what already works.

Tell us about your YouTube videos.
Developing a portfolio on YouTube, in my opinion, offers financial advantages and a unique transparency of your work to prospective clients. I wasn't necessarily sold on the idea of shooting video at the same time while working, as I believed it would adversely affect my work. However, with a little practice, a significant level of commitment and forethought, it is now starting to flow well. I will say though, it makes the process of completing a piece painfully longer. The other, unspoken aspect of shooting video is editing. This is a tough skillset to learn and something that I am working on and getting better at with each new video. I look at YouTube as part of my long-term revenue stream. When thinking long term, what happens to my revenue if I don't have a commission to make and sell? Or I want to take a break and work solely on design? YouTube, digital media, social media, brand relationships, blogging, ads and sponsorships are part of the bigger equation to developing consistent income. I have a long way to go to reach my goals, but I have a plan and am taking it one day at a time.

Do you prefer making videos or furniture?
If you had asked me this three years ago, I would have unequivocally said furniture, and most likely scoffed at the idea of video. But now I often look back and say to myself: 'What would my YouTube, brand relationships, revenue stream and so on look like today if I had those 20 to 30 custom pieces all fully filmed, properly photographed and uploaded?' It is an interesting question to ponder and find balance between moving forward. Fortunately, the people I am building pieces for are fantastic and it makes the process of shooting video and adding weeks to a build less stressful. But I honestly prefer making furniture, without distraction, in my own world, peacefully attempting to make something exceptional.

@underthewater_design

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THE ELASTIC CHAIR – PART 2

FRANCESCO CREMONINI COMPLETES HIS CHAIR BY MAKING THE SUPPORTING STRUCTURE IN SOLID WOOD AND THE CURVED VENEERED LAMINATIONS

In the first part of this project (see *F&C* 307) I assembled and shaped the sides of the chairs and made the joints for the front and rear crosspieces, with which the bases were completed. To finish the chair, I still had to make the supporting structure and the curved veneered laminations.

JOINING THE PIECES

Although the front and rear crosspieces had been made, I didn't glue them yet. There were a couple of good reasons not to do that at this stage: the first concerns the levelling of the support points on the ground; this step is often done at the end, but it is convenient to automate it if you are working on a series of chairs, as I was, rather than a single piece. Taken individually, the sides can be blocked on the squaring jig so that both the front and rear legs can be easily trimmed to length in a single step.

Secondly, as long as they remain separate, the sides can also be finished all at the same time, so it is advisable to postpone gluing on the missing crosspieces. The larger surface that is created with them stacked together allows you to work with the sander and scraper without the risk of rounding the sections. Proceeding in this way means you can also be sure of obtaining identical shapes by making sure they are square to each other.

Once the work was completed on the ends, the sides could be placed side by side in pairs to smooth the larger surfaces. Also in this case, the arrangement served to increase the support surface of the power tool and prevented errors, which it was vital to avoid at this stage of construction.

The final touches on the sides concerned the sharp edges, which were first smoothed along the perimeters with the router table, making sure to skip the upper profile of the crosspiece, and then around the feet, where I worked by hand with a block and abrasive.

At this point I could glue up the missing crosspieces. To ensure the best joint strength the glue had to be applied to all surfaces in contact. I made sure that all was square, and, in this case, there was no problem with just using four clamps.

THE LAMINATIONS

The supports of these chairs are made up of a curved lamination of two veneers that cover a flexible plywood substrate: in two sheets for the backrest, in one only for the seat. The final appearance of the two pieces is achieved by gluing the layers together and pressing them in a vacuum against forms. In the previous article, I explained how I prepared the pieces that allow me to assemble the forms themselves; I can now focus on the preparation of the material, in particular on that of the veneers.

The first consideration was the number of sheets to be placed side by side in order to reach the pre-set measurements for the seat and backrest. Their width is different, but the continuity between the two elements is a feature of this project. To obtain the best effect, it was better to define a common central axis and use the same even number of veneers: two, if the width of the material allowed it, or four if not. With this decision made, the veneers first had to be cut, leaving about a centimetre of tolerance on the final length of the panel, then trimmed on one side and then, parallel, on the other. For the first operation the veneers were worked in a block with the mitre saw, and for the second, I used the saw bench, where it was safer to limit the overlap to two to four sheets (depending on the thickness of the material which can vary by 6–10 or 20 tenths of a millimetre).

Once the preparation was complete, the veneers could be joined together on the underside using veneer tape. While the backrests expose both sides to view, the chair seats have a hidden side that allows the leftover veneer from previous processes to be recycled. From the new sheets obtained by joining, the dimensions to cut the flexible plywood substrate were obtained, allowing an excess to be able to finally square the laminations.


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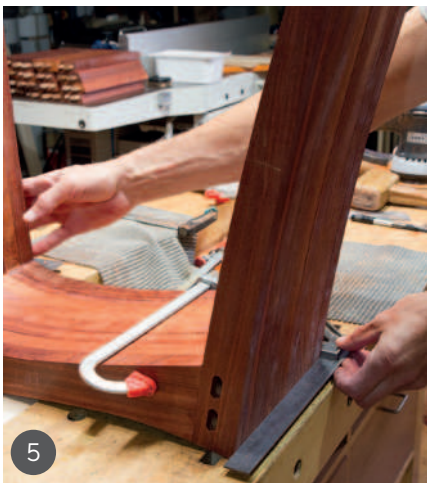
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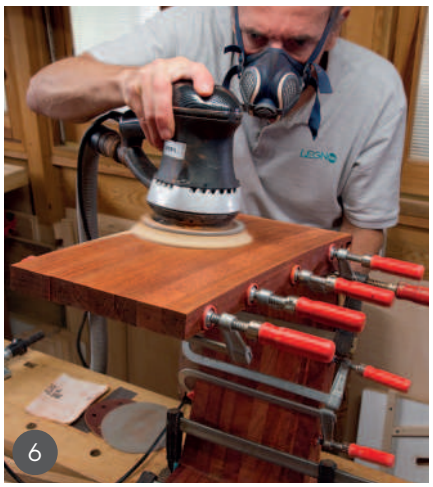
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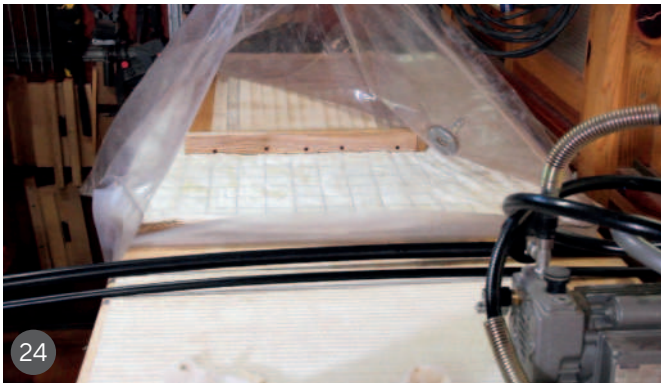
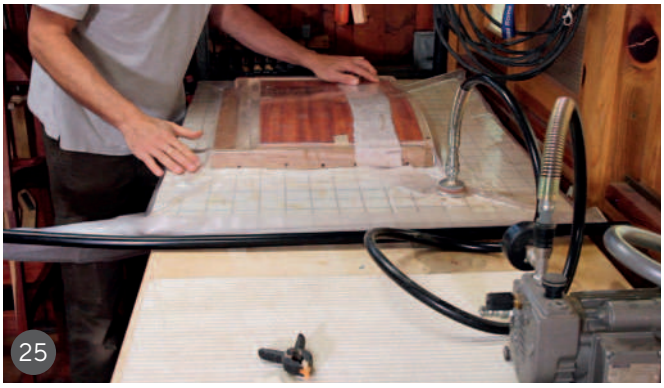
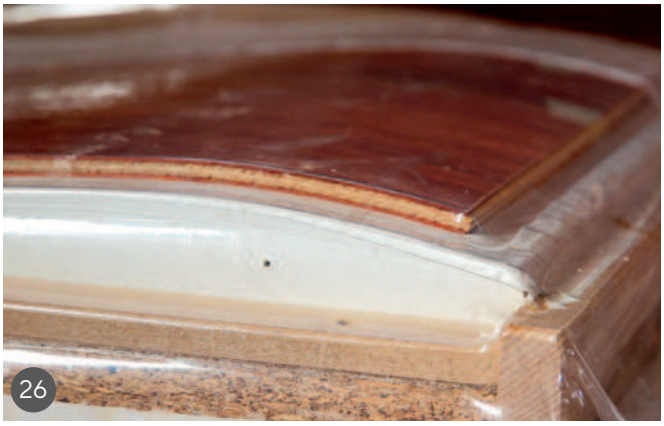
1 There was no need to take measurements as the length of the legs had already been established with the prototype and I could quickly trace its shape **2** The angle of the side was marked on a piece of plywood placed next to the saw's fence **3 & 4** The piece was shaped and prepared against the fence; that allowed me to repeat the positioning and cut off all the pieces, so they are exactly the same **5–7** By stacking and clamping the sides together, the support surface for the tools was increased and I couuld work without risking while rounding off the sections. However, it was essential that the sides of the assembly were well squared with each other so as not to cause discrepancies between the outermost sides **8** The most critical point is the joint between the front leg and the crossbar: it is essential not to round the corner, otherwise it would become impossible to obtain a gluing line with the seat above **9** The joins on the eight corners look just as if the parts had been individually shaped and then fitted together, the rounded lower corner supplements the curves, giving continuity to the lines **10** To smooth the larger interior and exterior surfaces and offer a wider support on the legs, the sides were worked in pairs **11** The seat will be glued to the upper edge of the crosspiece and the edges must therefore not be rounded **12** The bevel on the feet has a practical function as well as an aesthetic one; protecting them at the bottom with felt pads, the feet are the parts of the chair most exposed to shocks, a generous bevel makes them more resilient **13 & 14** I glued the crosspieces, ensuring they were square, and clamped them with four clamps **15** The veneers were cut to length with the mitre saw, but had to be processed in a block and pressed between two sheets of sacrificial material so as not to tear them with the blade



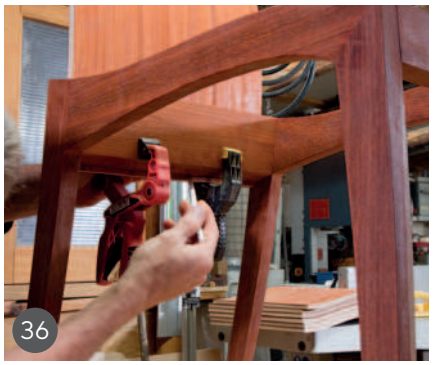


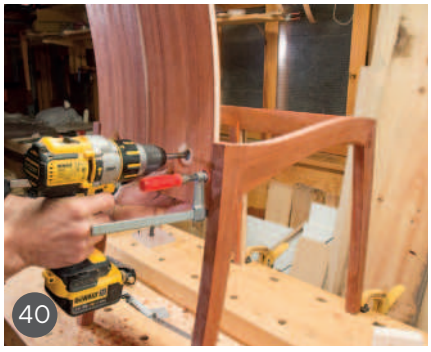
PHOTOGRAPHS BY FRANCESCO CREMONINI/LEGNO

16 When the capacity of the machine was not enough to perform a complete cut, a second step was done with a hand saw
17 & 18 The veneers were trimmed on one side and then brought to the final width with the tablesaw, on the opposite side. Having the top flush with the blade and against the adjustable side fence allowed me to set the size and prevent the thin material from tearing down when cut
19 Even when using a board to squeeze the material down, to make sure that all sheets are smoothly flat against the stop, it was best not to process more than three or four veneers at a time **20–23** The glue setting times did not allow for hesitation, I needed to organise the work well and proceed systematically. For the backrests, the two layers of plywood first had to be glued together, followed by the external veneers
24–27 The breathable fabric placed over the lamination facilitates the evacuation of air and keeps the pressure on the surface constant



28 Cutting the first side could be done with light passes on the planer, but the knives had to be well sharpened so as not to tear the end fibres of the plywood. Where a clean edge could not be obtained, the subsequent trimming on the tablesaw had to be carried out on both sides **29 & 30** On the second side the panel was cut on the tablesaw by resting the shaped section at two points and at the end of the cut it was rotated upwards **31** The third side was cut with the tablesaw. In order not to tear the veneer fibre on the underside, a first incision was made with the saw blade just touching the panel **32** The blade was then raised in the second step with which the front side of the seat is squared **33** To ensure stable support, the seat rests on the back of two pieces borrowed from the frame shape. The cutting angle was about 10° **34** The recess for the back was roughly cut, allowing some excess to be trimmed later, with the jigsaw





35 To avoid the disastrous effects that can be seen on this scrap strip, it was good to pre-cut the veneer with a knife **36** The backrest, trimmed on the two longer sides, was inserted between the back legs to adjust its vertical position. I then marked the point at which to square it and set its height **37 & 38** After being squared on the lower side, the first backrest was used as a template on the following ones so the curves of the backrests would be the same height on all the chairs **39–41** To prepare for fixing, two shallow drillings and two concentric through holes of a smaller diameter were made on the backrest. The centres were then transferred to the rear crosspiece, where a shallow depth and a through hole were made for each position; in the second machining a drilling template was used to keep the drill perpendicular to the surface **42–44** With a punch and a knife, the non-slip double-sided tape discs were prepared; these prevent the nuts from rotating when tightening the screws from the inside **45** The template for the backrest arch was made from a piece of MDF on which, using a compass, the profile had been cut. A stop was screwed at the bottom which allowed for square positioning

46 & 47 The arched shape at the top of the backrest was shaped using a two-step cut by rough cutting with the jigsaw and then finishing with the trimmer **48** Here you can see how the pre-cutting prevented the grain from splintering
49 To prevent wood splintering, you can make a preliminary cut with a knife or cutter along the cutting line

The subsequent gluing and pressing phase required cleaniness and speed: after having prepared the sheet layers with the two sheets of veneer oriented in the predetermined way, the glue was applied on the first side of the plywood, the relative veneer was placed on top, then the operation was repeated on the opposite side. In the case of the backrests, the sequence was preceded by the application of the glue between the two plywood sheets of the internal layers. At the end, the position of the layers was immediately stopped, and everything was put into the vacuum press.

Since these are curved surfaces, it was prudent to prolong their time in the press for about three hours and let the laminations rest for the night before working on them.

THE SEAT

The day after the pressing, I brought the seats to the final measurements. I started this process by planing one of the two long sides flush. Using this as a reference, I then moved to the tablesaw, where I trimmed the opposite side and then squared the front edge. Both processes were made more critical by the shape of the panels, in particular the second, so I used a couple of other shaped pieces to give support while cutting the seat.

The back side of the panels was processed differently. The geometry of the chair means that the seat holds the back laterally, so I had to make a cutout along that side. The cutout was initially traced after centring the seat on the base of the chair, and then cut with an excess safety margin using the jigsaw. The work would then be finished later once the seat was glued.

THE BACKREST

The backrest was processed in the same way as the seat. The first cut with the tablesaw had to be done more carefully because there were no margins: the panel had to be able to be inserted without play between the two rear legs. The lower side had to be squared off, taking account of the angle given to the rear crosspiece, this time working with the visible face upwards and the end that flattens on the carriage so that I didn't have to pre-cut the veneer.

Once the work on the third side was finished and before moving on to the fourth, the backrests were bolted to the rear crosspiece of the chairs. The system uses two large turned nut screws for which the holes in the backrests had to be made, using the drill press for drilling both the bottom and the clearance hole. Each panel was then repositioned in its base to transfer the drilling centres to the rear crosspiece.

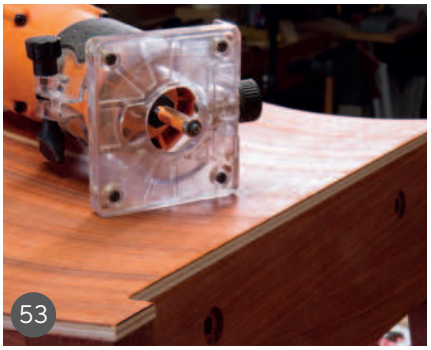
Once the holes on the base had been drilled, I tested the fixing. The backrest would be locked only in those two points and I needed to be able to tighten the two M8 screws that were inserted from the inside; the nut screws do not offer external gripping points and to ensure that the two components do not rotate while the back is tightened, their internal washer had to be coated with non-slip material.

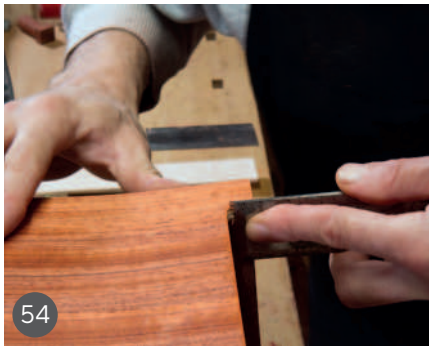
The last procedure on the backrest was carried out on the top, where a slightly accentuated arch was created in two stages that recalls the curves of the base. To make this, I needed a template which, in addition to providing the shape, incorporated a stop that allowed me to copy and machine the arch square with respect to the vertical sides of the backrest.

After tracing it, the arch was roughly cut with the jigsaw and then, using the template, cut to size with the trimmer. In both cases I took the necessary precautions not to chip the veneer, given the visibility of this part of the chair.

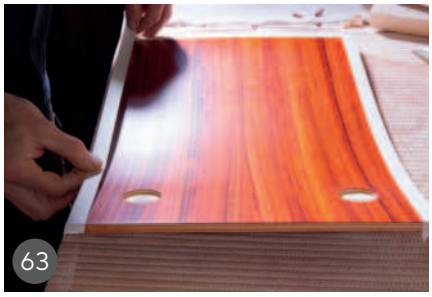
PREVENTION IS BETTER THAN CURE

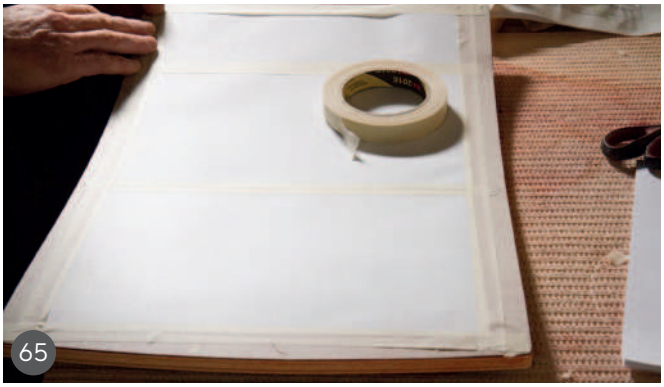
Cutting the wood grain sideways often involves the risk of it splintering at some point. In these cases, if the proper precautions are not taken, the work can turn into a disaster that is difficult to remedy. There are two simple methods that can be put in place to mitigate the problem, if not to completely eliminate the risk. The first solution consists of making a preliminary incision with a knife or cutter along the cutting line. This is the best method and completely prevents the problem, but it is not always possible. In the processing of the curved cut of the backrests, for example. However, it can be easily adopted on the front side but less so on the rear side. In such a situation the damage can be limited by sticking paper tape along the cutting line. In this way the wood grain tends to rise less, and consequently to chip, while being cut.





50 Another solution is to stick paper tape along the cutting line **51** After gluing along the entire upper perimeter of the crossbars, the seat panel was centred on the base **52** A good number of clamps and the use of flexible plywood strips allow the seat to be clamped evenly **53** The U-shaped profile of the back of the chair was cut using the bearing cutter **54** The two internal corners were then squared with a chisel **55** With the sander, the edges were smoothed at the base and the seat was finished **56** The second operation was more delicate: the curves had to be done by continuously moving the sander, taking extra care near the edges where the risk of sanding through the veneer, and uncovering the plywood, was high **57 & 58** The large diameter of the holes for the nut screws could cause a problem while sanding the back of the backrest; to prevent the sander's pad from getting stuck and digging around the wood, I filled the holes with two discs of the right thickness **59** The ribs and edges of the backrests were sanded exclusively by hand using blocks covered with abrasive cloth **60** The finishing began on the inside of the crosspieces, covered the underside of the seat, up on the crosspieces and from there on to the legs **61 & 62** By inserting two bars in the holes for the backrest, the base could be turned over and then, once the seat was sprayed, left to dry





63 & 64 Masking one of the two faces before spraying the other was important for obtaining a smooth finish on both. To do a good job, the perimeter first had to be defined with the tape, carefully laying it along the edges **65** Filling in the masking could then proceed faster with paper **66** A good thickness of finish meant the surfaces will be well protected and resist the wear and tear that act incessantly on a chair used under a dining table

JOINING AND MAKING ADJUSTMENTS TO THE SEATS

Once the work on the backrests had been completed, the seats could finally be glued to the bases. This work presented no surprises, but many clamps were required to apply constant pressure along the entire perimeter. Strips of flexible plywood placed under the jaws meant that no clamp marks were left on the pieces and also helped prevent the clamps from slipping in the places where the curves are more pronounced.

After letting the glue dry for one night, I completed the work on the back side of the seats. By mounting a bearing cutter in the trimmer, the edge was cut following the U-shaped profile formed by the rear crosspiece and the two legs that surround it. With a chisel, the two internal corners that the cutter could not reach were squared off at the end.

SANDING FOR FINISHING

Having already sanded the bases of the chairs, the next step mainly concerned the seats and backrests. The former had to be brought perfectly flush with the crosspieces, using the trimmer where the surplus was large and the sander elsewhere where the surplus was less, and then bevelled by hand along the perimeter. The finishing of the main surface of the seats was entirely done with the sander using a light touch; the veneer was thin, so I had to be very careful not to spend too much time on the edges following the curves and sand through the veneer, especially in the initial phase when the abrasive grain was coarser.

The attention to sanding detail was practically the same for the backrests. I prepared two discs to close the fixing holes in order to prevent the sander from getting stuck and digging the veneer around them.

FINISHING

Chairs, in general, are the most used and abused furniture of all and the finishing has to take this into account. The application of a good thickness of a synthetic product is an indispensable requirement to protect the wood from shocks and the effects of humidity, and to adequately close the grain so as to make the surface smooth and easy to clean. For a finish of this type, the airbrush is the most suitable application method.

The surfaces were machine-sanded up to 220 grit, then two water-based primer coats were sprayed on, interspersed with 320-grit sanding. This was followed by a spray application of a transparent water-based opaque finish.

The design of this chair greatly helped the finishing phase as the backrests could be disassembled and treated separately, and the base alone was much more manageable. Using a Lazy Susan and a couple of bars through the holes for fixing the backrest to help manoeuvre the chair, the base was sprayed at the bottom, resting on the seat, and then turned over to complete the finishing of the top.

Proceeding in this way, the surfaces remained wet until the last one was done, so overspray was not a problem. For the backrest, the finishing was done in two steps, front and then back; for this reason, it was essential, after drying, to mask the finished parts first and only then proceed with the other.

UNDER THE HAMMER – 20TH-CENTURY CHAIRS

BONHAMS' MODERN ART & DESIGN AUCTION IN LOS ANGELES FEATURED ART AND HOME FURNISHINGS FROM ICONIC 20TH-CENTURY DESIGNERS AND DESIGN MOVEMENTS. HERE, WE TAKE A CLOSER LOOK AT SOME OF THE TOP-SELLING CHAIRS

▲ LOT 137
US $22,950 (£19,938)
Pair of Gazelle lounge chairs, with patinated bronze frames and cane seats. They were made circa 1958 by Dan Johnson (1918–79), an American designer who developed the Gazelle series while working in Rome.

▲ LOT 152
US $14,025 (£12,177)
Hand Foot Chair, made from carved and lacquered mahogany. This unusual piece was made circa 1975 by the Mexican surrealist artist and designer Pedro Friedeberg (born 1937).

◀ LOT 227
US $3,825 (£3,322)
Set of four dining chairs in birdseye maple, made in 1986 by American designer Roy McMakin (born 1965).

▲ LOT 83
US $7,650 (£6,666)
Teak and oak valet chair made in 1953 by designer Hans J Wegner (1914–2007). Known for the 'organic' lines of his furniture, Wegner helped to popularise the Scandinavian mid-century modern style.

▲ LOT 86 • US $7,650 (£6,666)
Pair of teak horseshoe armchairs. They were made circa 1960 by Danish designer IB Kofod-Larsen (1921–2003) for the Selig Manufacturing Co, an American firm that introduced many Scandinavian designers to the US market.

▲ LOT 173 • US $7,650 (£6,666)
Pair of pine chairs, made circa 1985 by Mexican architect and designer Antonio Attolini (1931–2012).

▲ LOT 144 • US $10,750 (£9,340)
Set of four Klismos walnut dining chairs, designed in 1961 by TH Robsjohn-Gibbings (1905–76) for Saridis of Athens, a manufacturing company based in Greece. Robsjohn-Gibbings was an American furniture maker who reinterpreted classical Greek designs for Saridis. The klismos was a type of chair used in ancient Greece, often depicted on painted pottery and bas reliefs.

PHOTOGRAPHS COURTESY OF BONHAMS

CARD TABLE RESTORATION

MICHAEL HUNTLEY BATTLES WORMHOLES AND NON-REVERSIBLE GLUE TO RETURN THIS 19TH-CENTURY TABLE TO WORKING ORDER

This walnut card table arrived at my workshop in the month of May. May is a prime time for female woodworm to be laying eggs, so before it went into the workshop I treated it with Constrain woodworm fluid. The table had arrived in a plastic bag – literally! The client was afraid of re-infestation. After spraying, the next job was to take photos of all the loose bits in order to record them.






PHOTOGRAPHS BY MICHAEL HUNTLEY

1 The central board from the underside of the table **2** Note the pen marks from a previous restoration on the underside of the board
3 The table base, with added packer **4** The exact location of the centre board on the block
5 The interior of the well from the underside. The bolt around which the top swivels can be seen on the left **6** The old surface timber I selected

INITIAL INSPECTION

The central board of the underside of the table was too badly wormed to save. It had also been marked with a pen during a previous restoration. Had the client been willing to pay for it, I would have cut the board down the middle and glued each exterior face to a strong piece of ply to make up a sandwich with the correct exterior faces still showing. As it was, I had been asked to replace the board and, as there was no great historical merit to the table, I did what the client asked.

Earlier restoration work on the table base added a further complication – note the added packer on the far side of the block in photo 3. That shouldn't be there, but the previous restorer had felt it necessary. As the table was too badly damaged to assemble, I had to wait until my repairs were complete before I could find out why he put the packer there.

There were many old screw holes in the centre board and I had to guess which ones might be the correct ones to use. Frustratingly, the pen marks did not help with this job in any way. Once I had solved the puzzle, I numbered up the screw holes – using a pencil – so that the table could be reassembled easily and correctly. When you are deciphering how to assemble something, the witness marks – shading, scratches, nail and screw holes, even dirt – can be essential. This is why you do not clean the piece first – you may remove vital evidence. And it is bad practice to alter original positioning unless it is absolutely necessary.

I remember being hauled over the coals when I rebuilt an original joint that was the wrong type of joint for the job. My mentor told me that I should have left the historical joint, even though it was of the wrong type. The only justification for changing it would have been if it had been dangerous.

The swivel mechanism on card tables is often very simple and even crude, but note that the swivel for this sort of table is not in the centre of the sub-frame – it is to one side in order to give the best point of balance.

You need to have a good supply of old surface timbers with restoration work for the times you need to replace sections of the original. Find the best match that you can and rough it out, then offer it up and cut to the exact dimensions. Don't just measure the rectangle and cut your replacement square; the likelihood is that nothing is square! The black tinge on the underside of my replacement timber can be reduced later on and on the inside the colour looks really good. This is the most important side to match as, although we will be working on the outside – underside – it is the appearance on the inside – seen when the top is lifted – that matters.

The baseboards next to the centre board were worm-damaged but could be kept. Their presence confirms the authenticity of the piece, which helps it retain value. A restorer or conservator has to consider both the requirement to use the item and the requirement to retain its authenticity and thus its value.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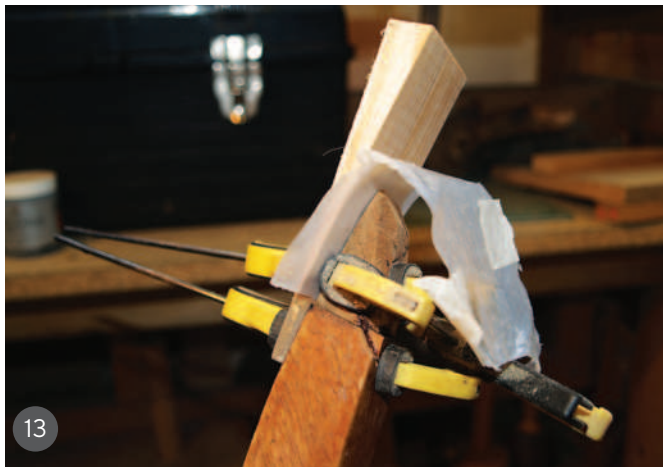
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THE CENTRAL BOARD

I have a collection of tiny pliers and nippers to pull out old nails and pins, and some useful advice: allow the ends of the nippers to become slightly blunt so that they don't cut through what you are trying to extract. I used these to remove the nails that held the boards in the rebate, storing them safely. Two styles of nails had been used, as shown in photo 8. I reused the older, original nails on the left; the three on the right are 20th-century wire nails.

I removed the boards gently and cleaned them of old animal glue, without leaving any tide marks remaining. I then glued them back in place with fresh animal glue, taking care to glue up the splits as well, using weights to hold twisted boards in place while the glue cured, before re-nailing.

A bench vacuum cleaner is useful to keep the area clean of chips and frass. A clean surface makes it easier to find any little chips that pop off and need to be reattached, but make sure you don't vacuum them up. Bench discipline is really important here when there are tiny shards of friable timber everywhere.

The next task was to trim the new piece of timber to size and cut the rebate. With this done, I glued it in place. If you're working on a job like this that needs to match the original work, you should do this work by hand, or at least finish it with a skim from a hand plane.

THE BASE

The next thing to do was repair the broken foot. It was a complex break and made worse by the fact that the screw holes for the castor body practically cut the foot in two.

Because there are no dead flat surfaces, it was necessary to introduce a wedge to ensure the clamping pressure didn't push the foot off. The paper you can see in photo 13 is an old cereal packet liner, which prevents the wedge getting stuck to the foot. I used hot animal glue here because it is easy to clean up, reversible and doesn't affect the colour or polish.

One whole leg was loose so I injected cold animal glue and clamped it up. The void in the sliding dovetail was huge. A previous restorer had glued the leg in without getting the joint to close up properly and had used a non-reversible glue to complete the job. The glue-up had failed because the leg was loose, but I couldn't get the leg out so all I could do was fill the void with reversible glue and sawdust – not an ideal repair, but given the state of the table and the budget, totally applicable.

Complicated clamping arrangements were required to get centralised equal pressure. I used masking tape to stop the glue running out and a sheet of paper over the upturned block to avoid glue staining.

The gilded collar on the table was dirty and chipped and the base fly-spotted. A soft-bodied brush removed the loose dirt from the gilding. A good tip is to not try to wash gilding – just brush it. Cleaning gilding is a whole other subject!

Repairing the chips had been discussed with the client beforehand, but there wasn't the budget required. I removed the fly spotting with white spirit, and I painted out a big scratch on the column with pigment and polish.

FINISHING

There was a big crack across the width of the table top. I had agreed with the client that it could be filled and coloured. This involved first applying filler, then applying repeated coats of slightly different-coloured polish with a brush to fill the gap, then cutting the excess back, then repeating the process for about two weeks until a satisfactory finish had been built up.

Finally, the table – minus the plastic bag it arrived in – was returned to the client.

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7 My collection of pliers and nippers, shown with nails for scale **8** The two nail styles used: original on the left; 20th-century wire nails on the right **9** Note the use of weights to hold twisted boards in place while the glue cures **10** Trimming the timber patch **11** Cutting the rebate **12** The messy break at the foot **13** Clamping the foot while the glue cures **14** Filling the dovetail void with sawdust and animal glue **15** The complicated clamping system to secure the loose leg **16** Gently brushing the gilding **17** The crack in the table top as the polish is built up and before cutting back **18** The result of building up and cutting back layers of polish

PHOTOGRAPHS COURTESY OF THE BOAT BUILDING ACADEMY

FURNITURE FROM THE BOAT BUILDING ACADEMY

WE SHOWCASE THE FINAL PIECES MADE BY THE FURNITURE-MAKING STUDENTS AT THE DORSET WOODWORKING SCHOOL

The Boat Building Academy is a world-leading training college at the heart of the Jurassic coast in Lyme Regis, Dorset, founded in 1997. The Academy is a member of British Marine and an approved City & Guilds centre.

As well as its flagship 40-week Boat Building course, the Academy also offers a 12-week Furniture Making course with its own dedicated workshop, aimed at aspiring professionals and serious amateurs. Here, students learn how to design and make furniture, progressing from sharpening their tools all the way to designing and making a final project piece of their own choosing. Project pieces include a variety of chairs and benches, a tool chest and a selection of coffee and console tables. Students can also opt to undertake a level 3 qualification. The final pieces from the most recent graduates are showcased on these pages.

Shorter two to five-day furniture-making courses are also available, which serve as a perfect introduction to the skills covered in the longer courses and beyond. People can try their hand at traditional wooden boat building, woodworking skills, antique furniture restoration and marquetry as well as the popular sail making and ropework courses. A full list is available on the Academy's website.

boatbuildingacademy.com

ABOVE FROM LEFT TO RIGHT

Ash bar stool made by Jonathan

Soft sitting desk chair, with a solid wood looking appearance made by Naz

Oak library steps with an ash bend detail on the side made by Sam

OPPOSITE Luke's surf bar stool

OPPOSITE Japanese-inspired screen, with a beautiful marquetry design, made by Sophie
TOP LEFT Meditation chair, made of London plane reused timber; designed and made by Ben
TOP RIGHT Fraser with his birch plywood and ash telephone chair **ABOVE** Beautiful box made by David

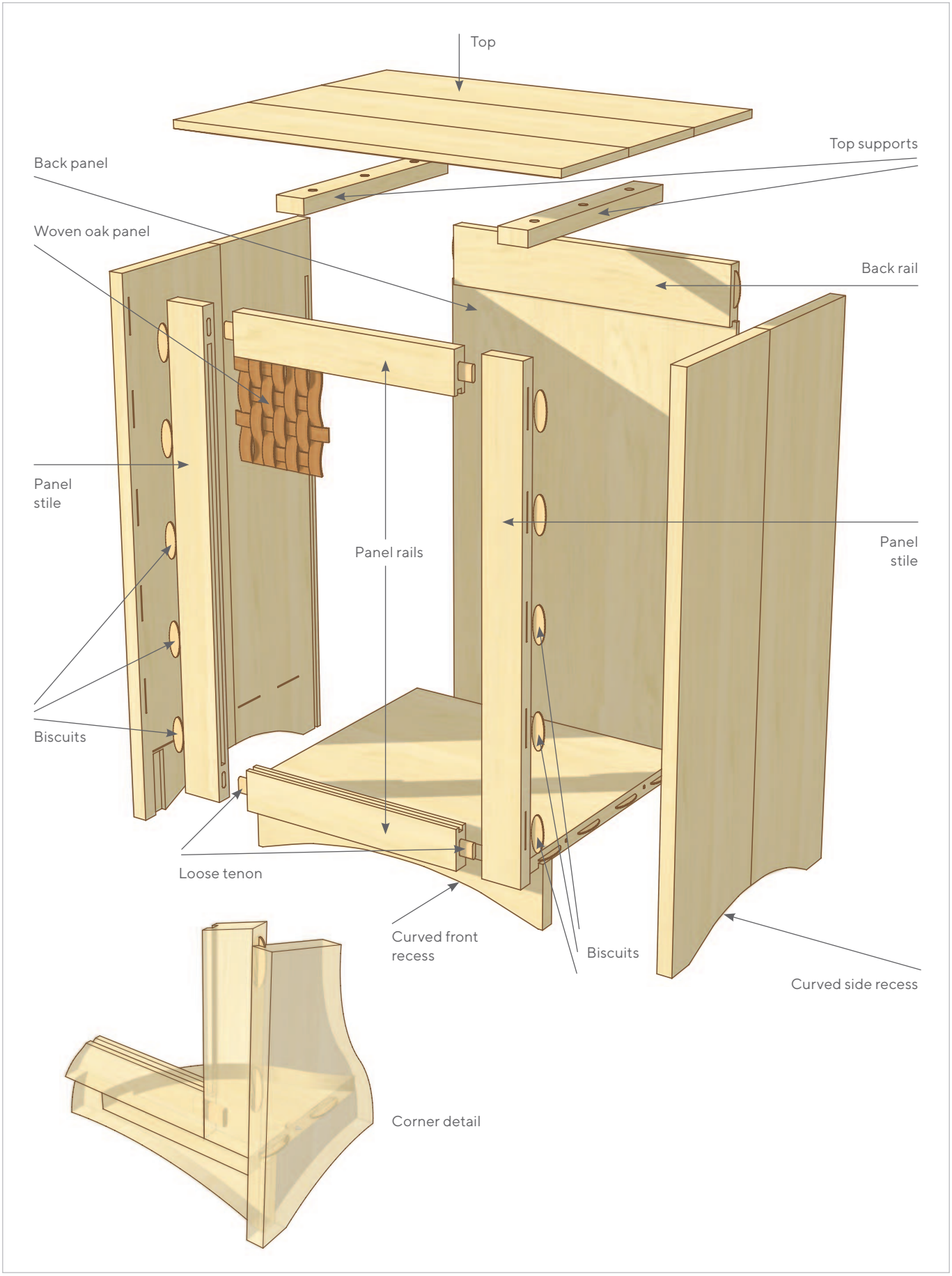
LINEN BOX

KEVIN LEY BUILDS A STORAGE BOX FROM SYCAMORE WITH A FUMED OAK WOVEN FRONT PANEL

This simple linen box was commissioned to form part of a bedroom suite, including some bedside cabinets. In consultation with the client, it was decided to make all the pieces in sycamore with fumed oak drawer fronts and front panels. For added interest, the front panels would be made from woven oak strips and fumed.

I found some good quality straight-grained clean oak for the woven panel at a local timber yard. I did not want any blemishes, knots or cracks as they would be weak points and likely to cause problems during the weaving.

I had to buy 38mm-thick sycamore because the 25mm stuff I had in stock had deep stains where the spacing sticks had been during the drying process. It is worth remembering to take a small plane with you when buying sycamore to check how deep any staining is. The 38mm boards were nice and clean with only light surface stains.


Top
Top supports
Back panel
Woven oak panel
Back rail
Panel
stile
Panel rails
Panel
stile
Biscuits
Loose tenon
Curved front
recess
Biscuits
Curved side recess
Corner detail

PHOTOGRAPHS BY KEVIN LEY

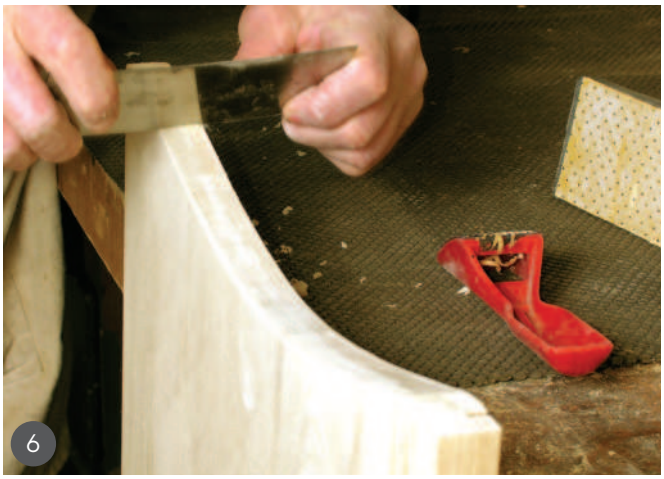
PREPARATION

1 The component pieces of sycamore for the linen box were marked out about 10% over length and width and cut out. Both faces were power-planed to check for stains and colour.

2 They were then sticked and stacked and left in my warm, dry workshop to settle and condition for a couple of weeks. After the settling time, the pieces were faced and thicknessed and stacked in the workshop to continue conditioning during the making. They would be cut to exact length and width during the construction.

The oak strips for the woven panels were cut on the bandsaw. The edge against the fence was hand-planed and sanded before each cut so that only the back face of the strip would need to be finished. The width of the strips was chosen so that the warps – long vertical strips – would fit exactly into the door frame opening. The spacing for the wefts – short horizontal strips – would be adjusted to centralise the panel.

I found that at about 1.5mm thick, the strips were flexible enough to weave but not too fragile to handle – plenty of spares were cut to cover practice runs and breakages. After cutting, they were lightly sprayed with water on each face and stored in a sealed plastic bag so that they would become moist and flexible for the weaving.



CONSTRUCTION

The side panels were made up from narrower boards, carefully chosen and placed with the colour and figure matching as closely as possible. I always try to get the figure to run through the joint to mask it. The faces and edges were marked, and the edges planed square on the surface planer. To compensate for any slight inaccuracy in the setting of the planer fence, I reversed the face of alternate boards presented to it. The boards were laid out flat again and the edges checked for a good fit.

3 Each edge was then hand-planed to remove the planer ripples and a couple of extra strokes taken off the middle of each, so that when placed together again, there was a slight gap at the centre of the glue line. Clamping up would cause extra pressure on the ends and help to prevent splits caused by drying out from the end grain, which loses moisture more readily.

4 Biscuits would be used to locate and strengthen the joints, so biscuit slots were cut in the edges to be glued. Glue was applied to the edges, slots and biscuits, and the joints clamped and left to set. The side panels were then trimmed on the table and radial arm saws.

5 Curves were marked and cut in the ends of the side panels to form the plinth.

6 The curves were smoothed and finished with a scraper and drum sander attachment on the RA saw.

7 Housings were cut with a router for the back panel and front plinth insert, and biscuit slots were cut for the front frame and the back rail.

BASE

8 A base panel was made up in a similar way to the sides and a housing also cut for the front plinth insert. Pockets were cut in the underside of the base using a pocket hole cutter, for reinforcing screws to be fitted during assembly.

TOP

The top was also made up with biscuit reinforced edge joints like the side panels, and cut to exact size. The underside of the front and side overhang of the top was chamfered; the bulk of the waste was removed on the planer and the chamfer finished with a hand plane.

9 Braces were fitted to the underside to hold it flat in use. In order to allow seasonal movement across the grain, I did not glue the braces to the top but fixed them with screws countersunk from each face of the brace and plugged with sycamore dowels cut from scrap. This double countersinking allows lateral movement of the top panel while still holding it flat.

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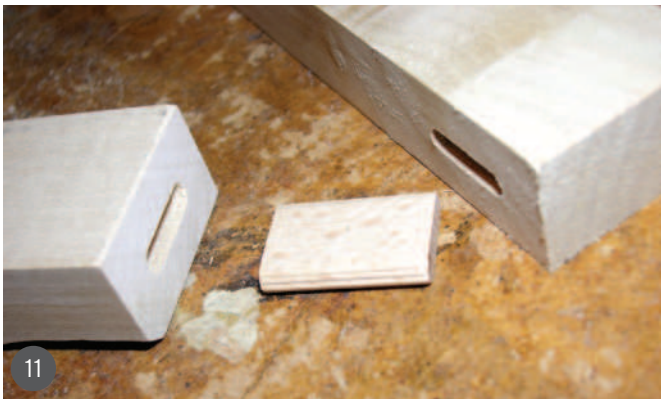
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BACK

A top rail was cut for the back and a housing cut in the lower edge for the back panel. Biscuit slots were cut in the ends to correspond with those in the sides, to form the joint. The rail was set 3mm down from the top edge of the sides to form a recess for the piano hinge. A piece of MDF faced with sycamore was cut for the back panel. I like to use sheet material for backs and bases – particularly drawer bases – where they do not detract from the look or quality; they add greatly to the strength of the piece as they are not subject to seasonal movement and can be glued in all round.

FRONT FRAME

10 The frame components were cut to size and a narrow housing cut on the inside edges for the ends of the woven panel strips.

11 The corners were joined using loose tenons – I used my Domino jointer and dominos. The traditional hand-cut mortise and tenon joints could be used or, for speed, the Trend biscuit jointer is a quick and simple alternative.

WOVEN PANEL

12 The backs of the oak strips were sanded on an inverted belt sander fixed to a bench stand. A block of wood was used to hold the strip to the abrasive and a few trial runs with scrap pieces established the time and pressure to be used. This was surprisingly easy once I got the hang of it – there were relatively few breakages and the strips were pretty even in thickness.

13 The weaving was quite simple – the warp ends were clamped to the bench and a piece of 20mm dowel threaded through them to act like a weaver's shuttle.

14 Each weft strip was then easily inserted and tapped into place, using another block as a spacer.

FUMING

15 Fuming is a process for darkening some timbers. It involves placing the wood in an atmosphere of ammonia fumes in a sealed container. The concentration of ammonia, the ambient temperature and the time the wood is in all have an effect. It works particularly well with oak, but I have used it to good effect with mahogany and cherry as well. I like the process because the colour penetrates well and does not mask the natural shading and figure of the timber – also subsequent wear does not expose cheap-looking white edges. The panel ends were inserted into the housings in the frame and the frame glued and clamped up.

FINISHING

16 All the component pieces were finished as far as possible before assembly as it is far easier at this stage. Glue ooze was scraped off the box top.

17 The surfaces were then belt-sanded to 150 grit and random orbital sanded to 240 grit.

18 The inside faces were given three coats of gloss finish acrylic varnish, denibbing between coats; glue areas were masked to prevent contamination. Outside surfaces were left unvarnished.

CARCASS

19 Glue was applied to relevant edges, housings, slots and biscuits, and the carcass was clamped up. Everything was checked for square by measuring the diagonals, and screws were driven into the pre-drilled pockets in the base. The carcass was left on a flat level surface to set. Once set, the outside surfaces were checked over for blemishes and clamping marks and glue ooze removed. Final sanding of these surfaces was with the random orbital sander and by hand. Three coats of varnish were then applied in the same way as the inside surfaces. The top was finished in the same way and a piece of piano hinge cut to fit the recess over the back rail of the carcass. The other leaf of the hinge was screwed to the back rail, fixing the top to the carcass.

CONCLUSION

This project turned out well – the unusual contrasting timbers and woven panel were very individual and clearly showed that this was a one-off. And that is what making bespoke furniture is all about.

TURNING JAPANESE

A FASCINATION WITH JAPANESE JOINERY TOOK **ROB PRENTICE** OF PLANE & ABLE FROM PECKHAM ALL THE WAY TO KYOTO, AND BACK AGAIN

'Training in Japan simply turned everything I thought I knew about joinery on its head,' says Rob Prentice, who travelled from south London to the far east to train in his favourite type of joinery. Rob first became interested in furniture making while studying for a History of Art degree, and started out as a self-taught maker – 'experiencing all the pitfalls and creative freedoms that brings,' he says. Keen to learn the practical skills he needed to achieve the ideas in his head, he enrolled on a 12-week City & Guilds Carpentry and Joinery course, which he says was 'a great way to learn the foundations of joinery'. He set up his south London-based workshop Plane & Able, and just a few years later decided to dedicate himself to Japanese joinery.

'When YouTube tutorials and illustrated books imported from Japan were no longer enough, I travelled to Kyoto to study under a Japanese temple and shrine carpenter or miyadaiku,' he says. 'It quickly became apparent that what you did wasn't nearly as important as how you did it. My experience of Japan, and Kyoto in particular, was that it was an accepted, and expected, societal norm to be permitted to take whatever you did – joinery, cooking, gardening, pottery – to the utmost of your ability, to strive for excellence.

'In my training that manifested itself in a philosophical as well as a practical sense. Everything had a reason and a purpose. Nothing was superfluous, nor there just for the sake of it. One tool, one function, perfected for a single task, no matter how small or large. The reverence for both the tools and the material was of huge significance. This craft is so honed that no new hand tool or joint has been widely introduced into the canon for hundreds of years,' he explains.

'I am naturally inquisitive and like to question methodologies, but here most of my questions tended to receive quite abstract answers that I was initially puzzled by, but which finally made sense days, and sometimes months, later when the philosophy was reinforced by repeated observation and practising of the task or technique,' Rob recalls. 'Before I was allowed to work on, or even touch, any wood I had to prove I was capable of setting up, sharpening and maintaining every hand tool I intended to use. Suffice to say it was weeks before I earned the privilege to put chisel to wood. The emphasis on doing as much as possible by hand deepens the understanding of the task and, more importantly, reinforces the relationship between the carpenter, the tool and the material. Only through this relationship, which required hours of practice, did it become clear how to achieve the extraordinary levels of accuracy that were expected as standard. Watching seasoned professionals at work was a constant reminder of what putting in the practice could achieve. Their speed and ability to streamline their movements to maximise their efforts without jeopardising the quality of their work was inspiring.'

Rob returned from Japan feeling more passionate than ever to hone his skills and focus on Japanese joinery. 'I have become more selective in what work I take on and less willing to compromise on the process,' he says. 'Training in Japan really impressed on me that there is no quick fix or quick route to take, and that true craftsmanship is in having patience and an obsessive attention to detail, even when that detail may never be seen. It has made me re-evaluate what is an acceptable tolerance in my joinery. My master expected tolerances of microns, not millimetres. I feel both more and less knowledgeable, as there is still so much to be learnt and so many hours of practice to put in.'

HAVEN IS A PLACE ON EARTH

Rob decided to make furniture his metier not long after finishing his History of Art degree. 'After graduating and following too many unpaid internships at London galleries, I found myself freelancing for a few different artists and art institutions as an art and exhibition technician,' he recalls. 'I just said "yes, I can do that" to pretty much everything, so found myself constructing art pieces, fabricating mirrored infinity coffins for an artist's solo show, transporting delicate works across London, putting together teams for installation, building stud walls for shows, and everything in between. Public funding cuts to art organisations around 2012 dried up much of the work and provided the push I needed to make the jump into furniture making.'

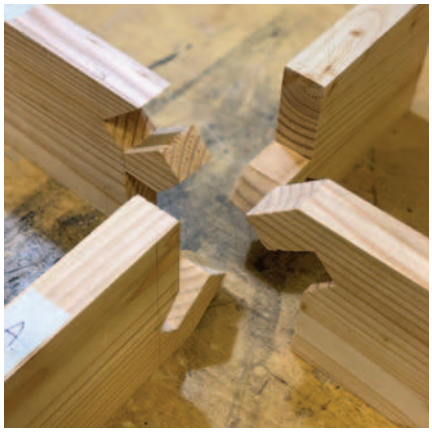
He lives in Forest Hill, south London, just a 15-minute cycle ride from his Peckham workshop, which is his second official workshop. When he first started his business he made an ill-fated attempt to set up a workshop in his own flat. 'There was a low point before I found a space, where I had set up a mini workshop in the living room of my flat with dust sheets and tools everywhere,' he admits. A friend tipped him off about a space in a converted old print works in Peckham. 'Despite having no windows and being only about the size of a single garage, the studio I rented there turned out to be

an ideal first workshop,' Rob says. 'The landlord was a bit of a character, but hugely supportive of start-up creative businesses – everyone from musicians and dressmakers to craft beer brewers and artists, and I think there might have been a taxidermist, could find affordable space there. He curated the spaces so that people in similar fields became neighbours, which encouraged a fantastic community and ethos of sharing ideas and resources. I am forever grateful to have met many talented craftspeople there, some of whom I still call up for advice and collaborate with on larger projects now.'

This creative haven couldn't last forever. 'New management meant higher rents and fewer freedoms, forcing most of the original tenants out,' he says. Luckily by then he had met fellow furniture maker Lowry London in a neighbouring studio. The pair took on a new workshop space together, in one of the arches under Queens Road Peckham railway station, and have been there for nearly four years. 'Sharing the space is fantastic and it goes without saying that we're able to get so much more for our money in a sought-after, creative part of London,' says Rob. 'It's also hugely beneficial to have someone in the same industry to bounce ideas off, look at your work with a fresh pair of eyes and discuss the pros and cons of everything from design, technique, tools and material choice to the nitty gritty administrative aspects of running your own business.'

The workshop is set up with heavy duty machines against the walls and an open space in the middle for everything else. 'Since my training in Kyoto, I have worked from two large heavy duty wooden trestles, which I made in the Japanese tradition,' says Rob. 'I don't have a vice, nor a worktop, nor a Roubo workbench, just the trestles, a small clamp or two and my hand tools, which I store in traditional handmade wooden toolboxes that can be moved around on a mobile base. This set-up gives me the utmost flexibility and is following in the ancient tradition of Japanese carpentry, which is the method still used by contemporary Japanese carpenters.'

The workshop has all the machinery needed to mill timber but not much storage space, so Rob takes a lot of care to avoid waste. Once he has done the milling, all further marking, cutting, joinery and finishing is worked using exclusively traditional Japanese hand tools. He says: 'I don't have a fancy collection by any means, but I have spent years sourcing just the right tools for the job in hand, so it's a varied assortment. I have collected everything from refurbished chisels of all shapes and sizes, found at second-hand tool markets and even car boot sales, to as-new deadstock saws that were languishing in the forgotten corners of crammed tool shops in Japan. Many of my hand planes, or kanna, have come from more specialist tool dealers that I have discovered via Instagram. Very dear to me is a huge antique whale back rip saw, or maebiki nokogiri, that I was able to hunt down in a market in Kyoto. It's a tool I've long had a fascination with, and to procure one that was in good enough condition to sharpen and bring back to full use,



with some love and attention, has been almost too good to be true. It has been put through its paces – or it has put me through my paces – whenever the opportunity arises, and it always causes a bit of a stir on site!'

Where possible, Rob prefers hand tools. 'That's because I enjoy the process of being more connected to the wood and taking my time, but also if any mistakes occur the ramifications can be considerably more dramatic with power tools than with hand tools,' he says. But he finds power tools incredibly useful for 'real grunt work', and his favourites include his Makita chain mortiser.

When choosing woods, Rob divides them into two categories: Japanese and non-Japanese. 'Japan exports a very small amount of its timber, and what we get here in the UK is never the best quality, which makes it tricky to source for highly specific projects that require the best or large quantities of timber,' he says. 'When studying in Kyoto, the three main wood types that I worked with were Japanese cypress or hinoki, Japanese cedar or sugi and Japanese white oak or shirakashi. Hinoki is pretty special. It tools wonderfully from sawing to chiselling and is at its best when finished by kanna, or hand plane. Japanese oak is also special but for different reasons. It is incredibly hard and is used mainly for tool bodies, especially kanna and chisel, or nomi, handles. For me though, it's the grain that makes it so unique, with very few blemishes and a lovely subtle speckling throughout.'

He adds: 'My favourite British species is London plane. It isn't the easiest hardwood to work with due to its swirly grain pattern, but it's this decorative quality that I find so special. The variety of pattern and colour you get from board to board is constantly surprising. I don't think I could ever tire of it.' Rob has worked with a number of other materials over the years, including plastics, rubbers, brick and metal, but these days he chooses to only work with wood. 'It is the material I feel most comfortable with, and as a natural product it never fails to challenge and surprise in equal measure,' he explains. 'It has a tendency to constantly teach you something new and never quite reveal all its secrets.'

Finishes depend on his commissions and clients tend to request one that is both durable and easy to take care of. 'Hardwax and polyx finishes are bombproof, but I prefer to offer natural oil finishes, which tend to create a deeper and more lustrous effect than solvent-based oils,' says Rob. 'My real preference is a kanna finish. Not only is it incredibly satisfying to achieve, but it takes a real attentiveness to the tool, the sharpness of the blade, the material and the technique, whereby the aim is to remove as little material as possible. When it is done well, the surface is left with a lovely soft sheen.'

YOU'RE THE INSPIRATION

Inspiration comes from anywhere and everywhere: 'Art, fashion, design, film, music, architecture, nature – nothing is off limits,' says Rob. 'Curiosity is probably the main driving force for my ideas. I'm a big believer that there is no single source for inspiration. I try not to let

myself become narrow-minded or limit my research to things solely connected to furniture. My partner and I try to go to as many exhibitions as we can and make time to visit shops, markets, different cities, car boot sales and so on. Seeing and experiencing things outside of the confines of furniture takes the immediate pressure off finding the holy grail of inspiration and enables me to look at the discipline with a bit of perspective. I don't think creativity can be pigeon-holed, it's all intertwined.

'I try to take time to allow my imagination to wander and not to shut down any idea too quickly. Sometimes an idea might initially sound utterly ridiculous, but given the space to be pondered, probed, and moulded a little, it can be useful in broadening your thinking and challenging preconceptions. It's a messy process, but I like to have a bit of fun with things, deviate from the path a little and find myself switching off when things become too clean and straightforward.'

Rob's style has evolved over the years, but he finds himself drawn more and more towards Japanese techniques, traditions and philosophies. But he says: 'No matter how in-depth my knowledge and experience of the techniques and values, I will still ultimately remain an outsider. For me this isn't necessarily a negative, as it affords me the freedom to push against the rules and be a little more experimental. Of course, I am fully aware that centuries of master craftsmen are not to be ignored, and that there's absolutely no guarantee of producing something better, but it's in the process of challenging set ideals that innovations can occur.

'I do believe that you need to have an understanding and appreciation for the methods and traditions in the first place, much in the same way that a painter learns draughtsmanship before developing abstraction. A grounding in the underlying principles is always more interesting and impactful. Personally, I find the process of experimentation improves your understanding and appreciation of the techniques and philosophies rather than devaluing and destroying them.'

One of Rob's favourite projects was a bespoke standing desk for a client who wanted him to incorporate as many offcuts from the workshop as possible. 'Not only was it an exercise in trying to make waste material work aesthetically, but it was also a great opportunity to feature a variety of different types of joinery that I wouldn't have had to use if it was built to a standard brief using one wood cut to size,' he recalls.

His other, and 'probably absolute favourite', was a full-scale traditional Japanese torii gate and pergola, with decorative screens framing each end of the pergola. He says: 'The client was passionate that they wanted every aspect to be made as traditionally as possible, which gave me the means to really put all my training and knowledge of the craft to the test. It was the biggest project I have ever taken on and it kept me busy for about 12 months from initial design to installation, using almost every single tool I own.

'Everyone seems to have that one project that they look back on, and with hindsight would never have said yes to, and I think this might be mine. But I am incredibly proud of what I achieved, and just so grateful to have had the opportunity to work on a build of this scale using Japanese joinery. These kinds of commissions are extremely few and far between outside Japan. The size of it alone was a huge challenge, not helped by it being entirely made from oak. The rough dimensions of the torii gate were 3.5m wide by 5.8m tall. I had to rent out a warehouse usually used for erecting architectural structures, just to be able to trial the joints in an upright position. The technical aspects were pretty unique too, and some methods I had only ever learnt in theory or practised on a miniscule scale for furniture. Rounding and tapering the legs, each of which weighed around 400 to 500kg, and shaping the top section in multiple planes all by hand was a challenge like no other.'

So what is it he loves so much about Japanese joints? 'They are undeniably beautiful,' says Rob, 'but what I love about the Japanese philosophy is that aesthetics alone are not enough – they must be coupled with functionality. I am always in awe of the technical difficulty of even some of the most common joints and love the specificity of when, where and how each one should be employed. The "flat pack" concept, without need for any additional glue or screws, and their self-locking nature are just some more of the endless things I like about Japanese joints.'

He advises other makers keen to explore Japanese joinery to simply enjoy the process. 'It is slow and there are many steps that cannot be avoided, but they are all there for a reason,' Rob explains. 'Rushing will only dilute the experience and shortcuts are never satisfactory. There is so much to enjoy with the minutiae of it all. It has the potential to make you think about things totally differently.'

Rob is currently working on several small kioke casks used for ageing shoyu – Japanese-style soy sauce – a batch of stackable soba noodle boxes and some decorative trays for carrying tableware. 'A friend of mine has recently moved back to London after living in Japan for 15 years and is in the process of starting his own Kaiseki restaurant, so I am very excited to have the opportunity to collaborate with him as he shares my passion for Japanese craftsmanship – and food,' he says.

Looking forward, he hopes to divide his time between making furniture and more architectural joinery projects. 'Recently I've been working with my Japanese master in France building a large traditional Japanese carpentry workshop in the grounds of a chateau, which will become a space for education and practical courses,' he says. 'While much of my formal training has been in architectural joinery, with a little bending of the rules it can also be applied to smaller-scale furniture, and it's at this intersection that I intend to hone my craft.'

Japanese joinery is slow and there are many steps that cannot be avoided, but they are all there for a reason.

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CARVED CONSOLE BRACKET

STEVE BISCO CARVES A BRACKET FROM THOMAS CHIPPENDALE'S *DIRECTOR*

In honour of the great furniture maker, I decided to make a carving from a design in Thomas Chippendale's *The Gentleman & Cabinet Maker's Director*. Most of the designs in the *Director* are large and elaborate pieces intended for the grand mansions of the aristocracy. I don't have a grand mansion so I picked one of the smallest items in the book. It is one of nine Brackets for Busts on plates CLX (160) and CLXI (161), which we would describe as console brackets or corbels, intended to be fixed on a wall as a small shelf to display a bust or vase, although you could adapt the design to make a bracket for a piece of rococo-style furniture. The bracket I chose is a rococo design with swirling acanthus and C-scrolls.

Chippendale's drawing in the *Director* (see step 1) is, of course, only two-dimensional and much imagination is required to convert the design to three dimensions. When you see items made from Chippendale designs – even pieces from his own workshop – there are always differences in detail between the drawing and the finished piece, so we are allowed some latitude in making the design meet our practical requirements. Chippendale's only comment on the Nine Brackets for Busts is that 'their dimensions cannot be fixed', meaning we should choose our own size. I have fixed this one with an overall width of 240mm, a height of 305mm and a projection from the wall of 150mm.

Chippendale's general advice for three-dimensional carved pieces is that they would benefit from being modelled before carving, so I followed this advice by making a clay maquette. This was a great help in positioning the elements in

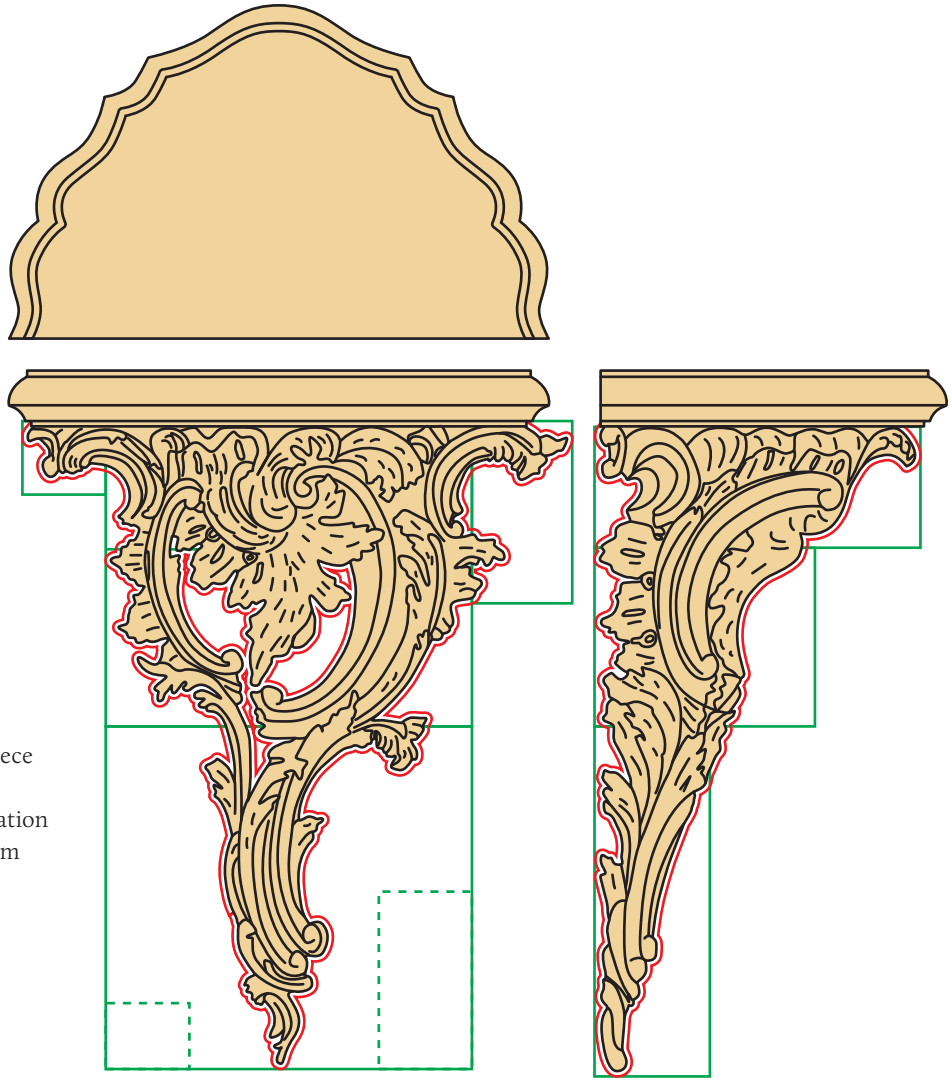
YOU WILL NEED

Tools:

- No.3, 5 & 10mm
- No.3, 10 & 20mm fishtail
- No.4, 6mm fishtail
- No.5, 3, 5 & 7mm
- No.5, 13mm curved
- No.6, 25mm
- No.8, 8mm
- No.9, 3, 16 & 20mm
- No.9, 16mm curved gouge
- 18mm spoon gouge
- 8mm short bent gouge
- 10mm skewed spoon gouges L&R
- 12mm back-bent gouge
- 2mm veiner
- 2 & 3mm chisel
- 3 & 6mm straight V-tool
- 5mm bent chisel
- 6mm back-bent gouge
- 6.5mm & 20mm flat chisel
- 16mm hooked skew chisel
- Curved V-tool
- Padsaw
- Jigsaw
- Bandsaw

Materials:

- Lime. The top shelf needs a piece 240 x 150 x 25mm. The main body is best built up by lamination from a board 465 x 160 x 50mm as indicated on the drawing.
- Sander-sealer
- French polish (as final sealer)



three-dimensional form.

You have the benefit of my working drawing and finished photos to save you this trouble. Chippendale does not specify the shape of the top 'shelf' section of the bracket, but gives only three shelf types for all nine brackets illustrated. I have chosen one that best suits this bracket and adapted it to fit.

This bracket is 'pierced'. The original would also have been gilded, if you wish to do that you can use imitation gold leaf, as real gold would be very expensive on this scale.

TEMPLATES AND TRANSPARENCIES

When you are shaping a complex three-dimensional carving you very quickly lose the traced pattern. This makes it difficult to keep the decorative elements in their right positions and the carving can end up looking quite different from the design. Control this by using templates and transparencies to check against as you work. Make templates of the side profile and the top shelf by tracing on to card, and a transparency of the front pattern by copying on to OHP film with permanent marker pen. By holding the transparency over the carving you can keep checking the shape and position of the elements.

Chippendale's general advice for three-dimensional carved pieces is that they would benefit from being modelled before carving

ILLUSTRATION COURTESY OF DOVER PUBLICATIONS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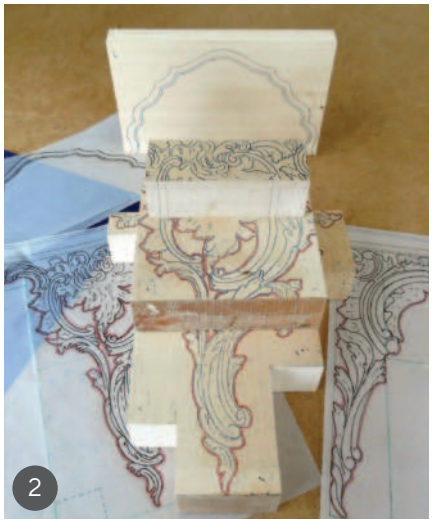
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PHOTOGRAPHS BY STEVE BISCO


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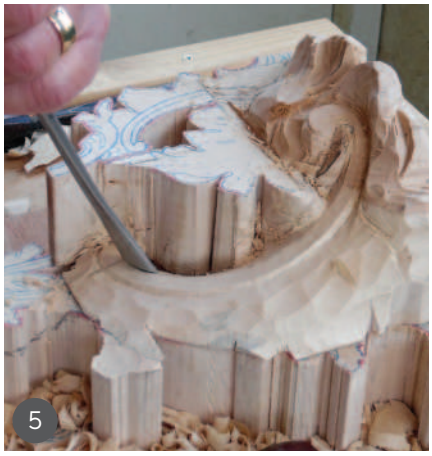
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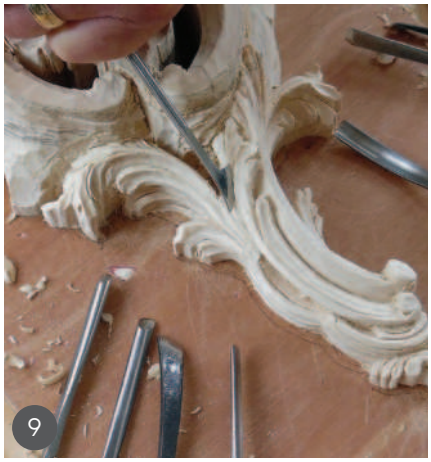
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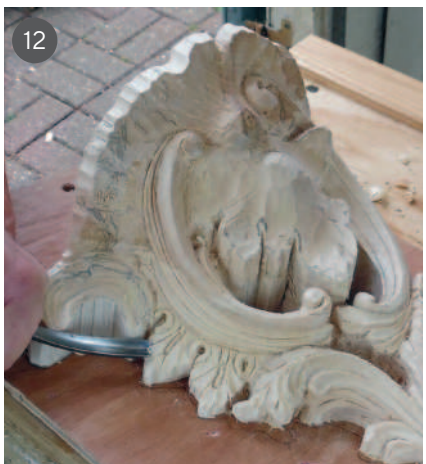
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INSPIRATION

1 This is the original illustration for the Bracket for a Bust in Chippendale's *Director*.

PREPARATIONS

2 Make a full-sized copy of the drawing. The body of the bracket is best built up by lamination with 50mm-thick limewood board. This avoids wastage and makes it easier to cut out the voids more accurately. The drawing indicates how this may be done using a board 465 x 160 x 50mm, but you can apply the principle to other sizes. The top shelf needs a piece 240 x 150 x 25mm.

3 With the pattern traced on to the wood and cut out on a bandsaw, jigsaw or scrollsaw, the layers make more sense. The voids around the central leaf can be cut out before gluing. Carefully align and glue the sections of the main block together (excluding the top shelf) using a thorough coating of uPVA glue on every joining surface and clamps to compress it while it sets.

ROUGHING OUT THE SHAPE

4 Fix the laminated block to a backing board, screwing from the back, and you are ready to start the complex process of roughing out the levels and general shape. With guidance from the templates, the drawing, and photos of finished bracket, shape the upper or forward part of the carving to blend it in with the shelf and the lower levels. Don't take off wood you may need later.

5 Now rough out the long C-scroll on the right-hand side that flows in a steep, elegant curve from the upper layer of lamination to the bottom of the middle layer. It's not easy, so use the drawing, templates, transparency and finished photos to keep checking line and position.

6 The C-scroll on the left is smaller and at a slightly lower level.

7 You can now rough out the central acanthus leaf. This is a key feature of the console, so shape it with care.

8 Next, shape the lowest level of lamination, working down towards the tip at the bottom. Also, work the various acanthus elements at the sides down towards the background. Create a hollow each side of the main C-scrolls and refine the shape of the upper levels now that everything is clearer.

CARVING THE DETAIL

9 With all the key features roughly in the right place we can now add the detail, starting at the bottom with the swirling acanthus elements. The edges of these elements need to be worked down towards the background so that many of them will be in contact with the wall when the console is hung up. To accentuate the swirls, carve flowing vein lines with a hooked skew chisel, and add flicks and hollows mainly with a No.8 curved gouge.

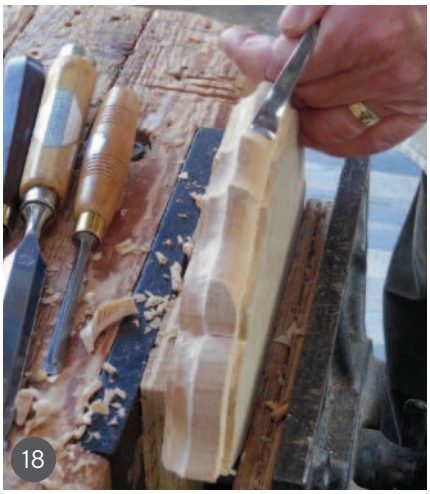
10 The large C-scroll to the right of centre is a principal feature that must be made to stand out. The side nearest the centre must be hollowed into a smooth cove that gets wider nearer the top. The outer side must be rounded into a convex curve that has a clean edge against the inner cove. Apart from two V-lines along the upper and lower edges of the cove, the C-scroll must be smooth so it will contrast with the acanthus surfaces.

11 Now we can add the acanthus leaf detail to the right-hand side. These are quite shallow and are more spread out than they appear on Chippendale's drawing as they extend from front to back. Try to give them as many flicks and curves as you can.

12 The C-scroll on the left side is smaller and narrower than the right side one, with some extra veined curves on the outside. The acanthus leaf tips that project sideways towards the background are rococo features that appear frequently in Chippendale carvings.

13 To carve the features around the top edge, attach the card template of the underside of the shelf to help you visualise how they will work together. The left-hand side is made up mainly of typical rococo ear-shaped 'shell' features. Shape their top edges into the shelf.

14 The acanthus curls on the right-hand side mostly roll over like a breaking wave. Note the 'reel' feature towards the back, and the way the outermost C-scroll extends beyond the ends of the shelf.



15 Now finish off the detail carving with the large central leaf. Give it lots of swirl, flicks, hollows and vein lines. The left side has some more of the rococo slits in the leaves, while the right side has more of the normal acanthus features. The leaf will be completely undercut, so take account of this in the surface carving.

16 Remove the carving from the backing board. Fix a cradle of wooden blocks to the bench and lay a thick layer of padding over it. Hollow out the interior from behind using curved gouges, then refine the back edges of the leaf and the C-scrolls. Open out the inner voids and undercut some of the outer edges where the acanthus lies away from the background. Check how it will look when placed on a wall.

17 Give the carving a light sanding with fine abrasives to remove stringy bits, but take care not to dull the detail. The finished bracket should be light and hollow.

CARVING THE SHELF

18 Draw a line horizontally around the side of the shelf, 16mm down from the top edge. Using the innermost tracing lines, carve a fillet 2.5mm deep on the upper and lower faces and level out the surface with a flat chisel. Then carve a cove along the lower part of the edge, leaving another 2.5mm fillet alongside the first fillet. On the top half of the edge, carve a bullnose moulding. A shallow back-bent gouge is useful for the convoluted edge. Refine the mouldings to a smooth, even surface with abrasives.

19 With the shelf finished, turn it upside down to glue on the console bracket. Use a set square to check they are at right-angles before gluing. Apply a thick coat of uPVA adhesive to the top of the console, invert it on to the shelf and make a rubbed joint by moving it about slightly until it sucks together in the right position.

20 Here and in the following photo you can see the finished sides of the carving, to use as reference.

21 You can finish the carving at this stage by adding sealer, or add imitation gold leaf for a gilded look.

THE WOOD AWARDS SHORTLIST

WE SHOWCASE THE PROJECTS NOMINATED FOR THE PRESTIGIOUS AWARDS

The Wood Awards has announced its 2022 shortlist, revealing a stunning, innovative array of British architecture and product design using wood, all now in the running to receive the highest architecture and design accolade of the UK timber industry. From more than 200 projects entered, a shortlist of 32 entries has been created which unveils the diverse, creative and high-quality buildings and furniture being made using the world's only truly sustainable and renewable material – wood. Included in the list are some of the UK's leading architects, engineers, product designers and furniture makers, showcasing some of the exciting talent arising from the UK's domestic timber industry and the wood suppliers who support them. The winners will be announced on 25 November.

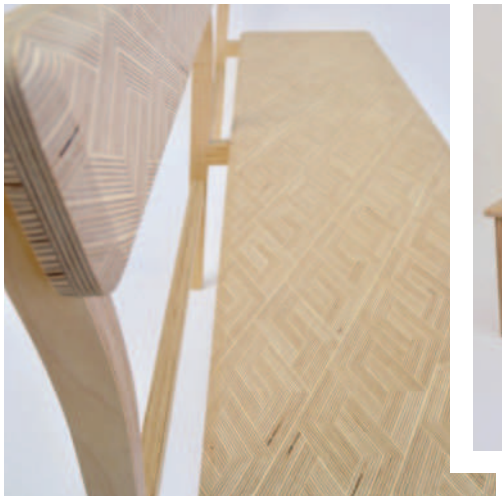
woodawards.com

BESPOKE FURNITURE & PRODUCT NOMINATIONS

FURNITURE FOR 2 BESSBOROUGH STREET by Mentsen

Echoing the geometry and solidity of the Grade II listed office building for which it was designed, the collection includes a sofa, coffee table, armchairs and side table.

PHOTOGRAPHS COURTESY OF THE WOOD AWARDS



WAVE BENCH by Chris Miller Design

Inspired by a love of pattern and a desire to use waste materials, this bench demonstrates that we can make beautifully crafted, visually exciting and functional furniture within a zero-waste philosophy.

ALDER HEY FORAGING COLLECTION by H Miller Bros

Children are central to the design ethos of this set of foraging tools and a mobile foraging larder, as they are for the Alder Hey Children's Hospital where they now reside to playfully inspire.

FENLAND BLACK OAK PROJECT, lead designer Mauro Dell'Orco

Regular readers of *F&C* will be familiar with this incredible table. Following the discovery of an extraordinary piece of 5,000-year-old bog oak, 13m-long planks were cut and crafted into a table that connects ancient forests and local community.

PRODUCTION FURNITURE & PRODUCT NOMINATIONS

MIGO by Pascal Hien

Conceived during the pandemic, a time of change, uncertainty and rapid adaption, this furniture piece is designed with no definitive front or back, or right or wrong approach to using it.

ROUND OAK CHAIRS by Fowler & Co

Ben Fowler's lifelong love of boat building informs much of his design, and never more so than his beautifully made Roundwood Chair. The chair's clean, contemporary lines and graceful curves are expressive of its simple, yet well-considered construction.

REPRISE CHAIR
by Norm Architects

Using traditional woodturning and steam-bending techniques, the Reprise Chair reflects a classic design from the 1950s exhibiting the extensive legacy of L Ercolani's heritage crafting solid wood furniture.

IO COLLECTION
by Lars Beller Fjetland

Elegant while friendly in form and character, the IO Collection demonstrates the meaningful relationships between objects and their users, throughout a product's lifespan.

STUDENT FURNITURE & PRODUCT NOMINATIONS

OAK DESK WITH UPSTAND,
Holly Timmis, Building Crafts College

Designed with personal use in mind, the student sought to create a piece which was unique, practical and beautiful, while exploring technical challenges.

VENEER STOOL
by Henry Johnson, Nottingham Trent University

Veneers are commonly used to imitate a more expensive and solid piece of wood, but in this design the material has been embraced, displayed and celebrated.

CHORD CHAIR
by Sam Whyman, Waters and Acland Furniture School

Combining Danish mid-century design with contemporary influence, this student design includes woven lumbar support, which offers firm but gentle support to the lower back.

PEBBLE TABLE by Mark Thomas, City and Guilds University

Inspired by the distinctive natural contours of pebbles found on the beaches of St Leonards, East Sussex, this piece appears as if sculpted from one solid piece of wood.

BUILDING NOMINATIONS

COMMERCIAL & LEISURE:

ABBA Arena, London, by Stufish, Stage One, Xylotek
Brent Cross Pavilion, London, by Moxon
Clifford's Tower, York, by Hugh Broughton Architects
The Gramophone Works, London, by Studio RHE
UK Hardwoods Storage Building, South Molton, by Buckland Timber

INTERIORS:

Equal Access Project – Inner Portico, London, by Caroe Architecture
Greyfriars Charteris Centre, Edinburgh, by Konishi Gaffney Architects
The Chapel Roof at Radley College, Abingdon, by Purcell

EDUCATION & PUBLIC SECTOR:

Homerton College Dining Hall, Cambridge, by Feilden Fowles
Sport's Pavilion, Master's Field, Balliol College, Oxford, by Niall McLaughlin Architects
Wintringham Primary Academy, Cambridgeshire, by dRMM

SMALL PROJECT:

Buggy Store at The Farmyard at The Newt, Bruton, by Richard Parr Associates
Douglas Fir House, London, by Christian Brailey Architects
Old Four Row, Lincoln, by Daykin Marshall Studio

PRIVATE:

The Green House, London, by Hayhurst and Co
March House, Cookham, by Knox Bhavan Architects
Mews House, London, by Russell Jones Limited
The Studio, Aldeburgh, by Sanei Hopkins Architects Ltd
The Threshing Barn, Willesborough, by RJP Architects
The Water Tower, Castle Acre, by Tonkin Liu

JOINED CHEST BOX

MITCH PEACOCK USES 16TH-CENTURY TECHNIQUES TO MAKE A FRAME AND PANEL BOX

Joinery in English furniture appears well established by the 16th century, with many examples of joined stools and chairs of the period still in existence today. Also common from that time were joined chests, and it was from those that I took inspiration to make a box from some cedar that was brought down in the winter storms.

MAKING THE CHEST

1 Breaking down green logs with wedges, and riving rough blanks with a froe and beetle, are not necessary to recreate this box. However, I do recommend starting with unseasoned wood, which you will find works beautifully with sharp-edge tools. Traditional saw mills or arborists should be happy to supply oversized blanks, cut with the grain, from which you can rip saw the individual components and plane to size.

2 Having rived blanks from my two small logs as soon as possible, I allowed them a couple of months' drying time before I set about flattening and squaring them up with my scrub plane. The wood will

PHOTOGRAPHS BY MITCH PEACOCK

continue to dry for some time, shrinking and moving as it does, so the blanks were still left a little on the large size.

3 Neither of my logs had particularly straight grain, and after flattening one side and squaring an edge, the majority of waste was sawn off after marking out. In straight grain material, waste can more quickly be split or hewn off, before using a plane.

4 After another break of a month or so, all the blanks were dressed square and true with bench planes. It was noticeable that the shavings were no longer wringing wet with water by this stage.

5 Although not fully seasoned, the wood was dry enough to complete the joinery of the framework and top.

6 All the rails were cut to length, after selecting those for the front, back and two sides, and shoulder lines were knifed in for the tenons.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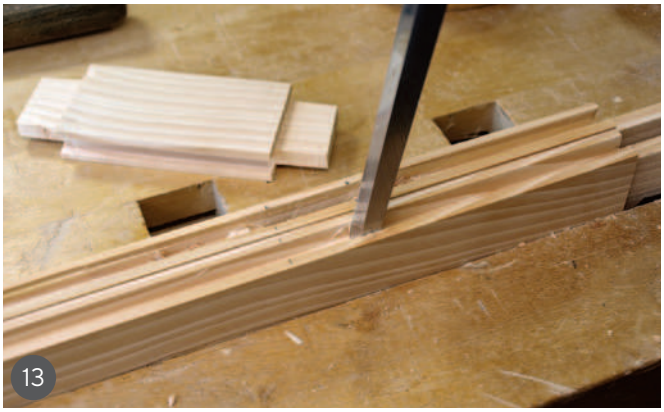
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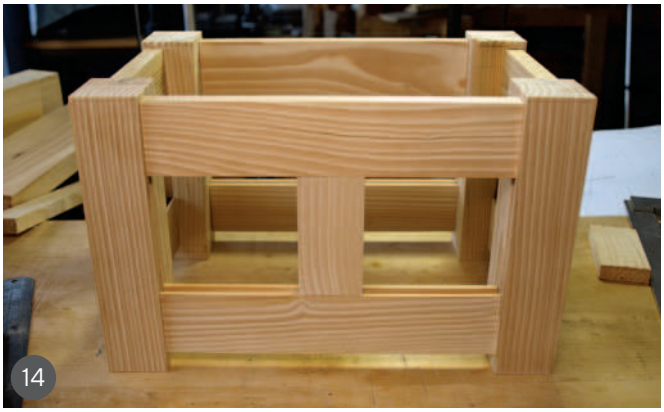
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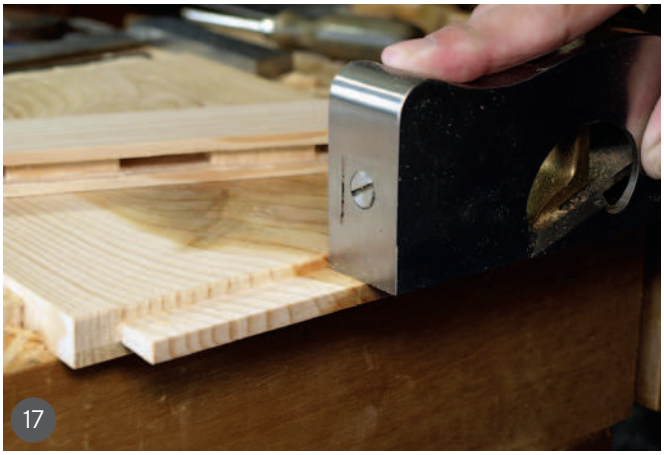


7 Each of the rails then had a groove ploughed in the edge facing its respective panel. I made sure to mark the edge before cutting, to ensure the rail would end up in my preferred orientation.

8 The legs were marked out for top and bottom mortises on two adjacent sides, grooves for the panels, and a foot bevel. The top mortise was designed with a secret haunch, so that it would not be visible in or weaken the top of the leg.

9 Intersecting mortises were prepared in the legs, taking care to preserve the internal corner by limiting the depth of the first chopped mortise; this maximises glue surface area, which, as you'll hear later on, wasn't necessary.

10 The top and bottom mortises were joined by a shallow groove, cut first by chopping with the mortise chisel …

11 … and then cleaned to depth with a router plane. This groove will house the sides of the panels, allowing them to expand and contract.

12 With the mortises prepared, the tenons could be cut to fit, remembering that the top rails require secret haunches.

13 Although not necessary on this size of box, I had chosen to split the front with a muntin, and have two panels. The muntin was prepared like the rails, only with a groove in each edge, and its tenons were housed in mortises chopped in the centre of the front rails.

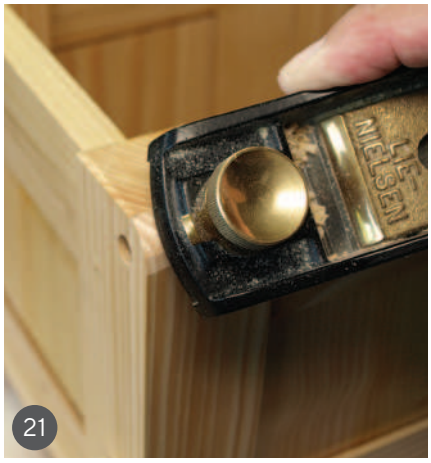
14 A dry fit of the framework showed that everything was well fitted, and allowed the dimensions of the panels to be confirmed. The panels are designed to float in the grooves, allowing for movement over time. With the wood still quite high in moisture, they are likely to shrink quite significantly across the grain, so in that direction they were prepared a relatively full fit.

15 Since the panels are thicker than the grooves, a rebate was planed all around their edges, leaving a tongue that would slide easily in the grooves.

16 The raised section of the panel was then chamfered for a more appealing look. With the panels finished, the main carcass was assembled with wooden pins, using a technique known as draw boring, although it could have been glued. (See pages 96–98 for more information on draw boring).

17 Once the main board for the top of the box was trued and thicknessed, it was given a breadboard edge. The edge sections were grooved and mortised, and the ends of the main board planed to a snug fit.

18 Stub tenons were cut so that the end caps would seat fully, with the remainder housed in the groove. Since the board will expand and contract, the outer stub tenons were left narrower than their respective mortises.



19 The pins that attach the breadboard ends to the board were bored for, with the outside ones being elongated to allow movement.

20 A simple hinge was made that rotates on a turned pin seated in a hole near the top of the rear legs. I glued the hinge arms to the breadboard ends, but they could have been fashioned integral to the top, or attached by screws.

21 To allow the top to open and close, the top of the legs and rear rail were eased with a block plane.

22 When open, the top supports itself just beyond vertical.

Of course you could make this box from seasoned or kiln-dried wood, but in my mind the pleasure diminishes with the moisture content. I shall now be keeping my eyes open for a freshly felled, straight-grained butt from which to make a large blanket box of the same design.

DRAW BORING JOINTS

MITCH PEACOCK EXPLAINS HOW HIS JOINTED CHEST WAS ASSEMBLED WITHOUT GLUE

PHOTOGRAPHS BY MITCH PEACOCK

With so many adhesive choices available to woodworkers, we sometimes forget how our ancestors used to fix their joints together. One such method was draw boring, and it's as useful today as it ever was.

Draw boring is a mechanical fixing which pulls a joint together tightly and holds it there indefinitely. A straight-grained peg is driven through deliberately offset holes bored across the joint, bending and being compressed as it goes. Friction, together with the peg being misshapen, prevents it from falling out during the lifetime of the joint.

HOW TO DRAW BORE A MORTISE AND TENON JOINT

1 You'll need some pegs, which should be straight-grained to maximise strength. Oak is commonly used, but any relatively tough, non-brittle wood that can be easily cleaved should be fine. Cleave square pegs from a short length of stock, fractionally larger than the diameter required. Taper the ends to just fit into a hole of a dowel plate, or just a hole bored through a steel plate, and drive the pegs through.

2 Prepare the mortise and tenon joint in the normal way, and mark for the draw bore hole. It's important not to place the hole too close to either the end of the tenon or the edge of the mortise. In the case of the muntin of my small jointed chest, using 4mm pegs, the tenon is 25mm long, and the draw bore hole is centred 10mm from the edge.

3 With the tenon removed and a packing piece inserted instead, the draw bore hole is bored. In thick components, for example the chest stiles, the draw bore hole need not pass through to the far side, but should extend at least as far each side of the mortise.

4 The tenon is then inserted and the centre of the hole transferred to it with the brad point bit.

5 A new centre point is marked on the tenon, marginally closer to the shoulder. In this case, approximately 1mm. The tenon hole is bored using this centre.

6 In order to prevent the peg from crushing the edge of the tenon hole, and for ease of assembly, the hole is tapered towards the end of the tenon by the same offset.

7 Until final assembly a thinner, or tapered, peg can be used to temporarily hold the joint together. For final assembly, the joint should be held tightly together, while the peg is driven in.

8 Excess peg length is sawn off. I always protect the surface with some paper when I use a flush cut saw …

9 … and pare the last of the peg excess away with a chisel.

10 The assembled joint, sound and tight, with no glue in sight.

Is draw boring for you? I certainly appreciate having learnt it, and have used the technique on many occasions. The added time required to make the pegs and prepare the holes can certainly mount up, however, there's no racing to get joints glued, assembled and clamped, and no drying time required. If you get a chance, give it a go.

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TURN, TURN, TURN

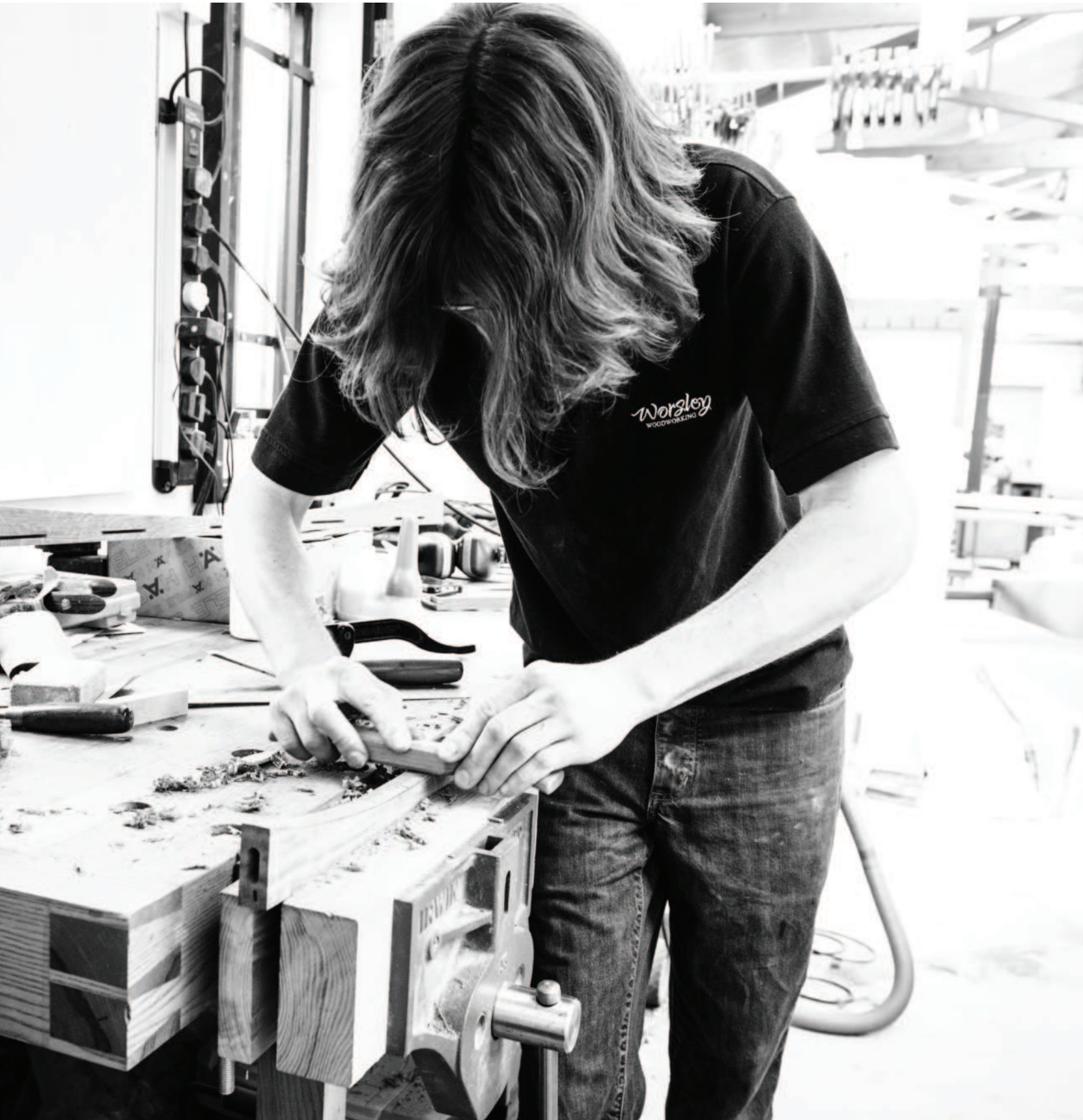
INSPIRED BY A LOVE OF WOODTURNING AND MAKING, **BRENDAN WORSLEY** QUIT A DEGREE IN ENGINEERING TO BUILD A CAREER IN FURNITURE

Suffolk maker Brendan Worsley has been woodturning since he was just 13 years old. 'My interest was sparked by a weekend job serving food and drink in a tearoom,' he recalls. 'My boss's husband was a furniture maker and he quickly became an influence on me. My dad helped me turn a wooden pen on his engineering lathe and I quickly got hooked. I borrowed some money off my dad and bought a small lathe and a few tools. I paid him back via my weekend job. With some mentoring from my boss's husband, I started selling small wooden pieces in the shop window.'

Brendan got off to a great start, winning a scholarship with the Association of Woodturners of Great Britain and a woodturning competition for juniors. As well as wood, this launched a lifelong love of tools, which he started buying at a young age. 'I have just turned 35 and I am still spending all my money on tools,' he says. Brendan's dad and many of his relatives are engineers, so after A-Levels Brendan started studying engineering at university, even though he had loved a two-week work placement with a joinery company while he was still at school. 'A couple of the chaps suggested that if I enjoy it I should keep it as a hobby, and unfortunately I listened to that advice and went about studying increasingly tedious engineering subjects,' he says. 'That is until one day at university, I walked out of a class, not being able to take it anymore. I quit, went home and started my pursuit of an apprenticeship. I was back on track.'

He got an apprenticeship with a local company and, although he feared he had wasted his time doing A-Levels and starting university, by the time he started working at 18 he was old enough to use machines, so was more useful to the company and progressed faster. What Brendan didn't like about working for the business was not seeing the bigger picture. He explains: 'The downside of working for a large company was that I very much felt like a small cog in a big machine. I wanted to learn more skills and be able to see projects through from the very start to the end. In large outfits it is very common to have set roles: customer-facing, site surveys, estimating, drawing, cutting lists, machining, veneering, making, finishing and fitting, not to mention many roles in between. It was obvious to me that if I could get a grasp of each stage I would become a much more skilled craftsperson. For example, my designing skills are now much better, having had experience installing work. I can design for an easy install – after all, it is easy to make items in a workshop, less so inside a client's home.'

I always like to think the next job will be my best job, but also, you are only as good as your last job. It helps to keep me on my toes.



GROWING WORKSHOPS

Brendan's workshop space has been slowly growing since his first teenage forays into woodworking. He started out in his dad's garage, but 'he soon got fed up of me making shavings – shavings and engineering tools don't really mix well,' he says. He moved his turning workshop to 'an impossibly small bike shed at the bottom of the garden', then made a disused shed in his grandad's garden into his first furniture workshop. After a while this doubled in size and he began using the garage there as a finishing room. Growing his workshop as he slowly built up his business, Brendan did everything he could to get it off the ground: 'Printing and delivering leaflets, exhibiting at arts and crafts fairs and galleries, and so on. The first six years were incredibly tough and a steep learning curve,' he says. The first project he completed for his own business was a couple of wardrobes for a 16th-century Suffolk elm barn conversion. 'I still remember the beautiful space and regularly drive past,' he says. 'I made the ledged and braced wardrobe doors from English oak.'

For the past eight years he has worked in a 100 sq m ex-military building which has been used as a carpentry workshop on a local farm since the end of World War II. 'I have all of the usual basic woodworking machines including a dimension saw, crosscut, planer thicknesser, spindle moulder, bandsaw, wide belt sander, mortiser, lathe, vacuum press and recently a finishing room. It is all quite compact, if I were to take on anybody I would need to build an extension or move, which makes it financially not viable!' he says. 'I very much plan on staying here to work on my design and making skills.'

Brendan mainly works with domestically grown timber – 'we have such wonderful timbers on our doorstep, it seems pointless to be importing' – but occasionally uses the darker north American black walnut and bigger American cherry. Occasionally he will incorporate other tactile materials, such as a copper worktop for his kitchen or leather for drawer linings, handles and decorative panels. In the year he was born, 1987, there was a famous hurricane which blew down a great number of trees across Britain. A lot of the trees on the farm where Brendan works were blown over, and a local furniture maker bought several elm boards, but never got around to using them. 'When I moved in and we got to know each other, he commissioned me to make him a sideboard,' Brendan says.

'I have always loved tools, both hand and machine,' he says. 'This year alone I upgraded my planer thicknesser with one which has a spiral block, and I am still fizzy about it! I have recently reinstalled a spraying facility, having not had that facility myself for several years. But I am still in love with hand tools, I was also very excited to finally bag a small, curved spokeshave for a particular job for Heritage Crafts – due to global events these haven't been available for at least two years!' So far he has not learned to use CAD software – 'I'm still on my old-fashioned drawing board every week!' He hasn't used a CNC machine either, but as costs come down he may get to in the future. His favourite finish for solid timber jobs is a hard wax oil, for a smooth and durable finish. 'I started out wanting to French polish everything, but it frightens the life out of clients, and I want my work to be used every day without worry,' he says. 'A hard wax oil finish is very durable and can be repaired or reinvigorated if need be, so it works well for me.'

I didn't have a clue what I was doing as a kid or what tool to use and when, and this showed and I quickly drew blood.

Turning remains an important part of Brendan's work, but he says that although useful, 'it is just another skill'. 'It is the fastest way to make anything round, and that is a common shape in furniture work. Even the small things, it is super handy to quickly turn a few handles, pegs or legs,' he says. His advice to furniture makers who would like to try out turning is to take a short one or two-day course. 'I didn't have a clue what I was doing as a kid or what tool to use and when, and this showed and I quickly drew blood,' he admits.

INDIVIDUAL DESIGNS

Brendan's design style and business model is all about working closely with his clients, and at the moment he works 100% on commission. 'My guiding principle is to design what is right for the client. As we are all so individual, it would feel quite rude of me to impose what I think they will like on to them,' he says. 'I don't have a set style of my own. I love all the furniture periods, but I enjoy visiting a client's home and seeing what makes them tick, and then designing for that taste. This keeps it more interesting and pushes me into sometimes quite uncomfortable corners, but this is probably when I do my best work, as I have to try harder with the design.'

The design process starts with a chat with the potential client, followed by a meeting to assess the available space. 'While there I can show photos of past projects. I am looking to see what gets a reaction, both good and bad! If necessary, I can show them ironmongery catalogues and timber samples, and I walk away with a good idea of the brief,' he says. 'I then mull it over for a couple of days and work out an estimate for the client based on a specification. If they are happy to proceed, I start the designing process. If the project is something a bit different, I sketch out quick ideas for 20 minutes a day, and after three or four days compare sketches. I then take the strongest three or four ideas forward and refine them to present to the client. From there it is just a matter of tweaking the design until the client is happy.'

Recently he has been working for Heritage Crafts, the UK's advocacy body for traditional crafts. A client of Brendan's was commissioned to design the body's President's Award, and Brendan hand-made medallion boxes from oak he was able to personally select from the Sandringham estate. These were presented to some of the best craft workers in the UK. 'It was mindblowing and a lot of pressure,' admits Brendan. 'It is an incredible privilege to be working with Heritage Crafts.'

Looking forward after 12 years in business, Brendan hopes to create a few one-offs to sell alongside his commissioned work, which he says will always be the main part of his business. 'Commissions are great, as I get paid something at the end of the day,' he says. 'Making items to then sell is very tricky, as galleries often take a 50% commission, so the item becomes very expensive unless you start batch-producing, which I don't really want to do as I love one-offs. Having said that, I would love to make a few one-offs in various styles I have been mulling over for a few years now. I would love to go a bit crazy, put them out there and just see what happens!'

He adds: 'I would like to keep my furniture practical, but make it more luxurious. A notch or two up the exclusive ladder, although not by using more expensive or rare timbers, just a stronger emphasis on tactile design to make my work stand out a little. I have a few ideas, but I haven't had time to put them into action.'

Always excited about the next piece of work, Brendan is looking forward to 'possibly the best commission of my career', which he will be working on early next year: 'An old-fashioned oak study with a secret door and several secret cupboards and drawers. I really can't wait! I always like to think the next job will be my best job, but also, you are only as good as your last job. It helps to keep me on my toes.' Other commissions in the pipeline include a large dressing room and a dining table – and a pair of Lynx helicopter seats he has been asked to turn into office chairs. 'Working next to an army base, I often get unusual requests for leaving presents,' he explains.

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HOME OFFICE DESK

OLI RENISON MAKES A BIRCH PLYWOOD DESK FOR A HOME-WORKING CLIENT

Since the recent Coronavirus outbreak, many people with office-based jobs have been making the transition to working from home. For self-employed furniture makers such as myself this has sparked a rise in enquiries for office pieces, and with these pieces destined for the home rather than corporate spaces, it seems people are more inclined to consider the aesthetics of such furniture more carefully, and want to be more invested in how things look and, of course, how they work for them too.

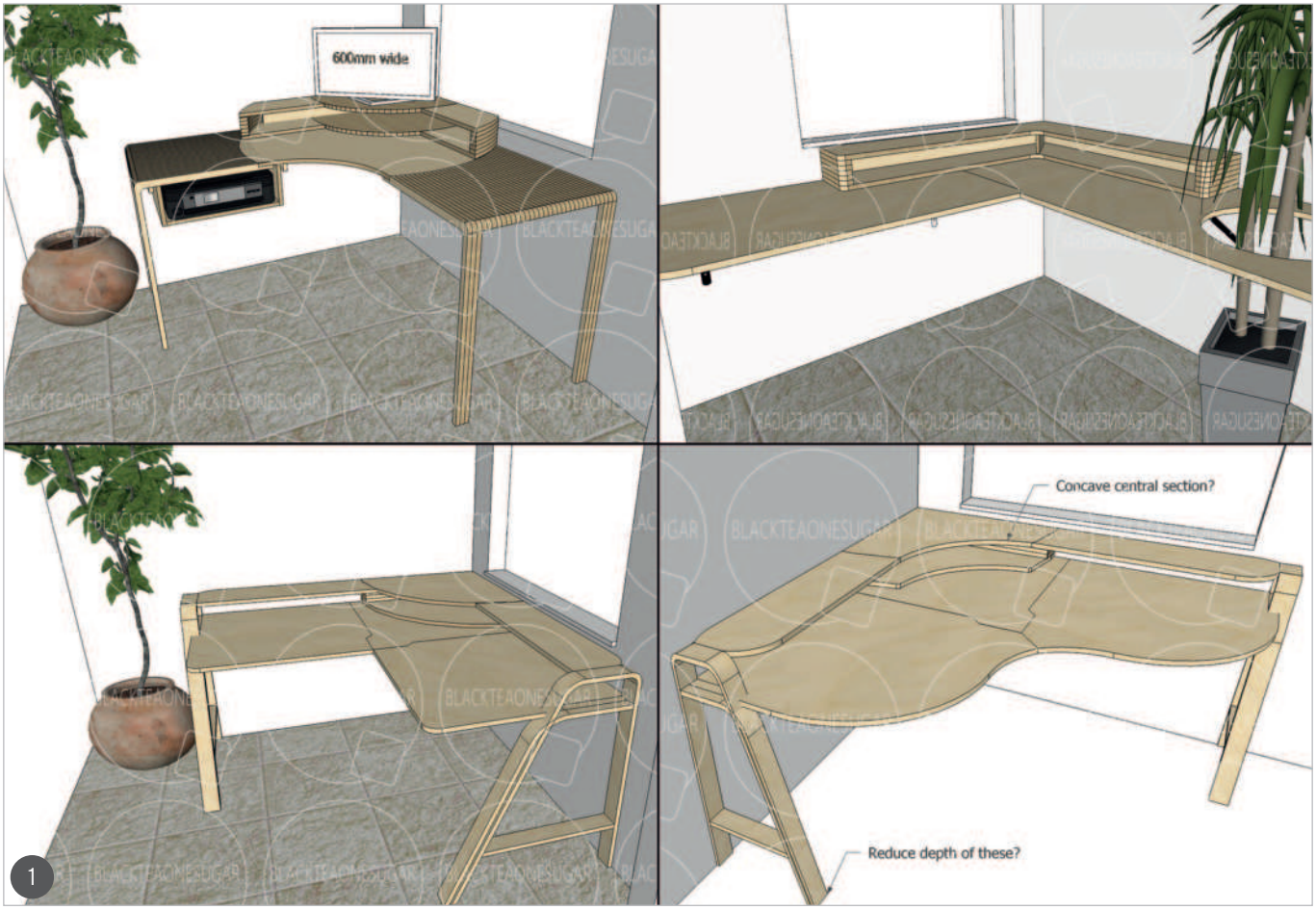
My clients for this desk were fairly local and had seen my workshop in passing, so popped in one day for a chat to see if I could help with the sort of piece they were after. They are very practical and visually-minded, and wanted a special desk that would work as part of a home office but would also be visually different and something to enjoy owning, something of a treat. After an initial meeting in the workshop where the clients were very interested in what I was up to, I set about coming up with a design.

DESIGN REQUIREMENTS

I always like to take some ideas and inspiration from a client before designing a piece and was really pleased that in this case, my clients were really interested in the design and making process and had provided me with a document containing many photos of visual details they liked, what they needed the desk to do in a practical sense, and some target dimensions such as desk height, monitor shelf size and suchlike.

All of this is always a great help and a big timesaver when designing a one-off piece for someone, otherwise you can tend to go a long way down one path on something that perhaps isn't what the client had in mind and have to turn round, go back and start down another path. Much better to have some time-saving pointers early on.

The practical requirements for the desk itself were actually fairly simple. A surface to work at and to place a keyboard and mouse on, space to stow various small items and papers and a raised surface to bring the monitor up to a comfortable working



PHOTOGRAPHS BY OLI RENISON

1 The design evolved through several variations **2** The final design, shown in SketchUp

eye level. The clients wanted a separate unit under the desk upon which the printer could be housed, with some cable organisation and with additional drawers for storing files and stationery.

One of the material details in the inspiration sheet came up a few times, and that was birch plywood – and in particular, the edges of birch plywood that other makers had used to striking effect and could be seen on the likes of Pinterest.

Birch ply is a really beautiful and versatile material, from its naturally pale and understated flowing grain patterns through to the contrast in its edges, where everything looks very engineered, with striking light and dark lines of long grain and end grain. It looks very contemporary when used in the right way and yet still retains a certain warmth of look and feel that wood as a material does so well. I was more than happy to be basing my design around it.

The concept of the piece that evolved was to take full advantage of the material's properties, highlighting and maximising the linear look of the bare edges by stack-joining the ply to create surface, and using elements from the clean faces of the boards to provide a strong visual contrast.

With a combination of hand-sketching and fully detailed drawings, colour-rendered in SketchUp, sent backwards and

3 The braced leg template on a sheet of ply, doubling up as a forming jig **4** A track saw made the bulk of the straight cuts
5 Finishing the release cut with a jigsaw **6** Routing the leg shapes with a bearing-guided router cutter **7** The completed longer outer leg sections

forwards by email along with a sample deli board showcasing the technique, I was able to present ideas to the clients, the evolution of which I delivered and installed a few weeks later.

THE LEG TEMPLATES

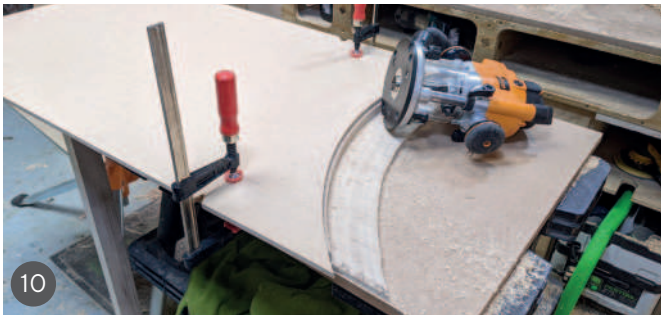
The first stage in making was to produce templates for the leg sections which, when stacked up, would form the wings of the desk, coming out from the central hub section. Each wing was to be made up of 34 layers of 18mm ply. All the layers would be based off the same template, but the outer three, front and back, would extend beyond the others, right down to the floor to form the legs. I made the template 30mm wide (which would translate to the desk thickness) and in 18mm thickness of MDF using a track saw, a bearing-guided router cutter and radius template to form the corners.

My template also had to double up as a router jig, so to support the large L-shape which was flimsy at this stage, I screwed diagonal braces across at several places.

These braces would support the shape of the template and also provide me with decent handholds and protection for when I would come to machine the pieces on the router table later.

I marked out all the leg and top infill pieces I needed, plus a spare or two, on to my ply sheet, nesting them as economically as I could while being mindful to leave some room to actually cut them out.

I had to do a lot of the cuts across the grain of the ply and, rather than use a jigsaw or bandsaw, which would tend to cause a lot of breakout above or below the cross-grain cut, I used a track saw right into the corners, which gives a lovely clean cut.



8 Biscuit-jointing the stacking sections **9** Laying the completed wing sections across the rod **10** Cutting the rebates on to the wing sections **11** Test-fitting the three main sections **12** Final fitting of the central hub section **13** Cutting Domino joints into the hub and wings

I then released the pieces fully with a jigsaw fitted with a fine-cut blade.

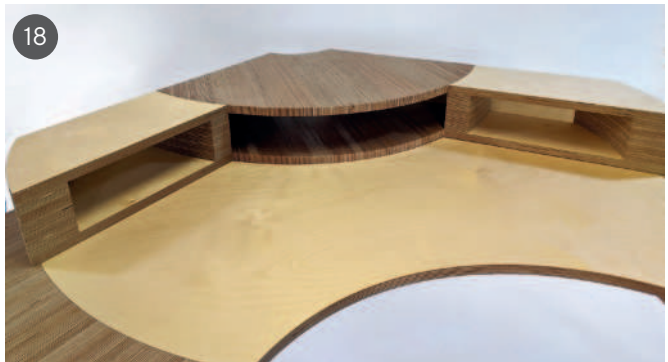
I used a template profiling cutter with a double bearing on a router table to cut each section flush to the shape of the template. Normally a shape such as this can be fairly tricky to machine as, being relatively narrow, it'll tend to deflect as you push it up against the bearing if you're only using double-sided tape to fix it to the jig, for example.

In this case, however, I had the luxury that at least one face of every piece I was machining would not later be seen and so I was able to place several screws along the jig, holding it very nicely in position. Once the pieces were stacked up, these screw holes would be covered forever!

THE DESKTOP

Rather than attempt to glue up the entire top in one, I decided I would glue up three or four sections at a time. This would simplify things and I wouldn't be so pushed to get adhesive on all faces and everything into clamps before the first faces started drying too much.

Alignment of each piece was critical here. When you glue up multiples like this, if you make small errors on each piece the mistake can be multiplied, so that by the time you get to the last piece you can be a long way off. Gluing up stacks such as these can also leave each glue-covered layer very prone to slip-sliding around under pressure. To help keep everything nicely lined up, I cut biscuit joints along each piece, which would both make the joint stronger and keep things well-aligned. I could then glue, stack and clamp each section in time, allowing the glue to set before the next section.



14 Arranging the parts for the upper section
15 Building up the components for the monitor stand
16 Gluing up the monitor stand assembly
17 The desk in place and put to use
18 Detail of the central section
19 The monitor and keyboard in place **20** The finished desk

With each of my wing sections glued up into multiples, I could bring them all together at once, simplifying the final, large glue-up. It was critical to keep the sections dead flat here so, along with my positioning biscuits, I used several sash clamps above and below the work to equalise the pressure and repeatedly checked for flatness with a long rule as I brought it all in tight. Once it was together I was able to temporarily mock up the position of these wings across my drawing rod to get a sense of the layout and scale.

THE CENTRAL HUB

The next step was to produce the template for the central hub section. This was to be a large quadrant with an additional curve cut into its front which would form the niche in the desktop where you sit. I actually needed two templates for this as I had to produce both a male and female curve that would nest against each other perfectly. One was to be the outside edge of the hub, and the other would be the outside edge of the wing, which needed to match exactly against the hub. You can't just cut two curved profiles from one template and expect them to meet perfectly, as you have to take into account the diameter of the cutter and the resultant offset of the line this gives, so the best solution is to produce a pair of templates.

Essentially, with the use of different diameter guide bushes, you can offset the router to produce a male and female template either side of your profile which, when brought together, fit precisely. I never seem to practise this method frequently enough that it doesn't involve some degree of head-scratching each time I do it, as the process and the maths of it comes flooding back to me, but with a couple of practice runs on scrap material that were coming together really nicely, I was ready to cut the real thing!

The central hub section was 18mm thick and the wing sections to which it was to be jointed were 30mm, so I had to not just cut the required shape on the wing sections, but that shape also had to be a rebate so that the hub and the wings would be flush next to each other. I wanted the underside of the rebate to be pretty wide so that it would allow me to pass bolts through it later, into threaded inserts, and bolt the sections together firmly, along with biscuits for strength and alignment.

I marked the final position that my template needed to be and made a series of cuts with the router, moving the template back a little each time until I had routed away a good bit of material and was able to make my final pass to make the mating edge.

TEST FIT

With the wing rebates cut, I could make a quick test fit of the three main sections of the desk. I had to do this on top of my bench, as so far the desk was not self-supporting. In fact it would never be self-supporting due to its design, so would need to be fixed to the wall too.

All of the sections fitted pretty well but there were a few little high spots here and there on the rebate which were preventing the hub section from sitting flush with the wings, so I pared down and refitted each piece until they were right. I also cut a little excess from the rebate length and shaped the edges using a template to mirror each side.

Once it was flush, I cut several Dominos into the edge of the rebate and into the edge of the central hub. This was to aid in alignment and also to add some strength to what would be potentially the most stressed part of the desk.

With this together and fitting, I drilled through from underneath, adding threaded inserts into the hub section so that the wings could be bolted on to it. These all had to be assembled in the room, as the access was fairly awkward and it wouldn't have fit through the doors.

I then cut all of the legs to length, and having already given the laminated wings an initial clean-up, I could now spend a bit more time on them and get them really nice and flat and smooth in readiness for the top centre console section of the desk to be constructed. This central section would be where the monitor was to sit.

THE CENTRE CONSOLE

This upper section was made in a very similar way to the wing sections below and shared very similar construction methods. Coming out from the monitor stand surface would be another set of narrower wings, with space created between them for storing small items.

Once everything had been cut out close to size and shaped with another of my increasing array of 6mm MDF templates, I could lay everything out to check the fit. I built up all of the components that would form this section, the lower ones could be glued and screwed into place and the final top layer would be just glued on.

Before I glued the final layer on top, I routed a channel underneath, into which I bonded a rectangular steel bar with epoxy resin to give the monitor stand more strength and resist any sagging over time due to the weight of a large screen. When the epoxy had set I could do a final clean-up on the inside faces and then glue it all together.

FINAL TOUCHES

Everything for the main desk was now pretty much ready for a final clean-up and finishing. Before I did all of that I just had to make a panel underneath at the back that would take a multi-point extension lead and help to keep the cables tidy. I also cut small quadrants from the back of all layers so that cables could be fed up from behind to supply the monitor, mouse, computer and telephone.

I also made a small under-desk drawer unit that was sized to take a printer and scanner and have enough drawer space for the various bits of office paraphernalia that one needs.

Installation was fairly straightforward as I had made everything so that it bolted together in a logical sequence. This was welcome, as the small room meant a fair bit of work lying on my back on the floor, underneath the desk, as if working on a car and trying not to drop bolts on to my face!

Supports along the back edges, bolted all the way along, bridged the wing and hub sections, adding strength and allowing me to screw through them into wall fixings. With the central monitor section added and bolted down tight, the whole desk was reassuringly solid in place and looked brilliant.

The clients were eager to add computer equipment and an office chair to the mix which, along with a nice tall plant and some sunshine coming through the blinds, really gave the whole piece context and it immediately looked right at home!

THE CARPENTERS' LINE

A NEW EXHIBITION IN LONDON SHOWCASES 1,300 YEARS OF WOODWORKING MASTERY FROM HIDA, JAPAN

Japan House London is hosting The Carpenters' Line: Woodworking Heritage in Hida Takayama, an exhibition exploring the art of master woodworking from the densely forested Hida region of Gifu Prefecture, central Japan.

The exhibition's title refers to both the lineage of woodworking in Hida and a sumi-tsubo – a carpenters' line – a fundamental Japanese carpentry tool used for marking straight lines on wood. Starting with the wood itself, the free exhibition also explores tools, techniques and products synonymous with Hida's woodworking heritage.

Over 1,300 years of woodworking history are conveyed through exhibits ranging from works by historical woodcarvers to interactive examples of joinery typical of Japan, as well as contemporary chair design with international influences. Also highlighted is the historical role of highly skilled craftspeople from Hida in building the shrines and temples of historical capitals, often in lieu of paying tax.

WOODWORKING IN HIDA

The exhibition celebrates the essence of Japanese craftsmanship through the story of an enduring woodworking heritage cultivated in the Hida region. From the raw materials of the Hida forests and the tools developed to work them to the involvement of Hida craftsmanship in global furniture design today, visitors to the exhibition will be immersed in an extraordinary craftworking legacy.

The city of Takayama in Gifu Prefecture has maintained a vibrant woodworking tradition for over 1,300 years, developing in that time an international reputation for its highly skilled carpenters. First recorded in the eighth century CE, the woodworking skills of these craftspeople were provided to the imperial capital in place of taxation, such was the importance placed upon the carpentry techniques originating in Hida. It was the extraordinary skill of these Hida craftspeople that built many of the famous shrines and temples still seen in the ancient capitals of Nara and Kyoto today.

The practice of woodworking still thrives in Hida today, with internationally renowned workshops well known for their collaborations with international designers, the results of which can be seen in museum collections across the globe. The exhibition will include a series of installations demonstrating the legacy of skill and innovation that runs as a continuous strand through Hida's woodworking history.

PHOTOGRAPHS BY IGARASHI JUNYA

WOODCRAFT TECHNIQUES AND MATERIALS

From ichii ittō-bori, or sculptures carved from Japanese yew and mageki (wood bending), a vital element of contemporary furniture making, to latticework and masterful joining techniques, The Carpenters' Line highlights the materials and techniques from this region of Japan, through video, displays and a rich variety of exhibits.

TECHNOLOGY AND INNOVATION

The Carpenters' Line will shine a spotlight on where centuries of tradition meet new technology, maintaining working lifestyles while adapting to new methods of manufacture. Hida boasts a design legacy of excellence that continues to this day as exemplified by makers such as celebrated furniture manufacturer Hida Sangyō.

PRODUCTS

For hundreds of years, products from Hida have embodied beauty and utility both in Japan and, more recently, farther afield. Exhibits will include delicate Hida-shunkei lacquerware, intricate kumiko latticework and the culmination of several craft techniques in an example of a yatai. Yatai are large, ornate festival floats that are paraded during the spectacular Takayama Festival, which takes place twice a year in spring and autumn.

PEOPLE

As the exhibition title suggests, the craftspeople of Hida are at the heart of The Carpenters' Line. This exhibition shines a spotlight on the skills and lives of those people whose livelihoods have depended, and still depend, on working with the natural materials of their local environment. Visitors can connect with the people aurally by listening to the stirring medeta, a celebratory song sung by residents of the Hida region, as well as through soundscapes that allow the visitor to inhabit the world of the craftspeople.

The Carpenters' Line runs from 29 September 2022 to 29 January 2023. Admission is free and booking is recommended. A series of themed events and workshops will also accompany the exhibition. More details are available on the Japan House website.

japanhouselondon.uk

PHOTOGRAPH BY NATHAN DAY

ARALUEN LEG JOINT

AUSTRALIAN FURNITURE MAKER **NATHAN DAY** SHARES A SUPER-STRONG JOINT FOR AN EXTRA-LONG TABLE

This is the leg joinery used in our Araluen table design. We have built the Araluen at lengths up to 4m, so the connection between the leg and top needs to be immensely strong. The table itself is built as a torsion box but has chunky internal border rails, which the legs connect to. The jointed face has a slight angle machined on to it, meaning the legs flare out, putting extra strain on the joint.

The Dominos act as a locator and for alignment of the leg to the table top. The joint strength is derived from the 80 x 8mm threaded steel rods and epoxy resin. We've used threaded rod and epoxy many times and add it where we feel a joint will come under extra stress due to span, angle or weight. I believe the origin of this method comes from John Makepeace and Parnham College.

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