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WELCOME

Times are changing.

In a woodworking world still dominated by white men, women and makers of colour are putting their marks on the map – and we meet just a few of these dynamic forces in this issue of *Furniture & Cabinetmaking*.

Ethiopian-born Jomo Tariku wants modern African design and the inputs and perspectives of Black makers to become as much part of the pantheon of furniture design as Scandinavian or Japanese style. Vanessa Johnston found her way to woodworking when she restored a dilapidated houseboat in Seattle. Now she is a Chippendale-educated professional furniture maker building the workshop of her dreams in the Scottish countryside.

And cover star Larissa Huff, who runs Pennsylvania's Lohr Woodworking Studio with business partner Rob Spiece, tells of her work to craft her own unique style, while sharing the secrets of furniture making with students at the workshop where she learnt her trade.

This issue is packed with diversity in our projects too. From turning bun feet to honing your veneering skills and from carved strapwork to swallowtail joints, there are plenty of things to learn and challenges to take on.

And in the spirit of change, we have a new interpretation of the humble TV cabinet, redesigned by Paolo Frattari to suit 21st-century technology – and style.

*'Everyone thinks of changing the world, but no one
thinks of changing himself.'*

LEO TOLSTOY

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COVER IMAGE Larissa Huff and Rob Spiece of Lohr Woodworking Studio, photographed by Erin Clark

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



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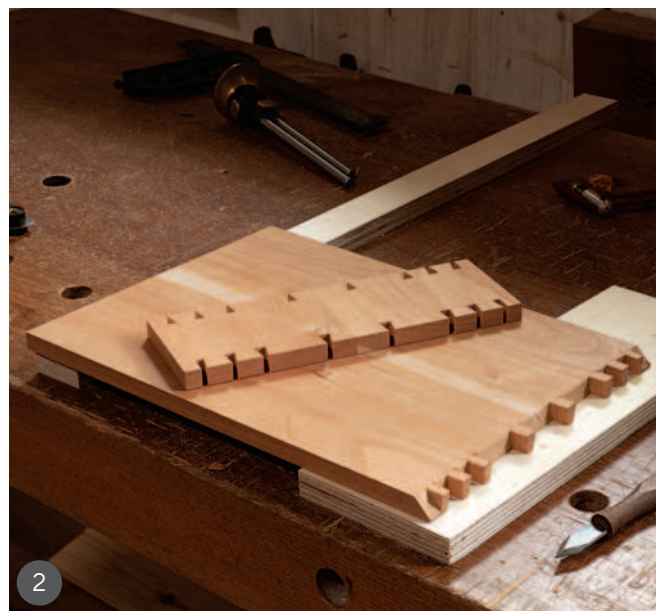




THE NIGHT & DAY BOX

ISRAEL MARTIN DEMONSTRATES HIS SKILLS WITH
THIS SHOWPIECE BOX IN CONTRASTING TIMBERS

I had been planning to attend the London International Woodworking Festival (IWF) and I wanted to take a piece of my furniture there to showcase some of my skills. This piece was mainly built as two separate boxes with two drawers each. They were then fixed together by four wooden sticks glued up to both boxes. The carcasses were made in cherry looking for the grain to follow on the sides, as if it was one piece. Each box has a walnut front drawer and a sycamore one. The intention was that people would enjoy playing around with the box.



PHOTOGRAPHS BY ISRAEL MARTIN

1 Starting to build the carcass: dimensioning the wood 2 The book-matched cherry 3 Detail of the joinery 4 Dry-fitting the carcass

BUILDING THE CARCASS

I needed to build two almost equal carcasses. Everything starts with dimensioning the wood. I used the book-matched cherry boards with continuous grain on the top and sides, and tried to also match the bottom pieces only at the front. On a simple box like this one the layout of the dovetails was a nice way to add some interest to the look of the piece; also, dividing the outer dovetails makes a stronger joint with more glue surface. Because the sides were too narrow, I needed to be very careful on the dry fit so I didn't break the parts. I joined the two carcasses at the end. The drawer dividers are joined with mortise and tenons and the back goes into a groove.

MAKING THE DRAWERS

I used figured sycamore and walnut crotch for the drawer fronts and quartersawn maple for the sides and backs. I love to make London pattern dovetails on small drawers like these and, as I normally do, sliding dovetails for the back joinery if the pieces are thick enough. To determine the back length I used the distance between the dovetails' shoulder line plus around 0.5mm more, so that the drawer is wider on the inside. The contrasting woods and the crisp dovetails make simple drawers much more interesting.



5 One box ... 6 ... two boxes! 7 The drawer fronts 8 Making the dovetails 9 London pattern drawer dovetails 10 The sliding dovetails for the back 11 The finished drawer, ready to be cleaned 12 & 13 Applying shellac to the boxes and drawers 14 Adding blue tape on the drawers helps when applying the finish 15 The drawer is complete but without the pulls





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16 The pulls in place on two drawers 17 Making the grooves 18 The boxes with the sticks
19 The boxes fixed together 20 Planing the walnut crotch



FINISHING

For projects like this I apply the finish to the carcass once it is completely glued up. I didn't apply finish to the inside of the boxes, but I applied it to the exteriors before joining the two boxes together. I used blonde shellac mixed with alcohol with a simple proportion of small spoons in a 250ml jar. Then I added a couple of coats of beeswax and buffed with a cotton pad.

APPLYING FINISH ON DRAWERS

When applying finish on drawers, I like to apply it only on the drawer fronts and just on the dovetails, on the sides. I use tape to prevent the finish getting on to the sides. This allows me to take some shavings off and adjust them with the plane if the drawers change a bit when they are taken to their final destination. I also apply finish on them before fixing the pull as it is easier and any glue squeeze-out when fixing the pull can be easily wiped off.

STICKS TO JOIN THE TWO BOXES

I made the grooves for the sticks that joined the two boxes using chisels and a small router plane. I used figured maple to make the sticks and glued the front and back ones completely. They were attached with the same grain direction as the carcass but the side ones are only glued on the first half (around 60mm) and I left a 1mm gap at the back for wood movements.

PLANING DIFFICULT WOODS

I use a bevel-up smoother with a 32° micro bevel when I have to plane woods with more end grain than long grain, as with this walnut crotch. If the wood has the grain running in several directions, mixed on the same length or when planing book-matched pieces (grain goes in one direction on one board but the other runs in the opposite direction) I use the same smoother with a blade with 43° micro bevel.



CARVING CONNECTIONS

RENOVATING A HOUSEBOAT
LED SEATTLE-BASED DESIGNER
AND MARKETER **VANESSA
JOHNSTON** TO A NEW LIFE
AS A WOODWORKER IN
RURAL SCOTLAND

Ten years ago Vanessa Johnston bought a run-down houseboat, and started to do it up herself. At the time she was a designer and marketer in the Seattle area, working full-time for medical device manufacturers and tech firms such as Amazon – but she admits it never inspired her. ‘I grew up on a small farm in Montana, in the northwestern United States, so I was raised to be pretty self-sufficient and with a very do-it-yourself ethos,’ Vanessa says. ‘A decade ago, I bought a houseboat that was in a fair state of disrepair and set about renovating it and adding a second storey. It was through that process that I fell in love with woodworking and decided that I needed to learn how to do it properly. I remember sanding the dining table I was making on the deck of my houseboat, Otis, and realising that this was the thing that made me happy, that this was what I needed to be doing with my life.’



At first Vanessa was largely self-taught. 'I spent a lot of years learning by building things wrong and then finding a YouTube tutorial to tell me how to fix it. I'm the first to admit that is not the right way!' she says. 'As soon as I was financially able, I sold everything I owned, including my houseboat, and moved to Haddington [outside Edinburgh, Scotland] to enroll in the nine-month professional furniture course at the Chippendale International School of Furniture. With a basic understanding of tools and a willingness to learn, the course provided me everything I needed to create a solid woodworking foundation.'

She adds: 'It's an incredibly intense programme, and you learn how to make high quality furniture with traditional and modern methods. When I graduated Chippendale I had completed an entire furniture suite, including a freestanding cabinet, dining table, chair, two side tables, a hand-carved and gilded mirror, multiple candle holders, breadboards, jewellery bowls and stands, and other small home accessories. The Chippendale Society (no relation to the school) awarded me the coveted Chippendale Society Prize for Excellence for my body of work at the end of my year of training.'

As well as furniture-making, Vanessa fell in love with Scotland while she was training there. She returned to Seattle after graduating, opening a community woodshop and developing a curriculum of woodworking classes. But she had just taught her first class and nearly finished her curriculum development when the Covid-19 pandemic hit and everything was shut down, including the space she was renting for her own workshop. 'They still haven't re-opened, effectively cancelling my business for commissions and teaching indefinitely,' she says.

THE WORKSHOP OF DREAMS

She decided to make the best of things and pursue a goal she had had of studying the business side of running a company, so she enrolled in the Master of International Business programme at the University of Dundee, moved back to Scotland and focused on setting up and running a furniture-making business there.

Along with her partner Adam she has rebuilt two historic barns in rural

Perthshire into what she calls 'the workshop of dreams', and is in the process of renovating the 250-year-old farmhouse where they live. 'The workshop is in two centuries-old converted barns, and is filled with light. Separated by swinging doors, the office, kitchen and bathroom comprise a wing where the less sawdusty side of the business is conducted, complete with a giant live-edge walnut desk. The machine shop and loading bay attach to that and contain pretty much every modern woodworking machine you could want and a dust collection system. Through another door is the assembly workshop, which has separate sanding and finishing rooms for dust containment, and the workbenches. The benches are flanked by giant windows set into the old stonework and offer sweeping views of the surrounding farmland. Mine looks out on to the paddock and I often stop to watch the horses. The shop build started in January of 2020, literally from the ground up, pouring the slab and laying wood floor, and it's been operational since late summer of 2020. The plan is for this to be our forever home.'

Vanessa loves using both traditional hand tools and modern machinery. 'I employ a variety of each for every project,' she says. 'My preference is to use our modern tablesaws, spindle moulder, planer, thicknesser and router set-ups to create the overall milling and shape of a project before finishing it with hand planes and chisels. The modern machinery allows for precise square cuts, while the hand tools allow for more artistic and bespoke touches. My carving chisels are some of my favourite tools during long winter lockdown evenings. It's fun to carve little gifts to give for thank yous, birthdays or housewarmings, such as spoons, cheese knives and letter openers.'

While she doesn't avoid any tools, she always approaches the spindle moulder with extreme caution, and never alone. 'It's an incredible machine and immensely helpful when used properly, but it could cause serious injury if approached incorrectly or casually. It still gives me nervous butterflies when it roars to life,' Vanessa says.

LET IT SHINE

Her current favourite wood to work with is wych elm. 'The deep caramel colour and green highlights in the grain aren't like any timber I've seen outside of Scotland. Finding a piece with the rare jade streaks in it feels like panning for jewels when milling reveals it. When being processed, the sawdust gives off a faint smell of fresh pastries. Its absolute magic.' When it comes to finishing, less is more. 'Protecting a piece dictates the finish, ultimately, but my goal is to leave the timber as natural as possible and highlight its innate beauty. To that end, Osmo Polyx Oil, sometimes with a white wax applied as a final water-resistant step, is generally my go-to. It protects the wood really well but leaves the grain touchable and allows the natural colour and texture to shine.'

In fact Vanessa's ethos is all about letting the tree's original nature shine through the finished product and creating connections between the two states. 'My pieces are natural and have an agrestal quality that connects them to the trees they were. I want the raw nature of the wood to shine, refined enough to be functional, practical, beautiful and highlight the material's native beauty. Following that, my goal is to have the people who touch and use my furniture feel connected to it and to the species it is made from,' she says.

'Ultimately, I also want the business to be as sustainable and connected as possible, using timber from local estates whenever I can, remaining connected to the community, heating our shop with scraps too small to use for anything else. We've also planted trees on our farm and plan to contribute to re-forestation and forest management to help cultivate a loop of sustainability. Everything is connected.'

Inspiration comes from both contemporary and organic forms. 'Nordic and Scandi aesthetics excite me, as well as Japanese construction methods and the way the culture honours the environmental connection. Closer to home, there are some awe-inspiring makers who are using steam bending and sculptural methods to make wood flow into soft-edged shapes that I find incredibly compelling. I love the idea of furniture that calms and serves the home with beauty and functionality.'

One of her favourite pieces she has worked on is a speculative chair made from ash and elm, which she has kept. 'Some of the complications of the seat to arm and leg joinery are hidden within the joints, but I know how beautiful they are and how much I learned from making them. I used so many techniques, from hand-travishing to Maloof-style tongue and rabbit joinery and bent laminations. Each step was absorbing. I love the final product, but I loved the journey to create it even more.' This was also her most challenging project so far. 'I learned so many new skills and techniques through the process of creating that chair. There were times I had to step away for a bit and make something that I felt knowledgeable about, like a turned candle holder or ring bowl or a small table, just to remind myself that I did already know what I was doing in some ways!'

SPREADING THE WORD

Until the Covid-19 pandemic, teaching was a key part of Vanessa's work. 'I had incredible instructors at Chippendale,' she says. 'They inspired me to want to open the minds of students the way they did for me. When I was living in Seattle, I taught simple woodworking for women, and it was so fun and gratifying. One woman in her seventies initially came to me to ask if I could just show her how to use a hammer and screwdriver to put together a flat-pack shelf, and she left my class a couple of months later with a stool she had made herself. We put on a pot of coffee and had fresh baked cookies while we laughed a lot.'

'It was such a safe, empowering space. The pride on my students' faces was buoyant. I specifically want to teach courses geared toward women – in addition to gender inclusive classes – because I think that many women have not been socially conditioned to know the simplest of skills when it comes to furniture, home improvement, maintenance and many other things that are considered "manly". I wasn't taught these things growing up. Because of that, learning from a man who doesn't

remember ever having not held a hammer can be really intimidating, and that can lead many women to quit. I want to make them feel capable and help build self-reliance and confidence with them.

'I see how that growth filters into other aspects of everyday life, allowing them to try new things and be more fearless in so many ways. It's empowering, and if I can be a small part of that journey, I'm honoured. I'm looking forward to offering classes here in Perthshire once it's safe to do so again. Our range will include beginner woodworking, woodturning, steam bending, and more advanced courses that will allow the student to design and work on their own projects. I will focus on intro and growth classes for women, in addition to weekend courses.'

Vanessa's experience of woodworking has been that it is something of a man's world. 'It can be challenging to have to prove yourself just because of your gender, but I've always been drawn to activities that are male-dominated,' she says. 'I was one of two women in a community of 50 boats when I lived on a houseboat in Seattle, and have spent years enmeshed in the motorcycle and mountain-climbing communities there, both very male-dominant, so gender discrimination is nothing new to me.'

'The Chippendale School never made the six female (out of 20 total) students in my year feel like we had anything to prove based on our gender, and I think that was a gift as far as confidence and welcome into the industry goes. The furniture-making world is definitely a mostly male world, and clients often express surprise that women are undertaking such businesses, but as a whole the community of makers here have been incredibly welcoming, evaluating skill and expertise over gender. I found American makers to be much more entrenched in traditional gender roles. Even after I'd explained my training and background, many of the men I worked alongside still expressed surprise that "a girl made that" when they met my work in person. It can be – and

often is – incredibly aggravating, but I'm learning to appreciate the element of surprise. Far from being intimidated by male ego or expectation, I find it gratifying to make work that earns respect, regardless of prejudice.'

So does she prefer teaching or making? 'Oh, what a Sophie's choice! I'm pretty strongly introverted by nature, so as much as I love teaching, it does exhaust me, and I need my alone time making something beautiful to recover. I never need teaching time to recover from woodworking though, so I guess nature will out. Woodworking came first, and it still does, but I love both,' she says.

Her top piece of advice to other woodworkers is to get comfortable with chisels and hand planes. 'Machines are great and they will make your life a lot easier, but hand tools will allow you to create details and specialities that really complete your projects and make them extra special.'

Vanessa loves working on commission. 'When working with a client, my preference is to visit the space if I can and get to know both the environment and the person who will have the furniture to get a feeling for the style, mood and overall feeling desired,' she explains. 'That has obviously been much more difficult and dangerous this year, so I've used video calls a lot more. After that, I sketch out designs the old-fashioned way, with paper and pencil. I'll get 10 to 20 very rough ideas down before refining and discarding, then create a three-dimensional rendering of the final choice to be presented to the client. The client may ask for slight modifications at this point, and once those are made and we agree on a final design, the milling and making begins!'

A speculative furniture range is a long-term goal, but there are plenty of other projects to work on first. 'It's a dream to be able to design and build a line of furniture entirely of my own imagining, but the unique challenge of bringing a client's dreams to life is an absorbing and triumphant thing,' Vanessa says. 'I love the

'Far from being intimidated by male ego or expectation, I find it gratifying to make work that earns respect, regardless of prejudice.'

look on their face when they see the final piece that was once just an idea they had for a space they know well. I like being able to allow their space to serve them better and help them feel more comfortable and welcome in their home.

‘During our multiple lockdowns, we’ve seen that people have been rethinking the value and set-up of home furniture. Some people are setting up long-term home offices or upgrading their existing ones, others are rethinking how they live in their home and are willing to invest in better, custom furniture that serves and complements their lifestyle. It makes sense that when we have all been spending so much time in our homes, we now know better what we need for our efficiency and comfort. I hope that this continues, and we carry on making desks and family tables and more comfortable spaces for our clients.’

Her current big project is renovating her 250-year-old farmhouse with her partner Adam and elderly dog, Sparrow. ‘We are building out the interior of our custom wardrobe and finishing our Scandi-inspired oak kitchen right now. The opportunity to build our dream house together is such good fortune, and sometimes so overwhelming. I wouldn’t change it for the world, though. We are planning to build the banisters along the second storey and staircase next. The stairs are handmade, of course, from oak and ash, so the banister will match that. It’s a steam-bent focal piece and will be showcased when you walk in the front door.’

Looking forward, she expects to continue much in the same mould, but adding more experience and richness. ‘We say “after Covid...” a lot, and it is true that we will be able to ramp back up once the world is open. A lot of our business model includes a very connected customer experience, and that has been difficult to provide during lockdown. I’m really looking forward to being able to see client spaces in person and consult with them in the same room. Similarly, I’m really excited to be able to welcome people back on site for updates and classes.’

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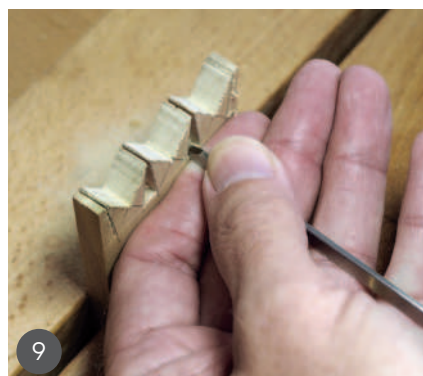
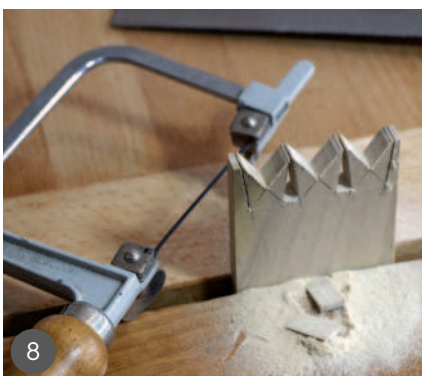
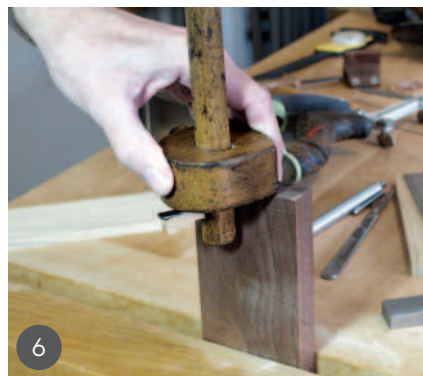
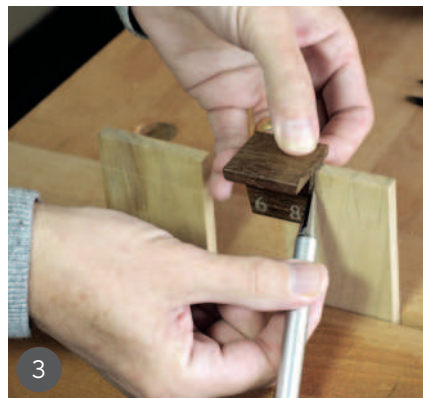
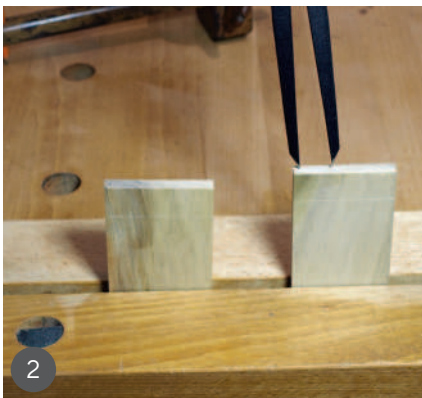
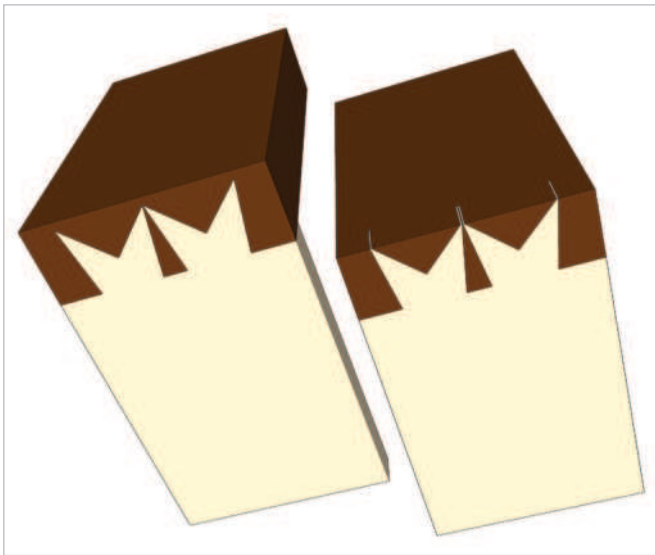
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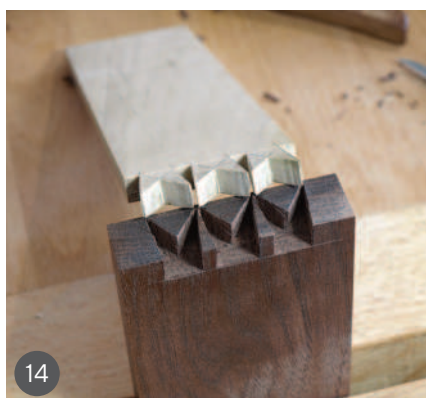


SWALLOWTAIL JOINTS

MITCH PEACOCK GIVES DOVETAILS THE BIRD
AND HATCHES THE SWALLOWTAIL

A recent unplanned stay in hospital gave me the chance to play around with alternatives to plain old dovetail joints for drawer and carcass construction. With nothing else to occupy my mind, I was amazed at just how many I came up with. However, given that all of them were more complicated to prepare than a plain dovetail, it's no surprise they haven't found popularity. That said, I present here my first attempts at making what I call through and lapped swallowtail joints.





INITIAL PREPARATION

1 Contrasting woods really show the joint off but will also emphasise any inaccuracies when complete. I used walnut and poplar, in dimensions suitable for a small drawer. To begin, the tail and pin boards were prepared square and true, with ends shot.

MARKING OUT

2 Spacing of the tails isn't critical, but I used dividers to step them off equally.

3 The outside of the tails were pencilled in using an 8:1 gauge.

4 To create the swallowtail profile, diagonals were drawn on the plain tails.

5 The outside triangle of the four created being set for removal. By using diagonals,

I have ensured that sawing the pins is as easy as possible.

6 The tail boards' thicknesses were scribed on the pin boards.

CUTTING

7 Sawing the tails is similar to sawing dovetail tails, with the addition of removing the triangular section.

8 I like to saw as much as possible of the waste away...

9 ... before cleaning up with chisels.

10 The tail board was used to transfer the shape of the tails on to the end of the pin board.

11 Shading around the tails makes the pin layout very clear.

12 The same vertical kerf was used when sawing the pin sides and the triangle to fit the swallowtail notch.

13 Chopping out the waste on the pin board was done in two stages. First, down to the triangle, and then with a thinner chisel either side of the triangle.

14 The waste in the tips of the swallowtail pins was cleaned out using a scalpel.

15 If you attempt this joint and can't clean out the waste right into the corners, then simply slice off the back edge of the tail tips.



16 The lapped swallowtail joint after planing flush.

17 The through swallowtail pins were sawn to depth, but unlike dovetails, the waste could not be sawn away as the external kerf was narrower than the depth of my fretsaw blade.

18 The through swallowtail joint after planing flush.

19 The finished joints after a wipe of mineral oil to enhance the contrast.

These joints were fun to try out, and could make a nice feature for a piece of furniture, but they are more work and less forgiving than plain old dovetails. Have a go yourself.



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RADIAL-MATCHED VENEERS

CRAIG THIBODEAU GIVES A MASTERCLASS ON
MAKING DECORATIVE SUNBURST PATTERNS

PHOTOGRAPH BY CRAIG CARLSON

Radial matches (or sunbursts or starbursts as they are also known) are an interesting way to incorporate decorative veneer patterns into furniture. Most frequently they are seen in the form of round table tops, though they can also be used in a variety of places like doors and side panels in case furniture to add complexity to a design. Often, they showcase wildly figured grain patterns like crotch veneer and burls, but you can use essentially any veneer to make a radial match and add some decorative veneering to your work. In essence, a radial match is a circular pattern of pie slice-shaped pieces of veneer either book- or slip-matched to create a repeating pattern of wood grain.

CREATING A RADIAL MATCH

There are a variety of ways to create radial matches. The most common involves book-matching the leaves of veneer around a central point, but you can also slip-match the leaves to create an interesting spiral pattern. Slip-matching works well with some veneers and not as well with others – you wouldn't typically see it used with burl veneer, for instance, because the pattern shift would not be very obvious.

The most basic method for making a radial match is to cut multiple pie slice-shaped pieces of veneer from the same location in a bundle of veneer and book-match those pie slices into a circle to form something like a round table top that will end up with a repeating decorative pattern in the wood grain. The typical number of veneer leaves used to make a radial match can vary from four, eight, 12, 16, all the way up to 32 or more depending on the complexity desired. The most common are 16 and 32 leaf matches. The number of leaves needs to grow by two every time so that the pattern is balanced around the circle; odd numbers of leaves would create a pattern where the final two leaves would not line up correctly. Increasing by two gives a pattern balanced in pairs, which is most apparent in book-matches where the two-leaf pattern repeats as many times as necessary to create the final design.

MAKING THE TEMPLATE

To make a radial match, you'll need an accurate method for cutting identical triangular pieces of veneer. I've found that the easiest method is to make a full-size drawing of a section of the table top I'm making and then use that to lay out how many pieces will be needed for the top veneer pattern. With that information, I can make a simple drawing of one of the radial-match pieces to use as a template for cutting all the veneer.

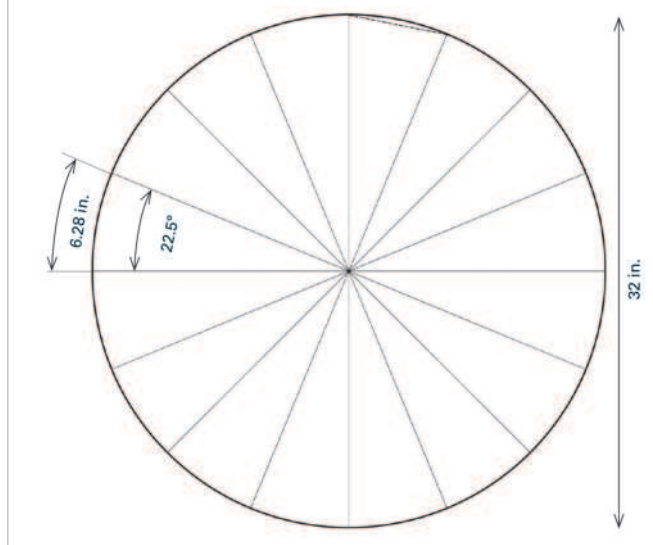
To illustrate the techniques used to make radial matches, I'll be making a 16-piece radial-matched round table top in flatsawn walnut veneer. The table top needs to be 32in across, so my veneer leaves need to be at least 16in long plus some extra for trimming later (about ½in or so). To make it around the 32in-diameter circle, I need the leaves to be just over 6¼in wide. I determine this with some basic geometry. To calculate the circumference of a circle (the distance around the outside perimeter), multiply the diameter times pi (3.14). Divide that number by the number of leaves in your radial match, in my case 16, and you get the width of the widest part of the pie-shaped piece required for each part of the radial match. For my table top, the circumference is 100½in; dividing that by my 16 leaves gives me a width of roughly 6¼in for each leaf. I always go over

16-Piece Radial Match

Angle of each piece = $360^\circ \div 16$

Circumference of circle = diameter $\times 3.14$

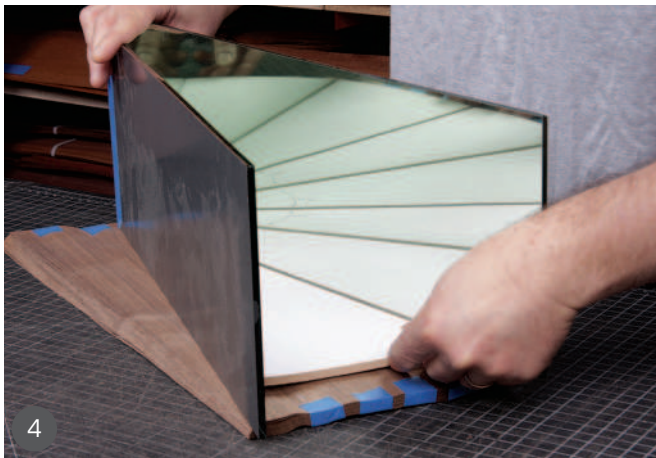
Width of veneer pieces = circumference $\div 16$



OPPOSITE An accurate numbering system is important in radial matches – unless you go in another direction entirely, as in this table by David Marr that features 16 different veneers laid together to form a highly decorative radial-matched pattern showcasing dyed and natural veneers

1 Use a digital angle gauge to lay out your pie slice-shaped drawing, if you don't have access to a system for printing large images. Just draw one straight line down the page, set the angle gauge to 22.5°, and mark the angle directly from the gauge. **2** Spray-glue the drawing to a piece of ¼in MDF, and cut just outside the lines with a bandsaw or jigsaw. Then sand or handplane it right to the line





PHOTOGRAPHS BY CRAIG THIBODEAU, UNLESS OTHERWISE STATED

- 3 Take the time to number your leaves of veneer in order before doing any cutting or sorting; you'll regret it later if you don't
- 4 Using the MDF template and a set of hinged mirrors, you can mock up your radial match using a variety of different veneers to see what looks best. I use the template to get an exact spacing between the mirrors so I'll know precisely what the radial match will look like before cutting any veneer
- 5 Aligning all the veneer leaves precisely is important with a radial match because the book-matched veneer leaves will be difficult if not impossible to align later and your book-matched pattern will show wide variation at the seams if you don't line them up correctly from the start
- 6 I use the MDF template as a guide throughout the entire process of making a radial match. Here, it's being used to double-check that the hinged mirrors were accurately spaced when the radial match was traced on to the veneer
- 7 Cutting through 16 layers of veneer takes time and patience. It also takes some skill to hold the saw at exactly 90° to the fence the entire time
- 8 I nearly always sand the cut edges to make sure they are straight and square; this also helps to eliminate any tear-out or chips in the veneer edge
- 9 Use your MDF template to mark the second cut line off the first cut line. Move the outer edge of the template a little past where it should be located so you are cutting pieces just slightly larger than desired. A bare $\frac{1}{16}$ in or so is plenty when you multiply it over 16 pieces

this by a little to account for the curve of the circle and because I want my veneer pieces a bit long ($\frac{1}{2}$ in on each piece), so let's say a minimum of $6\frac{1}{2}$ in-wide leaves will be necessary to make my 32 in-diameter radial match from 16 matched pieces of veneer.

You can also do the same thing without the maths by using a digital angle gauge to determine the shape of your pie slices. Let's use the same table top as an example. A full circle is 360°; divide that by 16 and you get 22.5° for each piece of the pie. Set your angle gauge to 22.5°, and trace both sides of it on a piece of paper. Because the table needs to be 32 in in diameter, each pie slice needs to be at least 16 in long, plus a bit to account for

trimming later. Just extend the lines from the angle gauge until they are about $16\frac{1}{2}$ in long and you'll have a drawing ready to use for making the template. As with anything like this, the more accurate you are when making the initial layout measurements, the more accurate the final piece will be.

Once you've created your full-size paper template, spray-glue it to a piece of $\frac{1}{4}$ in MDF and cut the MDF exactly along the lines of your drawing. Rough-cutting close to the line on the bandsaw and then gradually working right up to the line with a hand plane or hard sanding block makes the process fairly painless; keep the lines straight by using a long sanding block, if necessary. This final



template is the exact size of one of your radial-match veneer pieces, and with it you can use hinged mirrors to visualise exactly what the final radial match will look like without cutting any veneer.

One important note to add is that since we're making a 16-piece radial match, we obviously need 16 sequential pieces of the same veneer from a single bundle. Ideally, you'd have an extra piece or two in case one gets damaged or cut overly narrow by accident. I've got a bundle with 18 leaves of sequentially matched walnut veneer. The first thing I want to do is number all the leaves in one corner from one to 18 so that when I'm moving them around I can keep track of which leaf needs to go where.

MOCKING UP THE RADIAL MATCH

Once all the leaves are numbered, set the hinged mirrors on top of one veneer leaf and slide the MDF template between the two mirrors to set them at the exact angle needed for the table top veneer. Then remove the template to see the radial pattern displayed in the mirrors. This system allows you to preview the radial match in full and move the mirrors around on the veneer to preview other options for your radial-match design. Keep moving the mirrors until you find the most pleasing look for your radial match. Quite often the busiest area gets placed in the centre of the table so the eye is drawn in when looking at the table. Once I find the best look, I'll mark along the bottom edges of the mirrors with a pencil. This gives you the exact shape of the parts you need to cut, assuming the mirrors are at the right angle.

Now place the MDF template on the top piece of veneer and double-check that it lines up with your pencil marks from earlier. If it does, all is well and you're ready for the next step. If not, something was wrong with the alignment of the hinged mirrors when you were placing them and you'll need to re-check the look of your radial match with the mirrors and template as before. Once you've confirmed the location of the template, trace around it again with a pencil.

You need to line up the 16 leaves of veneer in the stack so the grain flows as closely as possible from one leaf to the other. Any misalignment will be obvious in the final table top and hard to correct later, so take the time to get them lined up correctly now. Tape the stack of veneer together in a few places around the perimeter to hold the alignment while cutting.

CUTTING THE VENEER

Use your straightedge and veneer saw to cut along the first of the two lines marking your radial-match leaves. You can cut in either direction, but I tend to cut in the direction that goes with the wood grain rather than against it, which seems to leave a slightly better cut. Once one side is cut, slide it off the side of your bench and sand it smooth with a hard block and some 120-grit sandpaper. Make sure the edge is straight and vertical. Now tape the stack together along the sanded edge. Place the template on top of the stack, line up one edge with the freshly cut and sanded edge, and then mask the other edge.

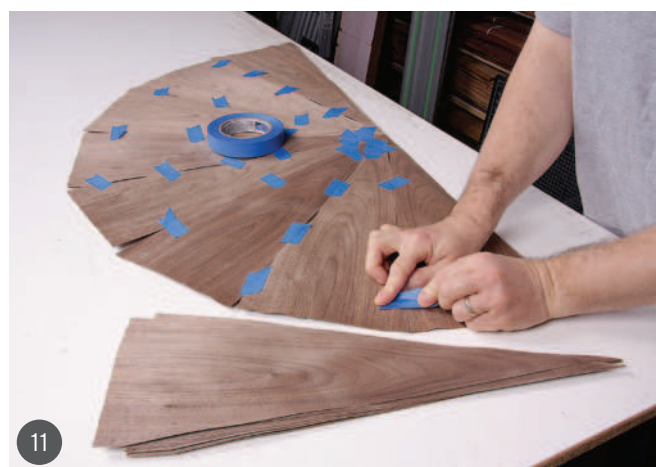
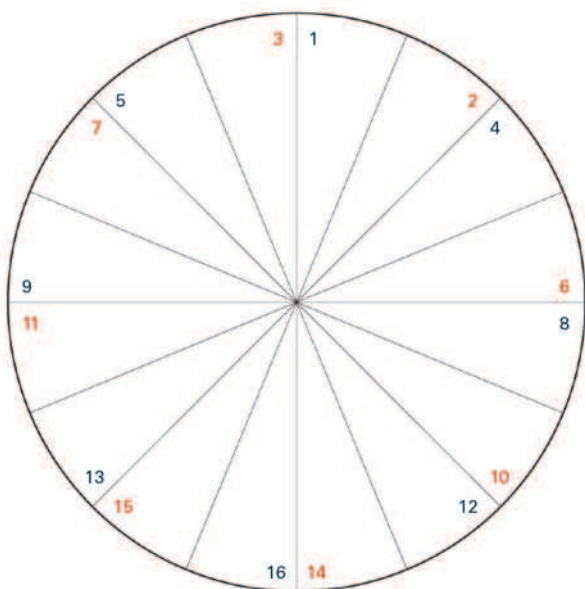
When you place the straightedge on the second cut line, move the straightedge a hair over the marked line at the widest end of the stack so you end up cutting slightly wider leaves than planned. For a table top this size, I would move the straightedge out by just the smallest amount, possibly $\frac{1}{64}$ in or so. The key is not to undercut the angle or you'll have a hard time making things line up in the end. The system we're using depends on taping together two halves of the full circle, then cutting them to fit each other while always maintaining the fine points at the centre of the circle. Cut through the stack as before. Once the second line is cut, repeat the sanding process from before, keeping the sanding block straight and square the entire time. Now untape the stack of veneer. Your numbers should still be visible on all the leaves; if not, renumber them all from one to 16 before moving on.

Radial-Match Numbering System

Using a system taught by Paul Schürch, it's possible to create a radial-matched pattern with only a minimal grain pattern shift from leaf to leaf

Black numbers are face up.

Red numbers are flipped upside down.



10 Begin taping together the first two leaves. Take care to keep the tiny points of the leaves aligned precisely, and apply tape in just a few places along the joint for now

11 Add one leaf at a time to the first two, and continue taping them together with a few pieces of blue tape until half of the leaves have been taped together into the first half circle. Repeat this process for the second half circle

12 When you place the 16 pieces of veneer in the order described, you'll note that every other leaf is upside down. As long as you placed each leaf in the proper location, it doesn't matter that you can't see the numbers. Just tape them together in the correct order, tape across and along the joints, and you'll be ready for the next step

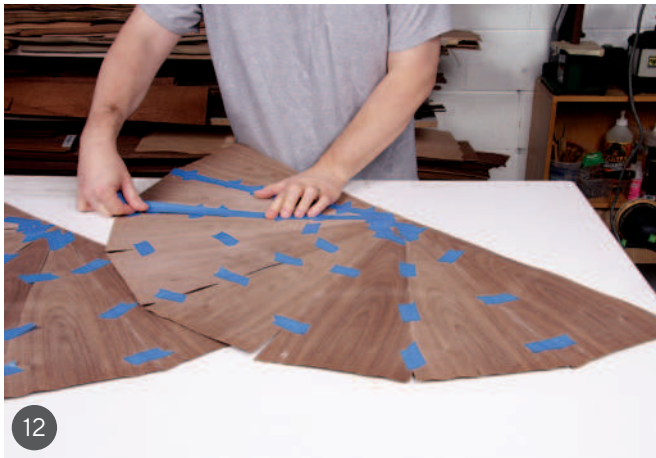
LAYOUT

I learned the system I use for making radial matches with minimal pattern shift from veneer specialist Paul Schürch. His method involves merely altering the placement of the numbered leaves so that adjacent leaves are never more than two numbers apart. Begin with leaf 1, then flip leaf 2 over and place it to one side of leaf 1. Now take leaf 3 and flip it over, then place it on the opposite side of leaf 1. Repeat this system with leaves 4 and 5, 6 and 7, and so on, until all the leaves are arranged in a circle. As you can see in the drawing above, there is no more than a two-number difference between any leaves, which means the pattern shift will be minimal across the entire table top and adjacent leaves are more likely to be similar in grain pattern. Compare this with a more traditional system of starting with leaf 1 and just going in a circle with 2, 3, 4, etc. By the time you get to leaf 16, it ends up right next to leaf 1, so the pattern shift in the grain may be very pronounced.

TAPING TOGETHER THE VENEERS

Start the taping process by taping leaf 1 to leaf 2, making sure leaf 2 is flipped over to create the book-match effect. Tape together these first two leaves with blue tape, making sure to get the sharp points perfectly aligned (this can be a challenge because there isn't much material to tape together at the points). I try to get the tip of the veneer leaves aligned perfectly and then tape them together starting an inch or so back from the points so I can see all the points while assembling the rest of the leaves.

Continue taping leaves together in the predetermined order, making sure always to keep the points aligned. Often, you'll need to go back a bit and retape a few leaves once you get more of them together because you'll notice the points aren't lined up properly. Just tape across the joints in a few places to start, so if you need to move a leaf, it won't take much effort. Once all the leaves for one half are aligned correctly, add more tape



13 If you've cut your radial-matched pieces of veneer slightly oversize as we discussed, when you place them together, there should be a slight gap at the centre where the points should all meet. With a quick trim, they'll all line up nicely. The gap here is exaggerated to make it easier to see clearly; ideally, it would only be $\frac{1}{8}$ in or so

14 Flip one half on top of the other and line up the outer straight edges. Tape them together in a few places, and use a straightedge to cut an equal amount from both ends so the points of the veneer pieces meet in the centre

15 Once the final cut is made, tape the two halves together with blue tape both along and across the centre joint to fully tape the glue face of the veneer

across the joints and a strip down the length of each joint. I still keep the tape about an inch away from the sharp tips of the veneer at this point because you need to see the points for the next step.

Repeat this process for the second half of the table top, and you'll end up with two half circles of taped-together veneer. You should notice at this point that if you slide the two halves next to each other, they don't quite meet at the middle – ideally, they will be just a bare $\frac{1}{8}$ in apart at the centre.

We can now tape these two halves together and trim the final joint for a perfect fit while preserving all of the fine points at the centre. Imagine if instead of having a gap at the centre, the points were touching and the gap was along the outer edge of the joint. That would mean that to get the halves together we'd have to trim off some of the points, and that really ruins the radial-match effect and is extremely noticeable in the final piece. The

way we've cut the pieces, there is only a slight bit to trim off the ends of our half circles and that goes essentially unnoticed in the final table. With practice making radial matches, you can bring this amount down to almost nothing.

The easiest way I've found to trim the final joint is to take the two halves and lay them out as though they were going to be taped together. Instead of taping them together though, flip one half over on top of the other and carefully line up the untrimmed ends of both pieces. Tape them together in a few places along the centre joint. Next, use a long straightedge to trim the centre joint. You'll want to split the amount you trim off so an equal amount comes off both ends of the joint and essentially nothing comes off the middle where the points are located. Once you've got it trimmed, slide it off the edge of your bench a bit and lightly sand the joint clean and straight with a long sanding block.



16 Begin gum-taping along all of the joints. Try not to build up too many layers of gum tape at the centre of the table top; instead, run several pieces of tape full length across the veneer and then cut all the remaining pieces short so they don't cross the centreline

17 Make your substrate slightly oversize ($\frac{1}{2}$ in in diameter), then use it as a template to trim the veneer down to size so it doesn't overhang the substrate in the press. I always make my substrate and veneer oversize so I can trim them to final size after pressing

18 Urea formaldehyde glues have a rigid glue line that is ideal for complex patterns in veneer like this radial match. Mix and spread the glue according to the instructions, and allow proper time for curing and final drying after pulling the assembly from the vacuum bag

19 I prefer to do my initial sanding with a hard block and some 150-grit paper. I find this cleans up the veneer surface and levels all of the veneer so that all future sanding has a flat reference surface

20 Once you've got the veneer panel pressed, you can add contrasting solid-wood edging around it to make a beautiful table top. Here, I'm partway through adding curly maple edging to my walnut radial match

Now untape the two halves and flip the top one over so you can line up the final joint. Start at the centre and try to get all the tiny points aligned perfectly (now you see why we didn't cover them with tape earlier). Lay a piece of blue tape across the centre to hold the halves in place and tape them together along the length of the joint, first taping across the joint, then taping down the full length of the joint. Flip over the entire sheet and double-check that the points are well aligned. If you were careful with your alignment, they should basically be perfect. Apply gum tape along all of the joints on this face (the show face). You'll need to work quickly because there is a lot of tape to apply. Burnish down the tape with a paper towel, and slide the veneer under a piece of MDF for an hour or so. When the tape is dry, flip the veneer over and remove all the blue tape

from the glue face. You're now ready to trim the veneer to size and glue it up.

TRIMMING TO SIZE

I like to make my substrates a little oversize so I can trim off the edge of the glue-up after the veneer is pressed. Because we're making a 32in-round table top, I'll make my substrate $32\frac{1}{2}$ in in diameter. The substrate is easy enough to cut with a router and a long base with a screw for a pivot point at the centre of the circle. While you're making the substrate, cut a second circular piece from some $\frac{1}{4}$ in MDF to use as a caul in the press. Once you've cut the substrate to size, lay it on top of the veneer and centre it over the pattern. Trim off any overhanging veneer with a scalpel or sharp utility blade.



20

Make a second piece of veneer to use as a backer sheet. The quality of the backer material depends on whether it will be visible or not. If it will be visible, make it from a nice veneer that goes with the design. You might even want to make a four- or eight-piece radial match for the backer just to keep the design continuous. If the backer won't be seen, it can be made from secondary veneer.

GLUING UP THE VENEER

Radial-matched veneer gets glued up the same as any other veneer sheet, typically in a vacuum bag and with a hard-setting glue like urea formaldehyde (UF). Using a glue with a softer glue line would allow the leaves of veneer to separate over time, ruining all your careful jointing work.

Mix the glue, making sure to wear the appropriate safety gear and following the instructions on the container. Roll on an even coat of glue and place your veneer on to it. Flip the panel over and repeat for the second side. Tape the veneer in place in a few spots around the perimeter of the circle so it can't move in the press. Cover the assembly with plastic sheet and the MDF cauls, and slip it into the vacuum bag. UF glues need six to eight hours minimum to cure, so I tend to leave mine in the press overnight.

When you take the panel out of the press, set it somewhere that allows airflow on both sides of the panel.

Remove the gum tape with a wet paper towel, and allow the panel to dry fully before sanding. Since the grain runs in all directions, the final sanding on radial-matched panels needs to be done with a random-orbit sander. The initial sanding can be done with a long hard block and some 150-grit paper, but don't sand too much or you'll risk going through the veneer. Complete the sanding with your random-orbit sander and 150-, 180- and 220-grit paper and you're ready for finish.

Meet Craig on page 98



The Craft of Veneering
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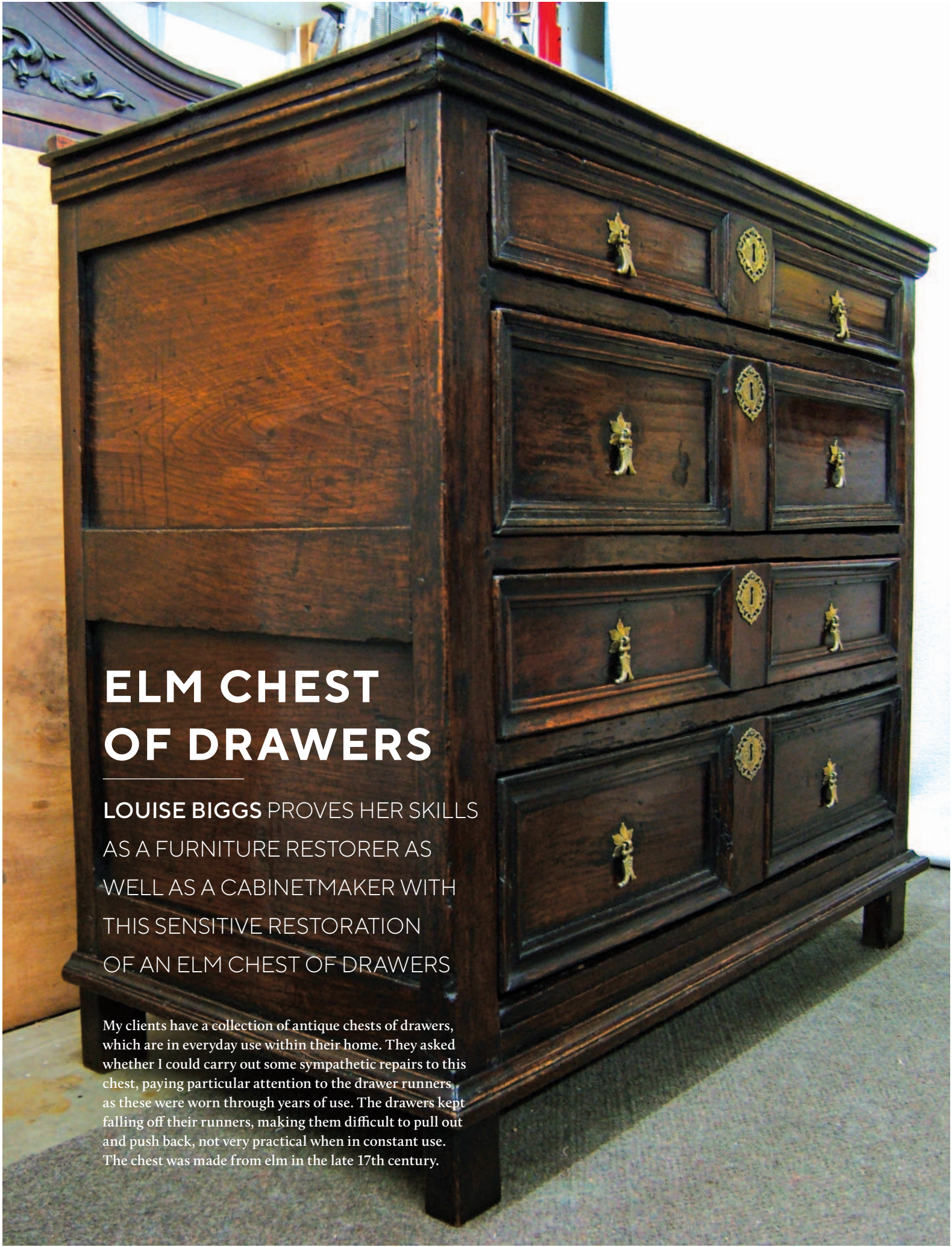
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A large, dark-stained elm chest of drawers with multiple drawers and ornate brass handles. The chest is made of elm and features a large panel on the left side and several drawers on the right. The drawers are arranged in three rows of two, with a central panel between them. Each drawer has a brass handle and a brass keyhole. The chest is standing on a carpeted floor.

ELM CHEST OF DRAWERS

LOUISE BIGGS PROVES HER SKILLS
AS A FURNITURE RESTORER AS
WELL AS A CABINETMAKER WITH
THIS SENSITIVE RESTORATION
OF AN ELM CHEST OF DRAWERS

My clients have a collection of antique chests of drawers, which are in everyday use within their home. They asked whether I could carry out some sympathetic repairs to this chest, paying particular attention to the drawer runners, as these were worn through years of use. The drawers kept falling off their runners, making them difficult to pull out and push back, not very practical when in constant use. The chest was made from elm in the late 17th century.



A One drawer's central panel was loose **B** This drawer had also been fitted with wedges and additional timber
C The drawer fronts were tilted with uneven gaps around them
D The drawer rails were loose and the grooves on the drawers' sides were worn and uneven

ASSESSMENT

- The drawer fronts were tilted with uneven gaps around the fronts causing the drawer fronts to stand proud of the carcass front.
- The grooves on the sides of the drawers were badly worn and very uneven.
- The runners within the carcass were loose and worn and had at some point been replaced.
- The drawer rails were loose within their joints.
- There was insect damage to the bottom panels and the bottom rail.
- The whole carcass was somewhat unstable and needed to be tightened up. A large section of wood was glued in the bottom of the carcass on the left-hand side.
- One of the top side panels had dropped down from its groove leaving a gap at the top.
- Many of the applied mouldings were loose but not badly damaged or missing.
- The central panel on one drawer was loose due to differing grain directions, movement and shrinkage.
- Finally, the same drawer had a strange array of wedges and additional timber fitted behind the bottom applied moulding.



RESTORATION

1 Old elm and oak was used throughout the restoration and animal hide glue was used as it is reversible and was the glue used originally. The first step was to tighten up the carcass. The moulding was removed from the bottom front rail using a restorer's cat's paw to carefully lever the moulding free. The bottom panel on the left-hand side was also removed; this exposed the large section of additional wood that had been glued in. Having exposed the joint area between the bottom rail and the leg, I could see that the joint, a mortise and tenon, had been weakened by insect damage and was broken.

2 Before separating the tenon, the remaining bottom panels were removed and the peg through the tenon in the leg was drilled out through the centre and the remainder of the peg eased out with a small chisel. Pieces of low-tack masking tape were positioned on the legs to mark the top edge of the rail. The same steps were taken to release the other end of the rail and the remainder of the tenons were cleaned out using a chisel and mallet.

3 It was clear that the ends of all the legs had been replaced, cut off level with the underside of the bottom moulding. There was no external evidence of any dowels, screws or nails. While cutting out the broken tenon, the chisel hit metal and a brass

dowel was revealed right up the middle of the mortise, effectively cutting the tenon in two halves. The replacement leg ends had been firmly glued in place and extensive damage would be caused trying to remove the brass dowel. I decided to keep the false tenon short in the first half of the mortise until it hit the brass dowel and secured it with additional pegs. A section of old elm was prepared to the same thickness as the mortise, one end cut and fitted in the mortise, the other end to be fitted to the rail.

4 A mortise was cut on the underside of the bottom rail at the end, with a shoulder on the top edge. The shoulder will prevent the rail from dropping down. The bottom rail was dropped down over the false tenon. The same procedure was carried out on the other end. Once adjustments had been made to the fit, the rail and false tenons were glued and clamped in place with a sash clamp and the chest checked for square.

5 Elm pegs were then fitted through both halves of the false tenons for added strength to prevent the joints pulling apart.

6 The other three drawer rails were supported by a sash clamp and glue injected into the joints. Elm wedges were cut and fitted above and below the rails to tighten up the joints, which had opened up due to carcass movement. The wedges are just visible.



7 The bottom panels and moulding were reinstated. The carcass was now tightened up, allowing work to start on the drawer runners. Low-tack tape was placed on the carcass to show the positions of the top edges of the housings for the drawer runners. The drawers were placed in position and wedged with card packers to achieve an even spacing above and below the drawer fronts. This overrode the wear on the runners and drawer grooves and a piece of tape was then put on the drawer fronts, corresponding with those on the carcass.

8 The oak drawer liners were restored first. Old glue and dirt was cleaned out of any splits in the sides and backs and these were then glued and clamped. Then any loose dovetails were knocked apart and re-glued.

9 To eliminate the worn areas above the grooves on the drawer sides, a packing piece as a fence was taped to the drawer side to clear the drawer front and a router was set up to remove the worn area of the groove and create a straight edge. The top edges of the grooves would then be brought in line with the tape on the drawer fronts.

10 The thickness of the carcass runner was known and restricted by the housing in the carcass. Pieces of old oak were prepared and the grooves on the drawer sides built up. The oak sections were rub jointed into place with animal hide glue and left to set. The built-up sections in the drawer grooves were planed flush to the sides and cleaned up with abrasives. These stages were repeated on each side of each drawer to eliminate uneven worn areas.

11 The depth of each groove on the drawer sides was noted. The drawers were put in place and the width of each runner measured, taking into account the groove, any space between the drawer sides and the legs and the width in the carcass. The old worn runners were removed and the housings cleaned of any old glue, nails and screws. The timber was prepared for the new runners and each runner was individually fitted. The runners were cut to fit within the housings on the carcass legs. The haunches were cut out at the front of the runners.

12 The haunches act as the depth stops for the drawers against the back face of the drawer front. The fit of each drawer was



12

checked and adjustments made to the width of the runners and the depth of the haunches. The runners were glued into position.

13 Each drawer front was checked for any loose mouldings. Those that were loose were lifted, the old glue removed from the drawer front and the back of the moulding and they were then glued and pinned back into position and the pin holes filled with a blend of coloured waxes.

14 The loose central panel, on the drawer with the strange array of wedges and timber, was lifted and the old glue removed. It was then evident that the bottom mouldings were balanced between a thin bottom edge of drawer front and a piece of timber pinned underneath from a previous repair. The piece of timber, which was not fitted to a straight edge, also held the front edge of the drawer bottom in place and wedges had been pinned over the top to take the drawer over the drawer rail.

15 I decided to cut a straight edge to the bottom edge of the drawer front. A wide section of thick MDF was wedged and clamped to the drawer bottom so that it was parallel to the



13



14



15

position of the top edge of the moulding; this acted as a router guide to cut a straight line. A piece of elm was prepared to finish wider than the applied bottom moulding with a rebate moulded on the router table, to fit around the drawer bottom. The front face of the new section was planed level with the drawer front and cleaned up with a scraper and abrasives.



16 The bottom moulding and central panel were glued and pinned in position. The central panel was flattened off on the back side so that it sat back on the drawer front without rocking and a sliver of timber fitted to one side to close the shrinkage gap. Once the glue had set, the new section was levelled to the edge of the mouldings as the mouldings had irregular edges.

17 The new runners and infill timber on the drawers were stained to match and the one drawer front stained and polished to match. After replacing the runners and re-cutting the grooves, the drawer fronts now finish square to the front of the carcass and run smoothly in and out. The chest was treated with a coat of Bald's Balm to clean and revive it and then the whole chest was given a good coat of coloured wax. It was then ready to return to the customer with smoothly functioning drawers.



RESTORER'S TOOLKIT

Japanese restorer's cat's paw: The cat's paw is a compact Japanese tool designed for pulling and prying. One end has the blade, which I used to carefully separate the bottom panels on this elm chest, and the other end has a neat little nail puller. It is a far less destructive tool than a crowbar, which is quite crudely made by comparison.

Low-tack tape: Antique furniture needs to be dealt with in a sensitive manner to avoid damage, especially to the surface finish, which is usually French polish and wax over the top – this develops a patina over time. A weak French polish can easily be damaged by overzealous use of tape, so a low-tack variety is essential to prevent damage.

Bald's Original Furniture Balm: This fluid restores and refurbishes furniture without removing character and patina. It deals with scratches and scrapes and removes most ring and water marks. The lighter green cap version tends not to cause undue darkening of the wood. Apply it before a final waxing and it'll give a great lustre.



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OUT OF AFRICA

FROM A GARAGE WORKSHOP IN
A SUBURB OF WASHINGTON DC,
ETHIOPIAN-BORN **JOMO TARIKU** IS
WORKING TO PUT MODERN AFRICAN
FURNITURE DESIGN ON THE WORLD MAP

One word sums up Jomo Tariku's inspiration and design influence: Africa. 'I consume anything about Africa and see how it can inspire and influence me,' Jomo tells *F&C*. 'I look beyond furniture for inspiration, including to various household objects, tools, architecture, hairstyles and braids, facial and body paintings and scarifications, wildlife and more.'

'As far as I can remember, I have been fascinated with traditional stools that my parents had in our living room,' Jomo recalls. 'They were part of a palette of sketches I would do out of boredom during summer breaks, as I was not much of a reader. Our childhood home was also filled with items collected from travels through different parts of Africa. Eventually all of them

ended as sketches in my notebooks and sketchpads. I rarely drew people or buildings. Rather, I gravitated towards mostly objects within our home. As my design skills matured and developed, I learned to appreciate the imprinting of my African culture even more, and understood its intrinsic value. As I continue to explore and expand my knowledge of the continent, I incorporate and imprint my learnings into modern furniture.'

Jomo wants to see modern African design take its place among recognised styles such as Scandinavian, Italian and Japanese design. 'There has been an awakening and interest in African design and Black design in the past few years,' he says. 'As a designer contributing to the body of Black design work,



I am often asked and quoted on the topic. Over time these cultural contexts enter the popular culture and become a widely accepted genre. It is my view that, in the next few years, the idea of African and Black design will be viewed in the same way [as Scandinavian, Italian or Japanese design].

GROWING REPRESENTATION

‘For this to happen we need more African and Black designers represented in design schools and industry. While practising design over three decades and attending my share of exciting events on three continents, I am

constantly surprised by the absence of Black designers. The inclusion of Black designers’ inputs and perspectives will make the design world wholesome.’

Jomo was born in Kenya to Ethiopian parents and his love of woodworking was first sparked in an apprenticeship in Addis Ababa. ‘I saw early on what is possible,’ he recalls. ‘Over a two-year period, I witnessed how a small shop with limited tools could produce a wide assortment of home goods, ranging from large bedroom sets to buttons for sweaters. In contrast, my university studio class had a shop 10 times the size of the one I was accustomed to. I had a steep learning curve before I could start my woodworking projects. As an apprentice the owner of the shop did not allow us to use any power tools but let me and my younger brother do only painting, sanding and finishing.’ He adds: ‘An added benefit was that the shop owner was an accomplished painter, and generous to share drawing and watercolouring tips and tricks, which I picked up on.’

He then went on to the Industrial Design programme at the University of Kansas, which he says took his development as a craftsman and designer to the next level. ‘I was able to combine my conceptual skills with the theory and language of design. My studio classes also gave me both physical and intellectual space to conceive and explore my modern African furniture concept.’

THE ROAD LESS TRAVELLED

Jomo started out designing and building pieces for his home, including chairs, stools, tables and lampshades, before winning his first commission – to design and manufacture bespoke lampshades for a restaurant in 1996. ‘Very early in my career I realised there was a very narrow licensing opportunity for my work, since the industry was focused on broader market trends. My options were to either change my focus or pursue production of my line of modern African furniture as a solo project. I chose the least travelled path,’ he says.

He sees his professional journey in three phases, starting in autumn 1992 when he set up a small woodworking shop in a rented garage with his younger brother. ‘Over the next several years I had the opportunity to develop my design style while building custom furniture for clients,’ he recalls. ‘After evaluating the scope of our commercial success in the Midwest, I connected with a few friends and raised capital in 2000 to open a design studio in Washington, DC.

‘For the next eight years I ran the studio, which had a major portion of its clients focused on web and graphic design services. The change in location, while attracting more viewers of my work, did not gain major traction at design shows or within the industry. At the same time I had started a family and decided to step away from woodworking and furniture design.

‘Then in 2017 three of my designs – the Axum chair, “theDukaStack” and “theEnserra” stools, were published in *Contemporary African Design* by Tapiwa Matensed, leading to invitations to a couple of design festivals. The response from the general public towards my work was overwhelmingly positive. After reevaluating my options, I decided to reboot my design work and make it the focus of my career. As you can imagine, starting a new furniture design business has a lot of risks. However, it has been a very exhilarating journey.’

I think high-level craftsmanship requires a dialogue between the designer and expert builder. If this works out, I hope some of my designs will be fabricated in Africa – after all, the continent and my heritage is the inspiration for my work.'

His favourite – and most challenging – piece so far has been the Nyala chair. 'It is a hand-carved chair and it took quite some time and collaboration with my builder to figure out how to shape and assemble the raw frame, minimise material waste and still deliver on the aesthetics. We built several prototypes before we arrived at a frame and final product that both of us were happy with,' he says. 'It is not fair to be asked which one of your children is your favourite, since all my current works have been deeply satisfying. But if I have to select one, the Nyala chair hits all the right notes on function and art. It consistently evokes similar feelings at galleries and shows, the most common question being "is it a piece of art or a functional chair?" The answer is: yes. It is both, and that was how I intended it to be when I designed it.'

Jomo had hoped that 2020 would be his breakout year, but the Covid-19 pandemic has delayed his appearance at shows. 'At the same time it has given me a bit of time to refine and build relationships with builders and potential catalogues who can carry my work,' he says. 'I will be attending my first show on November 27 in Savannah, Georgia, and I am really looking forward to it.' He also has two new chair designs in the pipeline for this autumn. 'The best thing that happened in 2020 and in 2021 is a couple of museums approaching me to add my work to their permanent collection,' Jomo adds. 'I have always wanted my work to be taken seriously, and it was a delight when a highly celebrated institution approached me to be followed by two more now. I think it says something about my hard work and persistence and how I define my design vision. I have always believed I was doing something that most people are not accustomed to when it came to African furniture design, so I understand why my work stands out.'

GARAGE SET-UP

Jomo's workshop is in the basement of the family home he shares with his wife and two teenage sons in a suburb of Washington DC. 'The amount of space is quite constrained, but adequate for a prototyping shop,' he says. Fabrication and build-outs are done elsewhere by master craftspeople such as David Bohnhoff, who builds his chairs. 'I have been in this garage shop about three years now,' says Jomo. 'I initially did not have that many tools – I was able to move my tablesaw to the corner and fit in my wife's Honda Accord. Over time though, the shop has taken over the floorspace. I currently have a tablesaw, drill press, mitresaw, drum sander, 10in bandsaw, router table and a 25 x 36 CNC machine housed behind a sound wall, and a small collection of hand and power tools.'

His current favourite tool is his CNC with indexer. 'I particularly like the ability to plan and plot during weekdays and focus my shop time on the weekends,' he explains. 'Not all my ideas though could be prototyped on a CNC, so I have invested in a planer, additional router for a router table and a small bandsaw for cutting templates. In the fall I will be adding a small wood turner and a 3D printer, filling some of the gaps in my shop. I am investing in these because I will be exiting my day job at the end of August and will finally have the time needed to spend as much

energy as I want visualising my ideas.' An accident during his college days has left him very wary of woodturning machines, but he says he is over that fear now.

Jomo mainly works with hardwoods, veneers, plywood and occasionally acrylic. 'I really want to explore metal and carbon fibre, but I am intentionally staying focused on wood because of space constraints. I also like to paint patterns. The Massai Lounge Chair concept will have interchangeable backrests with carvings and paintings – something to look forward to in 2022.' In terms of finishes, he vacillates between natural, water-based finishes to highlight the grain and natural colour of a material, and ebonised pieces because he loves to see his work in black. 'We recently experimented with bleached wood and the results were stunning. We just completed a Nyala chair using this technique, which looks like it was carved from ivory or bone. Since most of my work is custom there is always flexibility, although I stay away from shiny finishes in general and prefer satin.'

TEAMING AESTHETICS WITH FUNCTION

'When I started my first business I had the vision of doing it all by myself and was thinking very big. I also wanted to control all aspects of the creation process,' Jomo recalls. 'As I matured as a designer and design studio operator, I learned to focus on the part of my business that is high value and cannot be replicated. I also did not want to sacrifice my time with my family.'

'I used to run a studio with a large gallery space. I now run my design venture from my home office, where my wife and two teenage children will pop in to either hang out or watch a movie while I am working on my sketches or computer. I also have a prototyping shop in my garage, where I periodically win the "loudest neighbour on the weekend" award. More importantly, I have partnered with a local master craftsman who is equally passionate about my design and woodworking. I am also always on the lookout for local finishers, woodturners and other crafts experts to work with. I think high-level craftsmanship requires a dialogue between the designer and expert builder. If this works out, I hope some of my designs will be fabricated in Africa – after all, the continent and my heritage is the inspiration for my work.'

Jomo's background in industrial design helps with the ergonomics of fabrication, after his initial idea has begun from an aesthetic exploration. 'I believe there should be a constant feedback between the aesthetics and functionality of created objects to be truly enjoyed in the home,' he says. And he adds: 'I hope my work connects with the public on two levels. When consumers approach their furniture purchase decision, my wish is for modern African to be one of their considerations in parallel with other modern regional design traditions. On a deeper level, I hope my furniture evokes the warmth of belongingness to those connected to Africa, either through lineage or travel.'

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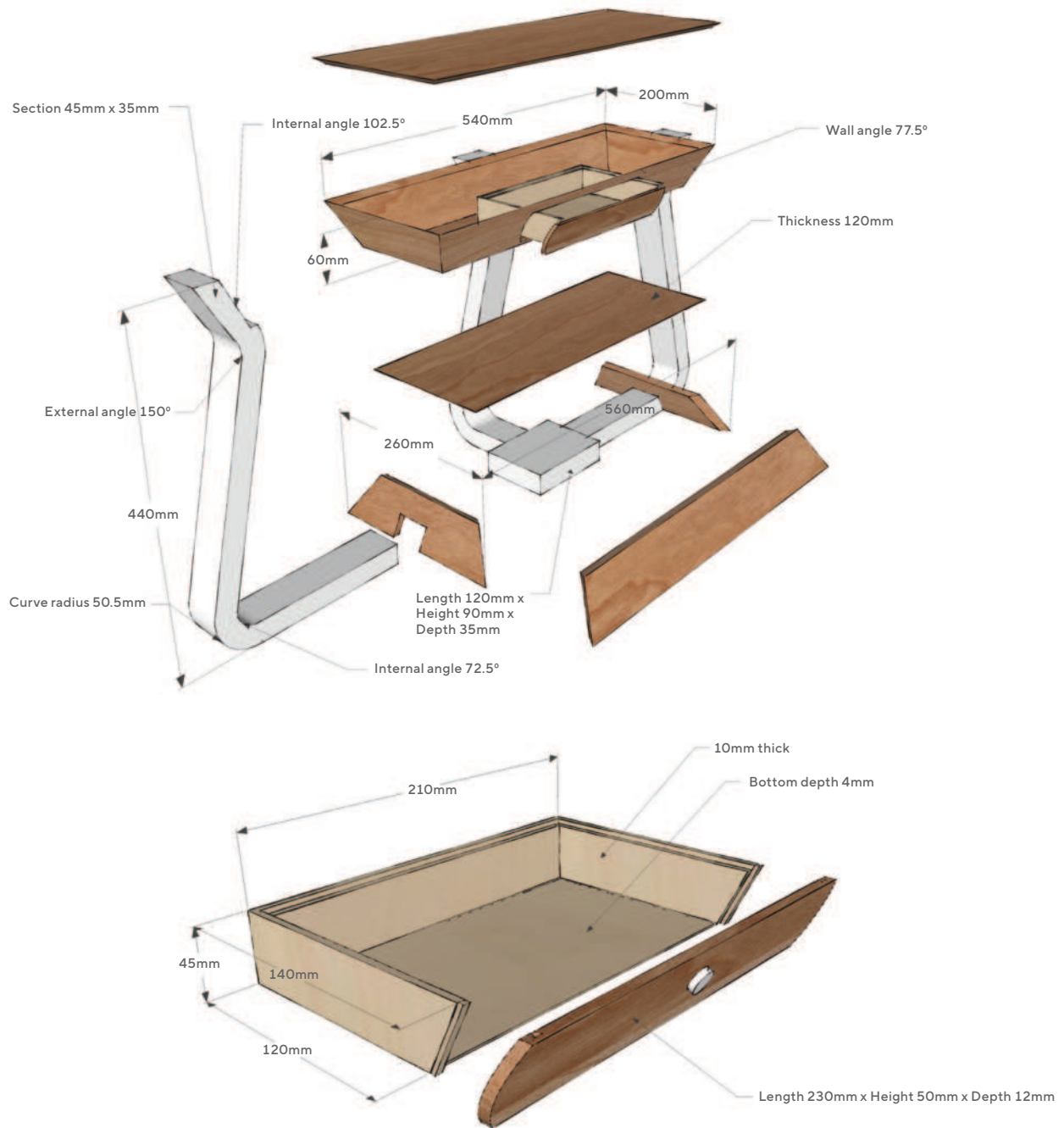
TELEVISION STAND

PAOLO FRATTARI EMPLOYS CURVES AND ANGLES TO
MAKE A TV CABINET WITH STORAGE FOR GADGETS

We live in an era of profound uncertainties, where one of the few certainties is that television has changed. The cathode-ray tube has been superseded by the plasma screen, a 5cm-deep machine has taken the place of one 50cm deep, and these changes have brought others with them – including to the TV cabinet.

Some hang their TVs on the wall, trying to emulate paintings; others insert them in recesses. But the television cabinet is always the most appreciated, both for its functionality and ease of movement.

The project I'm presenting here is a small piece of furniture that is well suited to this big change. It has a thin top piece that houses the TV and an equally thin lower piece that can store various electronic devices, but perhaps the most interesting thing about the piece is that you can use it to conceal the TV's electrical cables. A hidden compartment at the bottom and a simple channel made in the leg eliminate the problem of unsightly cables.



THE DESIGN

The cabinet is 440mm high, 750mm long and 310mm deep. It is made up of two beech tops in the shape of a solid trapezoid: the upper one is 60mm high, 540mm long and 200mm deep, while the lower one is 60mm high, 560mm long and 260mm deep.

The two shelves are positioned opposite each other, with the smaller bases adjacent and 320mm apart ($440 - 60 - 60 = 320$). The upper piece contains a small drawer, while the lower one has a missing rear part, guaranteeing access to the electrical cables and other equipment.

The three legs that support the two pieces are made in fir, with a section of 45 x 35mm. Once bleached, they create a pleasant contrast with the red of the beech, and the rounded shape of the legs also contrasts with the rigorously geometric lines of the two trapezoidal solids.

The three substantial supports hold the top with the removal of part of the legs, while two squares cut in the lower piece allow the insertion of the legs on the ground level. This unusual way of assembling the pieces is actually nothing more than a reinterpretation of dovetails.



PHOTOGRAPHS BY PAOLO FRATTARI, COURTESY OF LEGNO

- 1 I cut four slices from the 50mm board, one slightly thicker than the others
- 2 With the mitre saw set with the double angle, 12.5° on the stop and 45° on the angle of the blade, I made the corners of the perimeter. I then checked to make sure the sides were the same length
- 3 The motif was carved on the front piece. Some slight imperfections are inevitable but just serve to highlight that this is hand-carved
- 4 Once the double groove had been made, I removed a small portion of adjacent wood with a chisel. The chisel must be sharp and held with the lower part perfectly level, it must always remain pressed downwards, and if necessary, it can also move diagonally

THE UPPER PIECE

This is the most complicated part of the cabinet, and it is from this piece that the rest of the structure follows.

Using the bandsaw, I obtained four 120mm-thick slices from a 50mm beech board. I cut one of these into three 65mm strips, then with the thicknesser, I reduced two of these strips to 8mm and one to 9mm (this is because one strip, the front, will be carved with a 1mm thick pattern). With the other two slices, I reduced one to 8mm and the other to 6mm.

With the mitre saw angled at 12.5° I cut the perimeter of the solid, i.e. the three 66mm strips, two 540mm long and two 200mm long, then again with the mitre saw set to cut at 12.5° but this time also with the blade inclined at 45°, I cut the eight corners to be assembled.

The upper piece, as well as the lower one, are assembled with various grooves, so as to hide any sight of the wood head.

THE CARVED MOTIF

The front of the upper piece includes a carved motif; I decided to insert a thin, irregularly wavy design, 1mm wide and 1mm deep, to suggest the 'preciousness of the hand-made furniture'.

My chosen motif is a subtle, graceful, unusual, perhaps even innovative thread.

To achieve it, I first engraved its perimeter with a V gouge. As the embossed motif is only 1mm, I was able to make it in a couple of passes. The most important thing about this initial step was sharpening the tool – given the small thickness of the pattern, a blunt gouge would inevitably break it.

Regarding the carving technique, the best thing is to try and try again. If you can, it is helpful to carefully observe someone who knows how to do it, perhaps by watching videos online if you don't know any carvers. I also advise you not to use a hammer as it would create slight steps which would take away the linearity necessary for this kind of carving. The continuous line is obtained by holding the gouge with two hands and, aided by the weight of your body, slowly pushing and bending as if you were using a pencil. You'll be amazed at the decoration you can achieve: a sharp gouge can work wonders.

Once I finished cutting with the V gouge I took a chisel and, tilting it slightly, I removed a small part adjacent to the groove, about 5mm, then with another larger chisel, 18mm, I levelled the bottom.



5 The beech strip with the carved motif is 1mm thicker than the others; to obtain the same thickness, the carved board was placed side by side with one of the other 8mm boards for reference

6 A chisel plane was used to complete the work on the carving

If you rest a chisel flat on a thin surface and move it without removing it from the surface, it behaves like a plane, with the advantage that it can reach all the points that you need it to.

The beech strip that contains the carved pattern is 1mm thicker than the others, so to obtain the same thickness I placed it side by side and, using the chisel-plane technique, I was able to finish the cutting.

After completing the carving, I used the saw bench to angle the sides of the four strips that make up the perimeter. The lower part is angled at 66.8° while the upper part is angled at 38.8° . The angle of the former is greater than 45° , which is the maximum angle that my circular saw can cut, so I had to place an angled board cut at about 15° alongside this.

To assemble these strips, I had to resort to the tablesaw. I made a 4mm groove on all sides to be joined, on this groove I inserted 4mm plywood strips. The rest of the job was done with glue and clamps.

Before proceeding with the assembly, I used the jigsaw to cut out a small rectangle with rounded corners from the front piece. This was to make a small drawer for storing the remote control.

It was not easy to assemble this piece, I first had to make eight wedges, with the angle needed to make the parts held by the



7 The perimeter walls of the box had to have serrated edges to allow the shelves to be recessed. Cutting the upper edge at 23° was not a problem but for the opposite edge, the upper one, the blade would have to be tilted by 51° , which is impossible for most saws.

An additional inclined piece was required to reach this angle
8 To mill the channels in the groove, I built a 45° inclined plane to slide against a guide fixed to the bench top. The workpiece was fixed to the inclined plane with a toggle clamp



9 While cutting the drawer front, the worktop was inclined by 2° to ensure that the external face of the front protrudes from the internal one and the front cannot enter the compartment **10** The perimeter walls were assembled using a variety of clamps **11** Making the cutouts in the front. I made a blind channel at the top, to make the cut with the dovetail cutter easier **12** Next, the dovetail cutter was used to make the hole trapezoidal **13 & 14** The sides are inserted into the drawer front through a sliding dovetail. The tap was cut on the router table with two passes on the opposite faces. Keeping the same height adjustment of the cutter used to groove the face, only the guide of the table was adjusted until the precise width was obtained. The length was adjusted by removing the last part of the tail with a saw **15** The rear joints and the seat for the drawer bottom were made with an end mill, in both cases adjusted to create a 5 x 5mm sash **16** Two strips were inserted in the drawer bottom to guide the sliding of the drawer **17** The drawer was then assembled with the upper piece

clamps orthogonal. Then I positioned the clamps, using slight pressure, and made sure the assembly was square. I inserted the upper piece and blocked it with two strips to avoid the piece lifting and guarantee the perfect levelling of the pieces. Finally, I increased the pressure of the clamps.

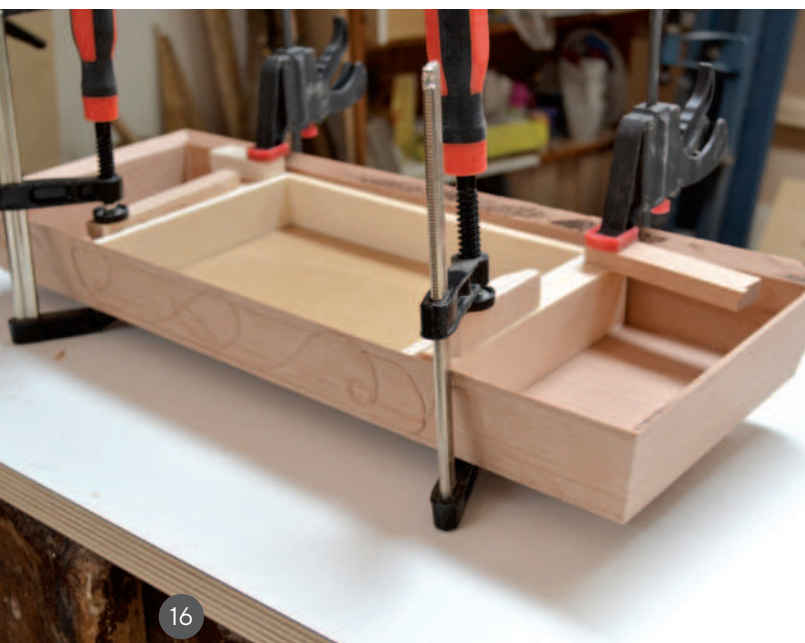
While the glue was doing its job, I prepared the bottom of the top, the previously cut slice that was cut to 6mm thick. I checked it was flat and then created the angled sides of 35.8°, given the angle of less than 45° I had to use the angled board.

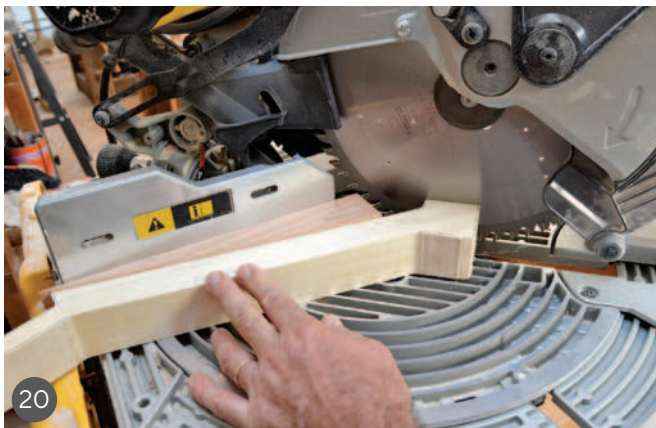
THE DRAWER

The drawer front has two sliding dovetails to ensure it is flush with the cabinet front. I made the two sides with 10mm plywood, cutting them on one side at the usual 12.5°, then with the router table and an 8mm dovetail cutter, I made the two inclined side dovetails.

For the front, I used the circular saw to make two grooves from the bottom and blind at the top, then again with the router table and the same cutter, I transformed the grooves into dovetails. With a hand saw I eliminated about 10mm of the sliding dovetail, to make sure that the two sides reached the internal end of the front. The remaining drawer continued with the insertion of the third side, joined by means of a half-lap joint, and the same for the bottom, made with 4mm plywood. To ensure correct sliding of the drawer, I glued two fir strips to the bottom of the lower surface of the structure. With the drawer finished, I was able to complete the solid upper trapezoidal of the cabinet by inserting the upper surface.

I made the usual 38.8° angled cuts on the four sides of the 8mm beech folder, then with glue and clamps I finished the first part.





18 The paper model of the legs and the 50mm fir board. Note the rectangle in the centre of the curve, which will help position the clamps. Each leg was made in two sections **19** A plywood template was made from the paper model and fixed to the fir with double-sided tape. After cutting with the bandsaw, there was 0.5mm left to remove from the leg **20** The handle between the two sections of each leg. To cut it with the mitre saw I had to insert a wedge against the stop to reach the required 52° **21** The two sections were laid side by side to trace the curve in the squared point **22** The two sections are joined by two 8mm plugs **23** The waste wood was removed with the bandsaw and finished with a plane **24** The two front legs are the same length so could be cut to size together **25** Two 8mm pins were used to join them **26** The three legs meet at a connecting block of wood **27** I used a template for the measurements of the side cutouts **28** The jigsaw and the two wedges were used to restore orthogonality **29** A Japanese saw was used for precise control when cutting the hole

THE LEGS

The legs are in the shape of an 'S' and are made from a 50mm-thick fir board. To begin, I made a template drawing at actual size, dividing the leg into two pieces at the centre of the second curve and squaring this part, so that the clamps in the assembly phase could operate orthogonally.

With the bandsaw, I cut out the six shapes (there are three legs in all) then, with double-sided tape I fixed some plywood patterns of the legs and, with the router table and a flush trim cutter with a bearing, I made the three legs identical to each other.

I then switched to the mitre saw and, by inserting a wedge on the stop, I was able to cut the junction points at 38°. I then took the paper model and, after eliminating the square corresponding to the second curve, I placed it on each leg and drew the curve with the pencil.

The definitive position of the curve allowed me to obtain two equidistant points, where, with the drill press, I was able to make two 8mm holes for each junction point. On these holes I inserted

two beech dowels, and, with glue and a press, I was able to join the parts. Once the glue had dried, I removed the excess wood around the joint using the bandsaw, completing the job with a plane and various files. Now I just had to assemble them to the extent dictated by the upper piece.

JOINING THE LEGS

I started this second phase using a shoulder plane at the points of the legs where the upper surface rests. Having defined the complete support and flatness, I was able to obtain the distance between the two front legs, inserting the upper piece between them. I placed a fir rectangle with the dimensions of 120 x 90 x 35mm in the centre of the join of the legs. This made it easier to calibrate their position and strengthen it, it will also be covered by the lower piece.

With two 8mm beech dowels and the drill press, I made the interlocking join of the legs, first the two front ones, then the rear one. They were held together with glue and clamps until the glue was dry.





30

30 The perimeter wall of the lower compartment was tested in its final position **31** Another Japanese saw was used to extend the channel
32 I mounted an 18mm-wide dovetail cutter on the router, with this I made five horizontal grooves, distributed along the leg
33 A small shoulder plane was used to level the channel **34** With the circular saw I made a long strip, with angled sides like the notches made in a dovetail. I inserted it and cut it to size **35** The cabinet could now be put to use!

THE LOWER PIECE

This is similar to the upper one, with the difference being that the back side and the bottom are missing, it also has two missing squares, which allow the insertion of the legs.

I first prepared the three 65mm beech strips, a front and two side ones, then with the same procedure as before, I joined them together.

On a piece of plywood, I checked the square to be removed to allow the correct insertion of the top through the legs. Then with the jigsaw I cut the two squares, between the position of the cutout and the perimeter of the top, two wedges having the same angle. Remember that the inclined perimeter of the cutout fits on the perfectly orthogonal legs.

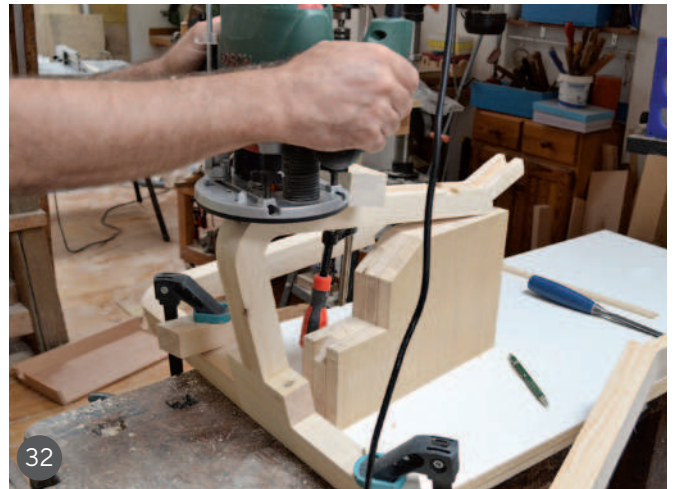
With a small Japanese saw and a chisel, I removed the slight roughness that remained, then I inserted the perimeter into the legs and made the final adjustments.

THE CHANNEL TO HIDE THE CABLES

Behind the rear leg I used the router to make a channel 18mm wide and 20mm deep. This would allow the various TV and appliance cables to pass through. For the straight section I used the router table with the parallel fence, while for the final piece, I used a Japanese saw and a 12mm chisel. To stop the cables coming out of the channel, I made five dovetail grooves, with as many spruce plates that completely hide the view of the cables.

THE FINISH

I bleached the legs with a very diluted water-based paint, then all the pieces received two coats of transparent water-based sealer and, finally, a coat of white wax and final polishing.



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EUROPEAN TREE OF THE YEAR

THE MILLENNIAL CARRASCA TREE FROM SPAIN
WAS CROWNED THIS YEAR'S WINNER

An ancient Spanish oak was named this year's European Tree of the Year. The Millennial Carrasca of Lecina is a 1,000-year-old holm oak in Aragon, Spain. Local legends tell of the 'old days' when witches used to come down from the Guara Mountains to dance around the tree. Today, that connection between the tree and the people endures: the oak stands in the small town of Alto Aragon, which has only 13 inhabitants, and it continues to provide a focal point for communal celebrations.

The Millennial Carrasca won the annual competition after garnering over 100,000 votes. Another 1,000-year-old tree, a plane in Curinga, Italy, finished second, while a sycamore in Dagestan, Russia, came third. The UK's entry, the Survivor Tree in Moffat, Scotland, finished in 11th place.

The European Tree of the Year contest highlights the significance of trees in the natural and cultural heritage of Europe and the importance of the ecosystem services trees provide. The contest is not looking for the most beautiful tree, but for a tree with a story, a tree rooted in the lives and work of the people and the community that surrounds it.

treeoftheyear.org

MAIN The Millennial Carrasca tree is a 1,000-year-old holm oak

TOP RIGHT Italy's 1,000-year-old plane tree came second

BOTTOM RIGHT Russia's Ancient Sycamore came third

MAIN IMAGE: PHOTOGRAPH BY AYUNTAMIENTO DE LECINA, COURTESY OF EUROPEAN TREE OF THE YEAR
PHOTOGRAPHS RIGHT: BY MIKHAIL EREMIN, COURTESY OF EUROPEAN TREE OF THE YEAR





CARVED STRAPWORK

KEVIN ALVITI SHOWS HOW TO ADORN FURNITURE WITH HAND-CARVED DECORATIONS

Carving strapwork is a remarkably easy way to add decoration to your furniture. Its sheer 'busyness' lends itself to hand carving and using only a few techniques, the carving builds into something that people can't help but be impressed by.

Strapwork is designed to look (loosely) like the leather or metal straps that used to decorate items in the past. I became interested in strapwork carving after seeing Peter Follansbee's work in his book *Joiner's Work*. His mantra of 'No blank space' becomes a work of art when used on his carved boxes and chests. It's also easy to see how you can adapt this style of carving to fill drawer fronts or panels on furniture. Using this carving, it's easy to make relatively simple pieces look far more impressive.

Strapwork dates back a long way, and its origins can be seen in Islamic geometric patterns called Girih, which were used heavily in architecture. There are even some surviving forms of this, carved in wood that dates back to the 13th century in a mosque in Cairo. Influences can also be seen in Celtic knotwork and key patterns.

Once you start to look for strapwork you will pick it out more frequently. It was popular in the 16th and 17th centuries in England and used on everything from ceilings and door frames to blanket chests, and had a revival in the 19th century.

The piece I decided to carve for this article was for a workbench that would become a sharpening station in my workshop. It's the first thing you see as you walk into my shop and, as well as adding some beauty to where I work, it would make a great talking piece for any customers that visited. It was also a great antidote to the perfect storm that was a third lockdown and home schooling my three children.

THE CARVING BLANK

For my piece I used English lime, as it's easy to carve and I wanted the wood to be light in colour as the piece was to sit in my small workshop. However, oak or walnut would be a more traditional and hardwearing choice depending on what it's going to be used for, and arguably the carving would look better when set into a darker wood. Obviously, the hardness of the wood will

make a difference to how the tools are used. With lime, you can often get away with just using hand pressure, especially when removing the background, whereas there will be more mallet work with the harder woods.

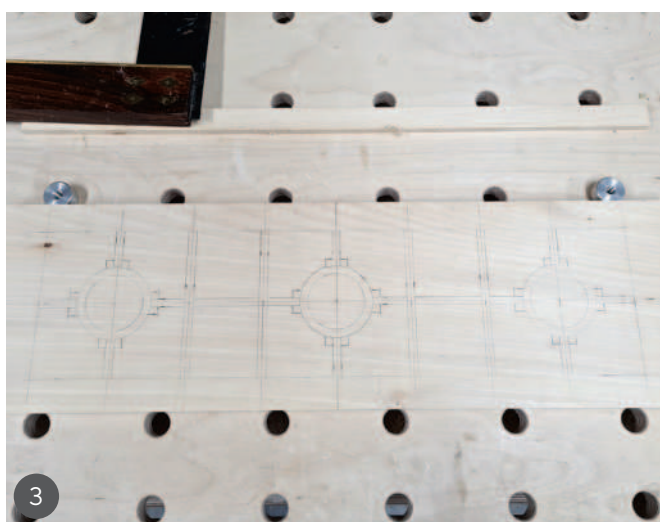
As with any carving, it will benefit from the timber being clean and knot free. As this is a drawer front, for stability's sake quartersawn is the absolute ideal, although mine isn't and there have been no ill effects. To start, you need to plane it down to a suitable thickness (in this case 22mm) as this will give you a good blank canvas to work on.

Depending on how you're using the piece, it might be easier to cut the joinery first, but if not then make sure it is properly protected when working on it. I'd also always recommend doing some practice pieces first – often I practise on a piece of tulip wood, which is cheap and will still take a carving well, but its green hue means it's far from ideal for a finished piece where the wood will be seen.

TOOL LIST

This is an approximate list, as lots of my tools have had many owners and generations of use, I have just used a chart to roughly figure out what size and sweeps they are:

No.6, 25mm
No.8, 10mm
No.8, 19mm
No.6, 13mm
No.5, 20mm
No.7, 25mm
No.7, 18mm
No.8, 7mm
No.5, 7mm
No.3, 16mm
Fishtail gouge No.3, 5mm
Bent fishtail gouge No.3, 5mm
6mm straight chisel
16mm straight chisel
Carving punch – hollow circle



PHOTOGRAPHS BY KEVIN ALVITI

INITIAL LAYOUT

Arguably the hardest part of this carving is the layout. The design is so busy it's easy to get lost and not know whether you're supposed to remove wood or leave it. For this reason, I tend to lay out and carve in stages. I use a pencil for all my laying out – I know in the past they would have scored the lines, but this way it allows me to correct mistakes easily and the lines can be rubbed away at the end.

I also know that the logical and fastest way of doing this would be to strike all the lines then remove the background, but my brain doesn't always work like that and I like to break up all long activities if I can. However, I can see that is probably how it used to be done for speed and efficiency's sake.

With this type of carving, it's important to make sure that the layout you decide upon works with your tools. The curves of the chisel need to match the curves you lay out, as it is curves that are created from a strike of the mallet, rather than a V tool, so the tools really are the carving in this case. It is really easy to tweak the design to suit the tools you already have.

To start with, draw on centre lines – as this is a symmetrical piece this helps keep everything in line. Then mark out a grid of

squares – in this case the grid is 60mm – dividers or a compass are ideal to make sure everything is the same. I've allowed enough room on the top and bottom for a border.

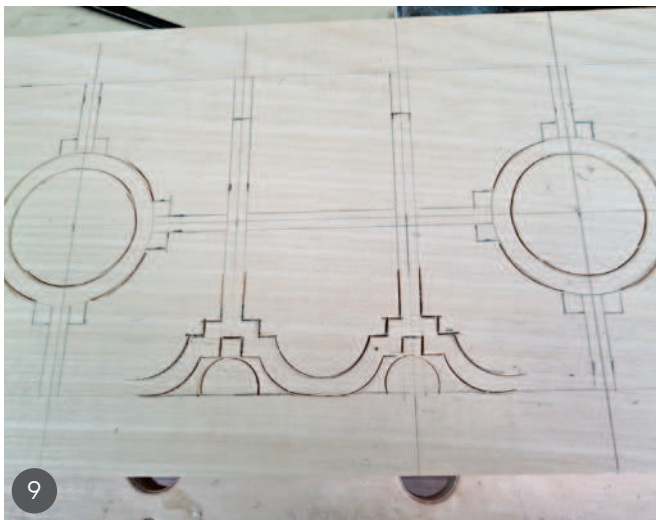
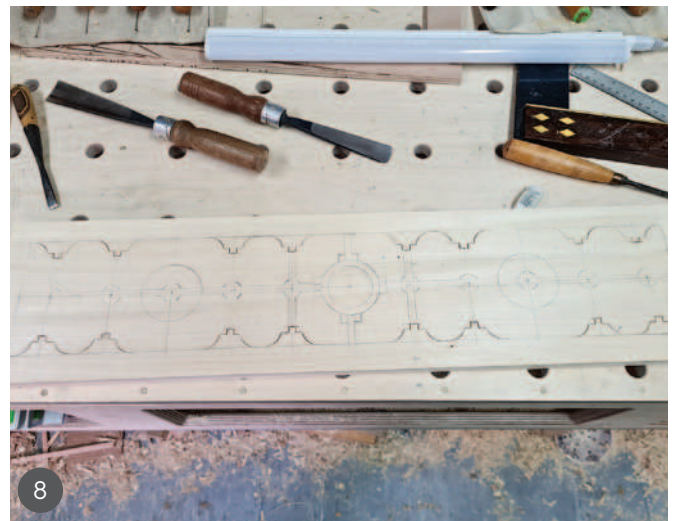
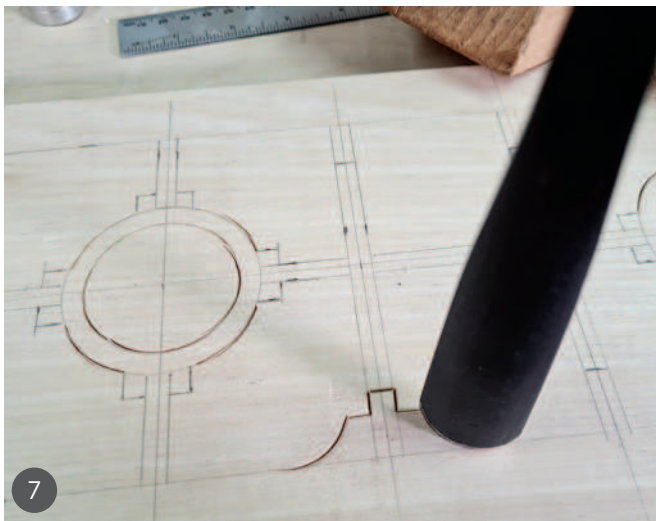
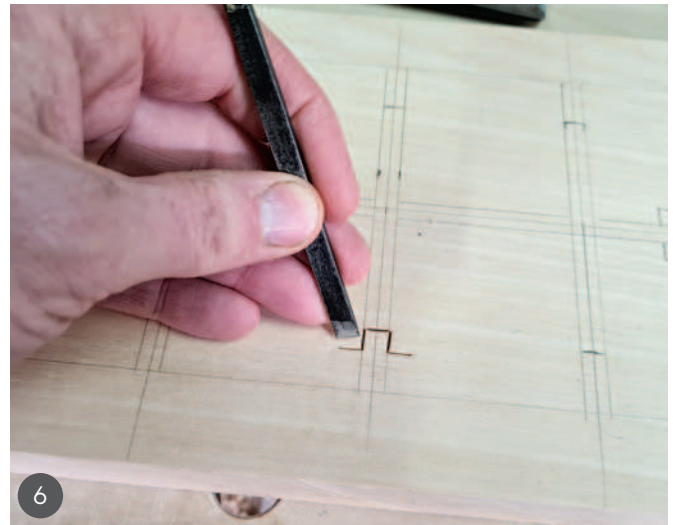
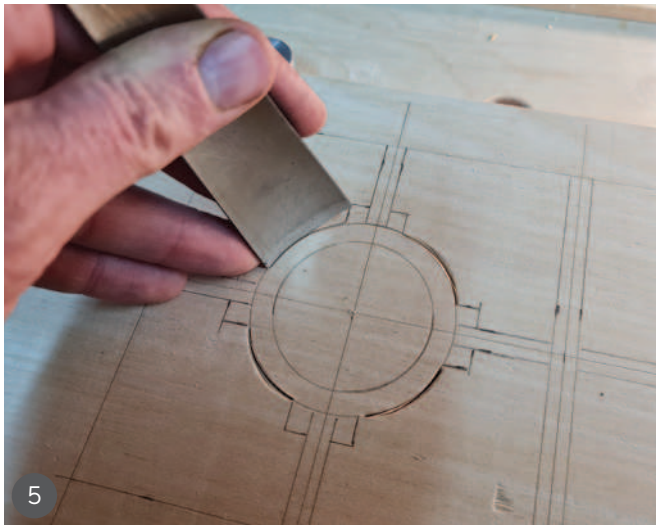
Lay the pinwheels out next as they're what the eye is drawn to. For the design I'm following I have a space of two uprights between each one. I have the diameter of these circles as roughly two-thirds the width of the grid I've just laid out.

I'd recommend setting the thickness of the 'straps' to the width of chisel that you already own. I have mine as 6mm but wider would work well on a bigger design. Draw these lines on to the work lightly.

The main thing now is to be consistent and make sure the lines all 'eye' through. Nothing has to be perfect as it's such a busy design that the eye will forgive a fair amount of variation before it notices anything, but having straight and true lines is key to this looking right.

CARVING THE DESIGN

Having the main circles marked out with their strapwork means that these can now be struck as well. Match your gouges to the curves and work your way around the circle (I used a No.5,



1 Lay out the centre and grid lines to keep symmetry 2 Mark out where the central pinwheels are to go 3 Draw on the straps and the margins around the central wheels 4 Strike the inside of the circles – an easy place to start 5 Strike the outside, leaving space where the straps widen 6 Using a 6mm chisel, strike the bottom of the U shape 7 A larger gouge connects this to the bottom of the frame 8 For repetition, all of these can be struck in sequence 9 The bottom leaves can now be carved in 10 Waste can be removed at this point to break the job of the carving up, apply hand pressure with the biggest chisel you dare to use



11 The large leaves at either end of the pattern can now be carved **12** Four strikes of the gouge produce the small diamond at the heart of the fleur-de-lis **13** The leaves are carved using chisels to match the shapes **14** With all the lines marked out, it's time to remove the background

18mm), being careful not to carve across the strap lines. A large gouge (such as a No.5, 30mm) is useful here but a smaller one will work just as well of the same sweep.

Mark a line a third of the way up all the straps that don't line up with the circles. Strike across these with your 6mm straight chisel. This is the underside of the U section. The chisel I use for this is double bevelled, but a normal chisel will be fine if the bevelled edge is kept to the waste side. Then come down either side of the strap line for one strike before going perpendicular again for another.

Then, taking a large gouge (in this case a No.6, 25mm), join the end of that cut to the line drawn as a margin.

With each strike I work up the carving in turn, making the same cut on each part of the design. That way the carving systematically starts to come together and mistakes are less likely (but far from impossible!).

The design then needs to be repeated above the first to create the 'straps', it doesn't need to be perfect but make sure that any over cutting is on the waste side of the carving. The centre part should meet to create a frame.

Take a smaller chisel, such as a No.6, 16mm, and strike the shape of the small leaves. It's up to you if you decide to remove the waste here at this point and lower the background. I do sometimes purely so it fixes in my mind which are to be the solid parts and which are to be removed. For the background on this piece, I'm going for a heavily tooled look where the gouge marks can be seen, but it could be taken back so it's smooth or textured with punches.

The two ends then need their leaves carving in place. Again, as this is all struck from the shape of the gouges, you might find that you need quite a few different sizes. A smaller chisel of the right curve can easily be used, it just needs to be struck and moved multiple times, but this is obviously more work for you. Sketching this out to get the leaves roughly similar before striking the lines can also be done, but once you get your eye in it's fairly easy to make them consistent.

Mark up the smaller circles between the larger ones and then mark the centre between them. On my design, this is a simple diamond carved with four strikes of a No. 6, 13mm gouge and,



15 Create the pin wheel with strikes of the chisel, then remove a sliver of waste behind each strike **16** Add simple detail to the leaves and any punch work **17** A selection of punches is a good way to add detail to a carving like this **18** Apply the oil finish in several stages

with the waste removed, this forms the start of the fleur-de-lis in the middle panel. From that centre diamond get a slightly tighter curved gouge (I used a No.8, 10mm) half the thickness of the strap away and mark out an almost complete circle shape, then with a larger tight gouge – in this case a carpenter's paring gouge around a No.8, 19mm) – mark the bottom leaf and bring the line so it finishes before the centre. The upper part of the leaf uses a slightly straighter gouge (a No.5, 20mm) and joins at the top.

With this marked out it's time to remove the background. A sharp tool and good control is needed here so as not to slip into the narrow straps which would be easily damaged at this stage. I try to use hand pressure only, using both hands, to remove the waste. A smaller, bent fishtail chisel is useful here for getting the hard-to-reach waste bits out. I try to use matching homemade leather slips as often as possible to keep them sharp. Once the background is taken back, it's time to add in some detail. Veins can be added to leaves, again with strikes of the chisel, and a small cut behind the strike to remove a small sliver of wood to create a shadow detail.

The larger circles can be dealt with in a number of ways, but a simple pin wheel is easiest. Ease the edge nearest against the inside line; then taking a gouge large enough to go from the centre to the edge (such as a No.7, 25mm), strike five impressions spaced evenly around the circle. Selecting a slightly shallower sweep gouge (No.5, 20mm), remove a small 'c' shape from behind the first cut. This creates the shadow detail. You could also carve small rosettes in their place, if you felt that a pinwheel was too simple.

Some detail can also be added with punches. A large nail punch can be used effectively but there are speciality punches for carvers that can add a variety of shapes and patterns which are easily punched into the work. Used correctly they can really break up the carving and add in some easy detail. A circle works well, punched into the design at set points it helps to add detail to the straps.

To finish, simply use boiled linseed oil applied with a rag and a brush into the details and then remove any excess with a dry, lint-free rag. I built up a number of layers over a period of days, as I was taught 'an oil finish is never finished' so I will try to remember to treat this work a few times this year.



Lost worlds found

FROM A CHILDHOOD COLLECTING NEIGHBOURHOOD JUNK TO A CAREER CREATING ART FURNITURE PIECES FROM FOUND OBJECTS, **TED LOTT** TELLS THE STORY OF HIS LIFE, HIS WORKS AND HIS SIDEKICK – A RESCUE DOG NAMED BEANS

Tell us about your background and training.

My background in woodworking started as an undergraduate student at the Maine College of Art in Portland, Maine. I had intended to be a sculpture major and took a woodworking course to help me learn how to work the wood tools, but fell in love with it. Luckily the college was starting a Woodworking & Furniture Design major that year, and I became part of the inaugural class. I also took part in a number of workshops at places like Haystack Mountain School of Crafts and the Penland School of Craft. I also received an MFA from the University of Wisconsin-Madison, a three-year programme.

How did you learn your craft?

I was fortunate to study under a number of talented and influential woodworkers, but I must credit my learning largely to practice and repetition. I'm always interested in the next project and the next challenge: both in the technical woodworking aspects and the challenges of moving forward an idea or concept of what the work is about. For that reason I very seldom repeat a work, or make more than a few of each piece. The ideas sometimes get reiterated, but I feel like they evolve with each new work, each re-telling of the story.

What was the first project you completed?

My first project was a total disaster, it was an assignment for my beginning woodworking class. I can't even remember now what the parameters were, but I distinctly recall that I bit off way more than I could chew, and the project fought me the entire way. I still remember the moment that I threw it into the scrap bin and started over. It was an inauspicious beginning, but it taught me a lot about the importance of perseverance and moving forward, even when you can't see the way.

Your artworks are like nothing we've seen before. Please could you tell us a bit about your journey to making them and the thinking behind them?

My current work revolves around architecture and its relationship to the objects of material culture. I work with found furniture, suitcases and other items that carry their own history, and the evidence of their previous lives and purposes as useful objects.

I've been working with found objects for a lot longer than I have been a woodworker. Even when I was in grade-school I was attracted to these things, which other people might describe as junk. I would walk around our suburban neighborhood with a red wagon and collect the 'trash' that other people were getting rid of. A lot of the time I would take it apart or reassemble it back together in different ways, or just keep it around because I liked it. I was a strange kid. I give lots of credit to my parents, who supported my weirdness. My dad opened an account with the local hardware store so I could ride my bike over there and get supplies like screws, glue, paint and so on. I remember my mom pulling over on the side of the highway so I could get out and collect all the hubcaps that had rolled off people's cars...

My current body of work grew from a graduate school course on vernacular architecture. We were studying local buildings and the methods that were used to build them. The connection between furniture-making and architecture has a long history: the most obvious examples are the post and beam methods, which use a lot of the same joinery techniques as furniture, such as mortise and tenon joints, but on a larger scale. However, most of our current housing is built using stud-frame construction, with standardised materials like the 2x4. I became interested in what that process of stud frame construction would do if reduced in scale.

Later, during an artist residency, I began to combine the architectural miniaturised stick-frame method with existing





furniture, and the result was powerful. The juxtaposition with full-sized objects highlights the relationship. Each is designed around the scale of the human body, but at different scales.

Where do you get your ideas and inspiration?

The best ideas come to us from the world around us, so I'm always looking, always reading, always exploring. I'm a believer in learning through doing. The action comes first, then the ideas develop while you work.

You particularly mention the idea of shelter on your website, can you tell us a bit about that and how you work with that concept?

Along with clothing, food and water, shelter is a basic requirement for human life. During most of our history, shelters were made of local materials: timber, stone, hide, grass and mud provided protection from the elements. However, with the coming of the industrial revolution, locally sourced materials gave way to industrially produced ones – 2x4s and nails replaced timbers and elaborate joinery.

Today, stud frame construction is a primary means by which shelter is created from wood. While connoisseurs have long lauded the skill, precision and exacting craftsmanship required to create a post and beam structure, the majority of our homes, commercial buildings and other structures are made using the stud frame method.

I love the simplicity, logic and engineering brilliance of stud frame construction, which we usually only see when we pass by construction sites. This method is used everywhere, but hidden, almost completely overlooked.

How do you source your materials?

I usually buy rough-cut lumber from near to wherever I am working. I like to search out local sawmills and get to know the people who run them. After a while, they will call you if they get a good batch in that they think you might want. For the found objects and furniture, I'm always keeping an eye out, checking on garage sales, thrift shops, antique malls and so on.

When you're picking a found object to work with, is there anything that you are particularly looking for?

There is no specific set of criteria, but I definitely know them when I see them.

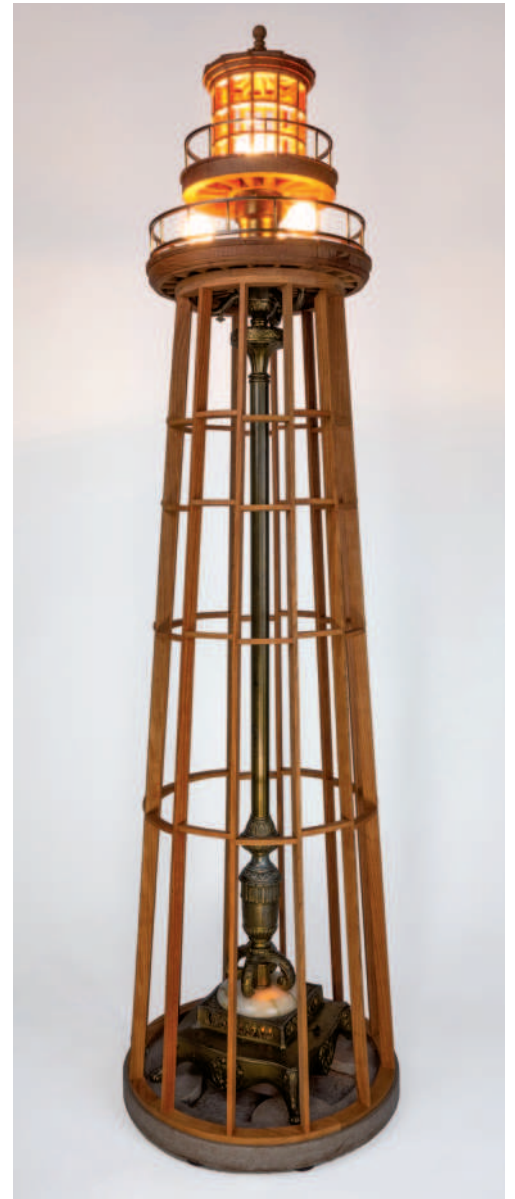
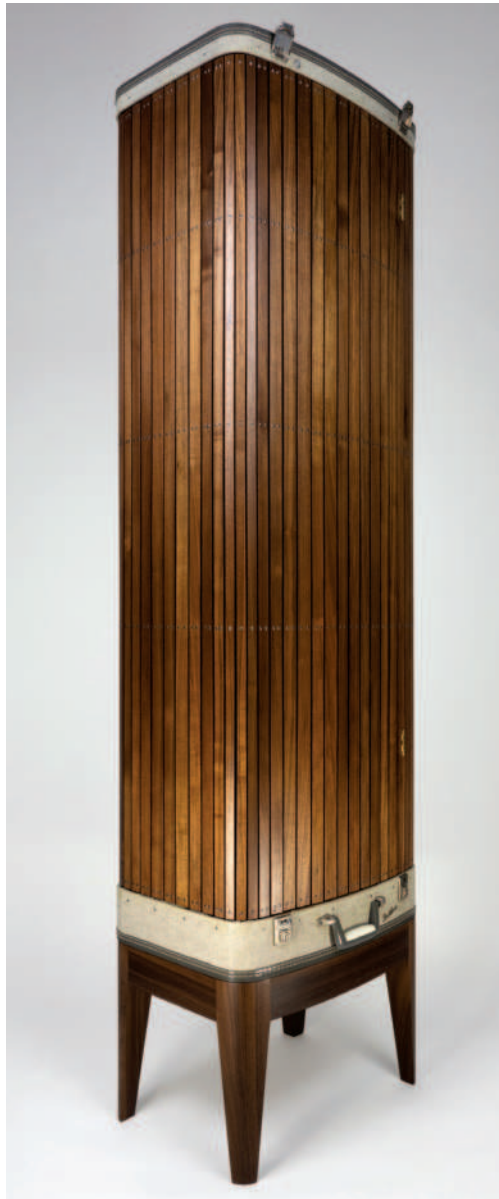
Do you have any advice for readers who would like to make things with found objects?

It's really helpful to spend some time getting to know the object, really understanding its materials, how it was made, where it was put together and possibly how can it be taken apart. I suggest spending some time drawing the object. There's nothing that helps to comprehend something better than drawing it.

How does your design process work?

That really depends on the piece. Sometimes, if I have a pretty good mental image of the work, I'll just begin with no design or drawings at all, just a rough sketch. On other works, I'll end up doing full scale 1:1 drawings of the work from all directions before I even cut a single board.

PHOTOGRAPHS BY TED LOTT



With the found object works I sometimes take a photo of the object, then manipulate it using a variety of methods, from Photoshop to actually cutting and pasting the print-outs of the object with real scissors, and then drawing on top. Often then the drawings get scanned, digitally edited, then printed and drawn on again. This process goes on until I arrive at the finished design, or until I screw it all up and have to start again with the original photo. Sometimes I'll have two or three designs for a single object, then I have to decide which one to go with.

Tell us about your workshop.

I'm really lucky to have a home workshop situation, a 2,000sq ft barn that's located in our backyard. It's a single-storey barn with 12ft ceilings and a concrete floor. We just moved in spring 2020 and I did a lot of improvements before taking residence, including insulating, putting up drywall, electrical, painting and so on. The biggest improvement was the installation of a 10x10ft insulated glass garage door. My previous studio was in a beautiful old industrial space and had tons of great natural light, but the new barn had no windows at all, so it really makes the space a pleasure to work in.

Your little dog Beans features regularly on your Instagram feed and even has her own Insta account. Can you tell us a bit about her and what she gets up to when you're working?

Beans is my full-time sidekick and shop dog extraordinaire. She's a rescue we got while living in upstate New York, she came from a family who were forced to move and couldn't keep her. She's about five years old, and is a chihuahua-pug mix, or 'chug'. She has a spot in the shop over by the window where she sits and observes the goings on both inside and out. Before Beans, I never had a pet of my own, and she has brought so many great things to my life, including making me get out and go on walks, which is a great way to get out and think over a problem. But most of all, it's the greatest feeling to have something that gets excited whenever you walk into the room!

Which woods do you most like working with and why?

With the architectural work, I started out using exclusively white pine, because softwoods are the 'correct' wood for 2x4s. However, I have moved over to using basswood, which is a similar colour, but is a little easier to work with and doesn't gunk up my machinery with pitch. I've also recently made a few pieces with cherry and with walnut. Because most of the work is assembled with a pin nailer, it's important that whatever wood I use be soft enough that it doesn't cause the nails to turn and protrude out the sides.

Do you work with other materials as well?

I have recently begun working with brass, which I'm really loving. It's a relatively common material, not too precious, which is

important to me. It's easy to work and can be cut and sautered with ease, and its strength allows me to work thinner, on items like windowpanes, than I can achieve with wood at the same scale.

What sort of finishes do you prefer?

Most of my work uses a brushed-on tung oil finish. It gives the wood a basic level of protection, but my pieces are intended to bear the evidence of age and use to accumulate their own history along the way, so I don't try to get the finish perfect.

Tell us about how you work – what type of tools do you like to use?

I'll use anything that will get the job done, but my go-to tools in the shop are my bandsaw, where I mill the scaled lumber; my chopsaw, where I cut things to length; and my 23-gauge pin nailer, which is the primary way that I assemble the work. A lot of people think that using a pin nailer is cheating, or that the resulting structure will be weak, but the concept is the same as in a full-scale building – a single nail connection may be weak, but the accumulation of thousands and thousands of them ends up creating an extremely strong and durable object.

Are there any tools you avoid?

I'm not a very digital thinker, so I don't use CNC or anything like that. No shame, but just not my thing.

What is your favourite project you have worked on?

My favourite is always the next one. I just started a new piece working with some steam-bending and combining with some other materials and found objects. On this one I'm working without any drawings or plans, just feeling my way through. It's a bit unsure and nerve-racking, but it keeps me excited to get in the studio.

What is the most challenging project you have worked on?

I did a public art piece many years ago in collaboration with another artist. I've never encountered quite so much bureaucracy in making anything as that. It was challenging and exhausting and hard, and I'd love to do another one!

Where do you see your work going in the future?

Looking to get back to doing large-scale work, now that I'm in a new studio and will hopefully be here for a while.

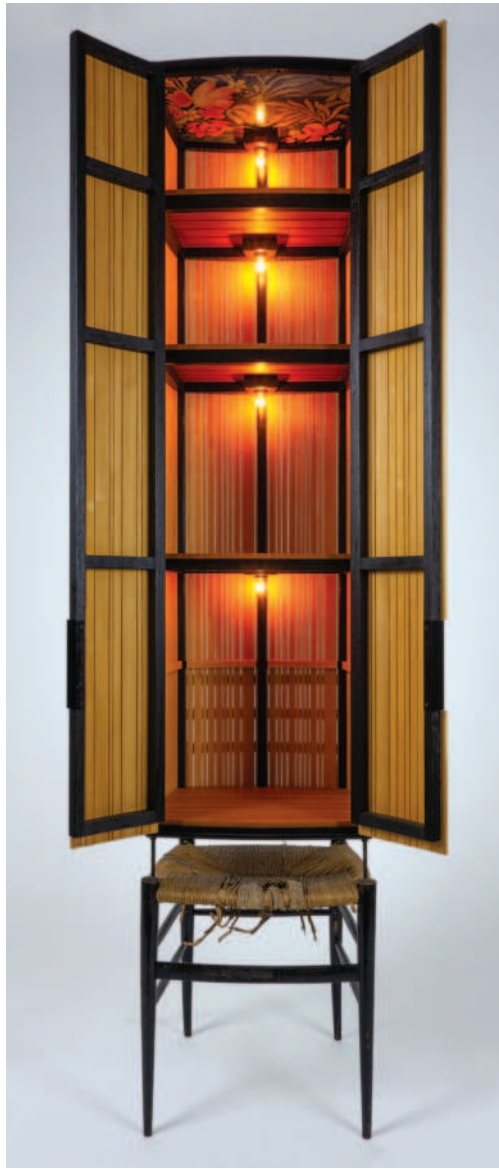
What do you do when you're not working?

Lately it's been all about the home improvements, but we also love to canoe the rivers around where we live, it's a really simple and lovely way to get out into nature and experience a change of pace and scenery while staying properly socially distanced!

tedlott.com

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

Before Beans, I never had a pet of my own, and she has brought so many great things to my life, including making me get out and go on walks, which is a great way to get out and think over a problem. But most of all, it's the greatest feeling to have something that gets excited whenever you walk into the room!



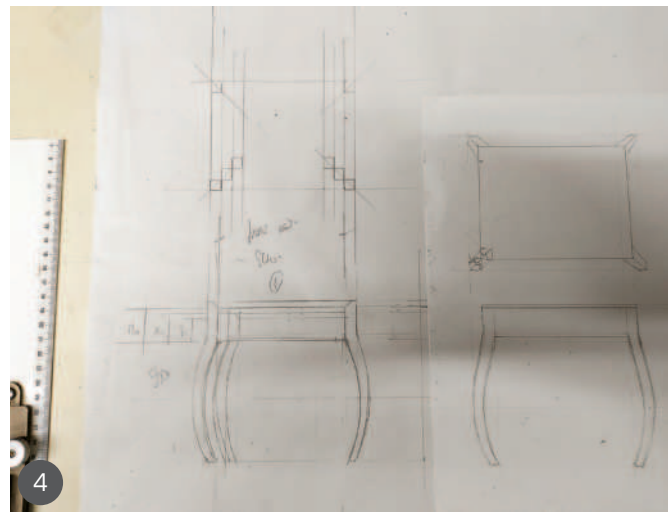


DUNE NEST OF TABLES

THOMAS EDDOLLS IS COMMISSIONED TO MAKE A
NEW PIECE BASED ON ONE OF HIS EARLIER DESIGNS

Following on from a hall table commission (see the Dune table in *F&C 296*) I was approached again by the same client who wanted a nest of three occasional tables in the same style as the original work.

Based around the original formed structure of curved legs and incorporating the dune-shaped contoured frontage, we agreed on the concept and principle and so I set to work on the drawing board to make it into a reality. Initially I presented my ideas as hand-drawn 3D sketches, which were watercoloured in to give the impression of the finished piece. At this stage it was important to pick up stylistically on the features of the original piece and incorporate them into a usable and functional nest of occasional tables.



PHOTOGRAPHS BY THOMAS EDDOLLS

1 The Dune hall table inspired this new commission for a nest of tables **2** The initial concept for the nest of tables was laid out in a 3D watercolour sketch **3** A solid oak plank was needed for the 'dune' effect profile **4** The design was refined to confirm how the tables would nest together

CHOOSING THE MATERIALS

These pieces being of a different nature, once the concept and commission was agreed I had to go about resolving issues regarding construction and wood movement. The original hall table was made out of a solid dovetailed carcass and as such would be able to move together with any changes in the ambient moisture content of the surrounding environment. On the new tables, with the cross direction of the top locked in by long grain side rails, a solid oak top was out of the question. So I decided to use a veneered top, solving the movement issue.

I opted to use a 1.5mm oak veneer adhered to a 15mm birch ply substrate. I like to use thick veneers where possible that can take a dent and can be reworked if any restoration is needed.

So the principle was outlined and I could begin with the making. Tying in a visit to Tyler Hardwoods for a couple of other projects, I purchased some 100mm cherry for the legs and some 50mm oak for the sculpted rails.

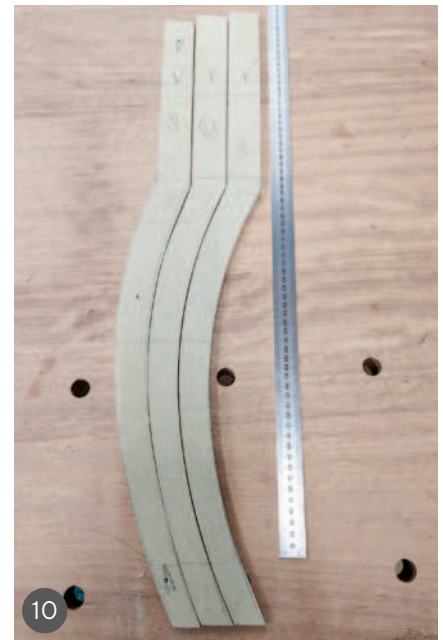
CREATING THE 'DUNE' PROFILE

On the original hall table, the 'dune' profile was achieved using CNC technology by the innovative pioneers at Waywood CNC. To get the same effect on the new tables, my first job was to produce a solid oak blank from which a terraformed moulded panel could be machined, which I would then cut down to make the front and stretcher rails.

REFINING THE DESIGN

Once I had achieved this stage and had all the elements it was time to figure out the finer details at the drawing board.

It was at this stage that important decisions needed to be made for the tables to nest properly. After discussions with the client regarding preferred leg positions, we both agreed they should nest diagonally inwards, so I drew up a 1:10 scale technical drawing. The rest of the problems were to be figured out on the bench.



5 The MDF leg template was used to mark out the curves 6 The legs were then roughed out on the bandsaw before shaping on the spindle moulder 7 & 8 The legs were finished using a compass plane 9 The complete frame for the outer table 10 More leg templates were needed for the inner tables

MAKING THE OUTER TABLE

I decided to produce the outer table first and work my way inwards from there. The first task was to produce some leg templates; these would help determine the form of the legs. I made a quick bandsawn template to get a read on the compound curve deflections; making this template also gave me an indicator as to how the pieces were to progress and a feel for the project. Looking at this rough mock leg and after having a creative discussion with the client, we both agreed that the

aesthetics weren't right – the leg had too much curve deflection. I made a new leg template, happily arriving at a less pronounced solution that was more in keeping with the feel of the original piece these tables were to mirror. Once I had reached this stage I could begin to machine out the first set of legs.

Using my shaped MDF template to mark out the handed curves I then roughed out the legs on the bandsaw before shaping to finished profile on the spindle moulder with a ring fence and rebate block.



11 The tables were rough cut then shaped with a flexible template before being cut to length
12 The legs were assembled with the side and front rails



To do this I made a base board one-to-one routed from my template out of 18mm MDF to which I could mount the workpiece, in this instance by screwing through the board into the waste section of the overlength legs before machine shaping.

Owing to working in isolation I was restricted to the capabilities of my small combination machine which, while versatile, has a limited rise and fall of the spindle height and as such I could not machine the whole profile. This was no problem though as once a clear and defined outline was made, a bit of time with the compass plane was all that was needed to work down the rest of the leg.

With the legs for the outer table produced I then sawed and planer-thickened the stretcher rails down ready for jointing. I opted for a Dominoed joint on this occasion as I could not find much of an advantage to a more traditional mortise and tenon in this instance.

And so the first table frame was complete.

THE INNER FRAMEWORKS

I could now work on the inner two frameworks back inside the outer assembly.

A question I had been asking myself was, how would the three sets of legs interact with each other? Could I use the same template, reducing jig-making and operation times? After drawing things out full-sized, I decided that there would need to be a leg template made up for each table. They would work progressively inwards so they nested neatly at 45° after sliding in from the back, the top two tables not having a back rail to allow for this and the smallest and lowest table having stretcher rails all round.

With the appropriate profile templates reached, I now set about working out the next two sets of legs.

Following the same procedures as before with re-tailored base boards for the slightly different shapes, I marked all of the legs out on to the 100mm cherry boards, nesting them together to save material, and rough cut them out on the bandsaw. I used a flat surface against the bed to produce the first curve, then using a quickly shaped flexible template taken from the original Dune table, I marked the opposing curve on to the component and sawed out the other hand. It was quite a fun feeling to see a shaped leg emerge!

When all of the legs had been shaped, I cut them to length, leaving the tops a bit long as there were some mitres to be considered at a later stage: a detail incorporated from the first commission. I jointed the rails in and then mitred the tops of the legs to create a type of mitred birdhouse joint. I usually stick to the tablesaw as much as possible but in this instance I worked to scribed knife lines and cut with a chapsaw – as the reference area was small and straight, I felt this was a safer option. This was a tricky feature but I had decided from the start that with no revealed joinery on show, this would add an element of interest to the pieces that echoed the influencing idea.

With the mitres cut I could begin to pinch the legs on to the side rails after a clean-up before bringing the assemblies together with the front stretcher rails and carefully checking for square.

For the clean-up, abrasive papers give a fine finish but over jointed areas where flatness and trueness are paramount, especially in a piece like this where the irregular face of the contoured face meets the leg, I dress these surfaces carefully straight from a hand plane. This gives a fine finish and a crisp joint line.



13 & 14 A quick check showed that the tables fit together correctly **15** The tops and frames were joined up successfully ... **16** ... before being jointed and clamped in place

After leaving plenty of time for the glue to cure (Titebond 2 in this case), I popped the tables together in their nest to make sure everything worked. Happily all was present and correct.

THE TABLE TOPS

While the frames had been in the clamps I had prepared the birch ply substrates, lipped with a 5mm oak lipping, and made up the construction veneers for the finished surface.

When using thick veneers like these – 1.5mm crown cut oak in this instance – I was taught to edge-glue the jointed edges before pressing. The method I used to do this, again another handed-down technique, was to shoot the edges of the veneers straight with a No.7, then bind the joint together using masking tape. The stretch of the tape pulls it tight. You need to add strips of tape approximately

150mm apart horizontally before running a strip down the length of the joint. Flipping the workpiece over and hanging the joint on the corner of the bench, I ran a bead of glue along the joint before folding the leaves back up, scraping the excess glue off with an old stainless-steel ruler – I didn't want to run the risk of tool steel reacting with the water-based adhesive and the tannins in the oak before repeating the taping process. It's useful to leave the veneers nice and flat while they cure, preferably under weight or pressure.

FITTING THE PIECES TOGETHER

Finally I had all of the pieces to the puzzle, I just had to fit them together. There was one last tricky bit of making left, seemingly innocuous but with no room for error – mating the tops to the frames was a clinical task.



I had been mithering over different ways of doing this, but eventually decided to work over the top of the saw with an angled cross-cut fence, having set up both sides of the square at 45°. This is not something I would normally condone, but in the interests of efficiently producing the goods and understanding both the power regulations regarding my solo operation and my inherent fear of any dangerous woodworking machine, I felt confident of safely working through the operations using the thorough grounding of safe machining practices I learned at Warwickshire College under Armando Magnino. With minimal saw protrusion and it being a light operation, I assessed the possible risks before establishing an accurate datum to be finished in by hand. Measuring and marking were of the most critical nature here.

Working from the inside shoulder lines I panel-sawed the tops to dead size, and using the rip fence pulled back all of the joints from the front of the saw blade as a stop cut in a sequential operation.

It felt good dropping the tops on to the leg frames to see them mate up.

Running all three tops through the same careful process, I jointed them to the top of the rails with biscuits before the final glue-ups, G-clamping them into place and pinching up joint lines where necessary.

The making was finished and all that was left was the laborious task of the final clean-up, finished all round to 240 grit with an oiled finish in Satin Osmo. I was delighted to finally deliver the finished articles to my wonderful clients.



CAREFREE CREATIVITY

KERRY DOLAN EXPLAINS WHY IT MAY BE TIME TO RETURN TO THE JOYFUL, EASY STYLE OF CHILDHOOD MAKING

Children seem to be in a constant state of creativity. Every pebble is a precious jewel, each journey is an adventure, discarded boxes open up new worlds. They throw themselves into playful exploration, unfettered by self-consciousness, unworried that they might get it 'wrong'. And their movements appear impulsive and carefree, rarely taking the well-trodden paths. Little by little, however, most begin to learn to measure and weigh accomplishments, until, as adults, they find themselves grasping for originality and perfection.

This is partly because many people equate creativity with artistic talent, associating it with painters, sculptors, musicians, dancers, thinkers and innovators whose works have stood the test of time or proved revolutionary. Yet creativity, simply put, means solving a problem by thinking outside the box. Scottish engineer Alexander Graham Bell, chemist Alice Ball and polymath Leonardo Da Vinci all excelled on this front. But so do many people, every day of the week – including makers like yourself. Think of the times when you've improvised a clamping solution or made something beautiful out of offcuts. There's always the capacity to break rules, to adapt existing models, to implement new ideas and find an innovative and personal way of doing things.

CREATIVE ANXIETY

If this is the case, however, why don't people do it more often? Sometimes it feels as though the stakes are too high. There's also a fear of getting it wrong, looking stupid or wasting time. As life gets busier, it seems to make more sense to follow existing patterns and examples. That purity of childish expression

and invention is, after all, often gradually eroded from the first moment approval is sought for any creative work, as author Lucy H Pearce illustrates in *The Rainbow Way*: "Look mama!" We say to our first art critic, showing her our creation with great pride and an open heart... And then, at school we are told to colour in, only inside the lines, make things the right colour, all make the same art project.' Sharing ideas with the world can make a person feel vulnerable and exposed.

Sadly, initiative is often a last resort, engaged only when all carefully laid plans have failed and thinking on one's feet is the only option left. Yet getting creative can help people to connect with the world in a more focused way, engaging the senses and the imagination. It can allow them to enter a flow state, where mind and body operate together fluidly, and it's possible to become completely immersed in the task at hand. So, the question is how do we shake off creative anxiety?

FINDING CREATIVE FREEDOM

One answer might be to play like a child again, experiment in a carefree way and forget about the results. Not sure how? Think about what you liked to play with when you were very young. What were your go-to creative outlets? The trick is to look at low-stakes activities, free your imagination and try to give it a go without worrying about the end result.

It can take quite a lot of practice for some people to really let go. Don't worry. Just pretending to be a kid can help to reconnect with that sense of wonderment and curiosity. Once you find it, explore how it feels so you can recognise it and call it up at will. Treat your creative spirit with kindness. Be gentle, accept where you're at and appreciate each little gain.



EVERYDAY ORIGINALS

Challenge yourself daily to approach at least one task a little differently. Explore a wide range of activities, embracing your childish spirit of intrepid exploration. Here are a few ideas to get you started:

- Draw with unconventional materials, such as make-up, mud or condiments. Not using paper would really embody the spirit of childhood.
- Get a children's colouring book and deliberately go outside the lines, noticing any reticence you might have about this.
- Challenge yourself to produce a piece of art that you feel is bad.
- Rearrange bookshelves, combining titles by height or colour. You could try rearranging the tools in your workshop too.
- Keep a doodle pad with you for impromptu sketches or notes.
- Using free online resources, write your to-do list in another language.
- Draw something without lifting your pen from the paper.
- Look up! Raising your eyes can bring a fresh perspective. In cities and towns, cast your gaze above the shop facades to see architecture that often goes unnoticed.
- Create a collage from old magazines.
- Set a timer for 10 minutes and write or draw anything that comes into your head. Don't strive for the perfect image or words, or pause to think about what you want to create.

PHOTOGRAPH: IRENE MILLER/SHUTTERSTOCK.COM



VACUUM VENEERING AND LAMINATING WITH AIRPRESS

SUCCESSFUL VENEERING CAN BE DONE IN YOUR OWN WORKSHOP WITH THESE PORTABLE SYSTEMS

Before April 1993, when AirPress managing director Peter Hoggard launched the UK's first commercial portable vacuum bag press, if you wanted to veneer flat panels, your options were very limited: you could invest in a flatbed press (big and expensive), you could learn the art of hammer veneering with animal glue (outdated and impractical for anything

other than restoration and perhaps some high-end reproduction work), contract your work out to a specialist veneering company (maybe, maybe not) or invest in a load of clamps or a big pot of contact adhesive (not going to work). It is safe to say that the AirPress portable vacuum press arrived at a time when most workshops avoided veneering and laminating. Since then, AirPress

has provided a cost-effective solution for thousands of workshops with its range of quality portable vacuum bag presses, benchtop membrane presses and floor-standing membrane presses, and the impact can be seen in the expanded design portfolio in all of the woodworking industries, from furniture makers to kitchen manufacturers, shopfitters, boatbuilders and more.



PHOTOGRAPHS COURTESY OF AIRPRESS

ABOVE Ethereal desk by Marc Fish, laminated using the portable AirPress system **TOP** The Industrial AirPress in use in Marc Fish's workshop

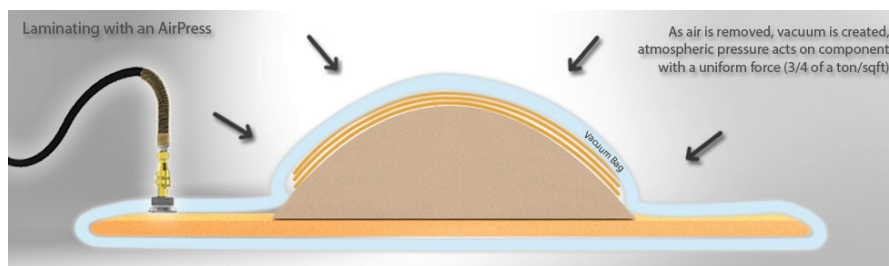
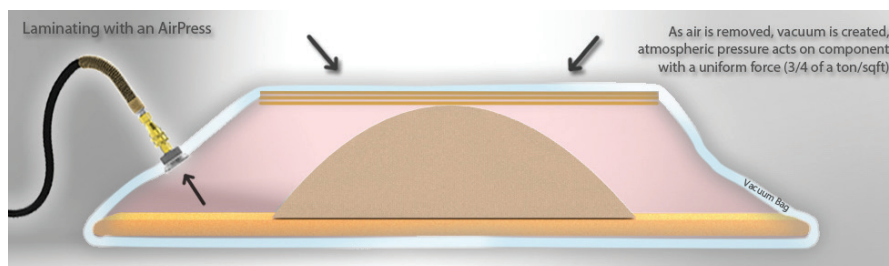
THE TECHNOLOGY

Contrary to what many people think, a veneer is not sucked on to a panel. When you create a high vacuum in a vacuum bag the air outside the bag pushes against the bag and the veneer, as there is an imbalance of pressure between the vacuum inside the bag and the atmospheric pressure outside the bag. Although we cannot feel that pressure because we have air inside our bodies, the pressure equates to in excess of $\frac{3}{4}$ ton per square foot or about 9 tons per square metre, with the added advantage that it is an absolutely uniform pressure. But it is not just in the woodworking world that vacuum technology is used: engineers in other industries like aviation, yacht building, manufacturers of luxury car interiors, wind turbines, aerospace and other fields have all recognised the advantages of vacuum pressing.

SUCCESSFUL VENEERING WITH THE PORTABLE AIRPRESS

Vacuum veneering is surprisingly easy so long as you stick to a few simple rules. While some veneers, like burrs and curls, will require flattening before pressing, most veneers are flat enough to cut, joint, tape and press. However, no veneers lie perfectly flat and when placed on top of a glued substrate, they will touch in some places and not in others, resulting in slight wave patterns. If you then press this veneer against the inside of a vacuum bag, the atmospheric pressure will push down hard on the areas that are touching the substrate, locking it in place and preventing the rest of the veneer from lying flat, which can in some circumstances end up as cracks, bubbles or even wrinkles. Thankfully, this is easy to avoid!

To prevent this from happening and facilitate the vacuum veneering process you should make a baseboard out of 18mm MDF to place inside the bag. Do not be tempted to use melamine-faced board or other non-porous materials for the baseboard as the bag will seal around the face of the board, trapping air around the panel that you want to veneer. The corners and edges of the MDF baseboard should be rounded to avoid damaging the bag when in use. There is no need to rout a pattern of grooves in the baseboard, as this



ABOVE The range includes different bag sizes to suit furniture makers' needs

BELOW AirPress managing director Peter Hoggard with a portable AirPress vacuum bag system

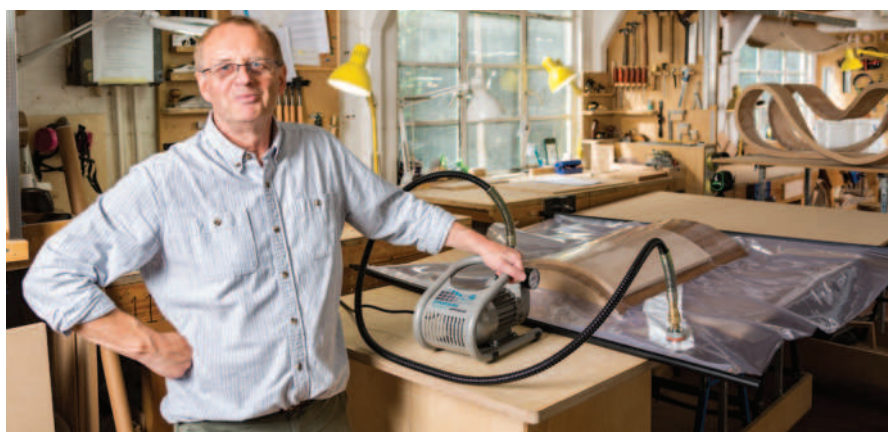
can mirror a pattern in the glue line when pressing. Every AirPress system comes with 10cm-wide breather fabric which acts as a pathway for the air to escape from the bag, preventing trapped air.

VACUUM VENEERING A PANEL

There are two ways to veneer a panel: one side at a time or both sides. When veneering one side at a time, put the baseboard into the bag and slide the panel veneer side down on to the baseboard, with newspaper in between to keep the baseboard clean. Pressing this way ensures that your veneer will be pressed perfectly flat and it does not matter how far the veneer overhangs your panel, as it is flat against the baseboard. When the glue has cured sufficiently for the panel

to be taken out of the bag, the veneer can be trimmed flush with the edge and the other side of the panel can be pressed the same way. It is important to press the second side as soon as possible to avoid cupping the panel when the veneer on the first side starts to dry out and shrink.

If you want to veneer both sides at the same time you will need to place a thin MDF caul over the top veneer; 6mm-thick MDF is perfect for this, but it will be necessary to trim the veneer to overhang about 5mm and the MDF caul about 6mm. Pressing both sides together cuts the overall pressing time in half and ensures distortion-free veneering. However, if you have different sizes of panels you will need to cut different sizes of cauls, so it is sometimes more practical to veneer one side at a time.





AirPress offers a range of portable vacuum pumps

THE SYSTEM

AirPress offers four different systems in the portable AirPress range with different bag sizes and vacuum pumps to match the size of the bags. The company puts quality first when it comes to its components. There are two types of bags included in the range: the 500microns thick, high frequency welded vinyl bags and the 600microns thick seamless polyurethane bags – twice the thickness of some competitor systems. Of the two, the polyurethane bags are better suited for laminating shaped work as well as flat work since they are more flexible and have a degree of stretch. If you only intend to veneer flat panels, the lower cost vinyl bags are a good option. AirPress makes custom bags to any size in addition to the five standard sizes, and the bags are sealed with a two-piece extruded bag closure developed specifically for this job.

All of the AirPress systems come with high quality, dry running, rotary vane pumps, designed to run continuously while the glue cures. They are fitted to powder-coated, tubular steel carrying frames and are rated to match the size of the bags; the bigger the bag, the faster the pump will remove the air to prevent pre-curing.

Each kit comes with a hose assembly fitted with spring guards and quick release, valved couplings, and an aluminium through the bag with a quick release, valved plug making it easy to isolate a bag when setting up a second bag for multi-bag pressing.

THE PORTABLE VACUUM PRESS RANGE

STANDARD AIRPRESS

This is the kit for anyone who only needs a 1,900 x 1,350mm vinyl bag. It has a 4m³/hr vacuum pump on a tubular steel carrying frame and everything

you need to run that bag – perfect for woodworking enthusiasts, box makers and musical instrument makers.

PROFESSIONAL AIRPRESS

Matching a faster 8m³/hr vacuum pump with the larger 2,600 x 1,350mm vinyl bag, this press is ideal for flat panel work and is fitted with two vacuum ports to run up to two vacuum bags at the same time.

PROPLUS

The ProPlus is identical to the Professional AirPress except that it comes with a 2,600 x 1,350mm, 600micron thick, seamless polyurethane bag. It is the most popular press in the range and perfect for both flat and shaped work. If your budget will stretch to the ProPlus it's the recommended choice of the mid-range presses for professional furniture makers.

INDUSTRIAL AIRPRESS

Fitted with a 16m³/hr vacuum pump on a tubular steel frame on castors and a four-port manifold to run up to four bags at the same time for faster productivity, and with a 3,200 x 1,350mm polyurethane bag, it is not surprising that this is fast becoming a best-seller with its ability to evacuate the biggest bags in the shortest time to prevent pre-curing of the glue.

RIGHT The new 1,800 x 1,000mm Benchtop Press

ADDITIONAL PRODUCTS

AirPress does not just develop portable vacuum bag systems, it also designs and manufactures the BenchPress range of vacuum membrane presses for easy laminating flat and curved panels, silicone heater mats for accelerating the curing time, vacuum chucks for bowl and platter turning, the VacPot vacuum clamping system and in addition supplies handheld glue spreaders and veneering and laminating adhesives.

With the exception of the glues and glue spreaders, AirPress designs and assembles all its products in-house, with a focus on quality and attention to detail. AirPress is the best-selling vacuum press brand in the UK and also sells its products around the world.

Service is also a key focus for the business, and with a background as a furniture designer and maker, MD Peter Hoggard is always at the end of a phone to offer advice and tips on vacuum veneering and laminating.

You can view all of the AirPress products on its website: airpress.co.uk



The BenchPress vacuum membrane press

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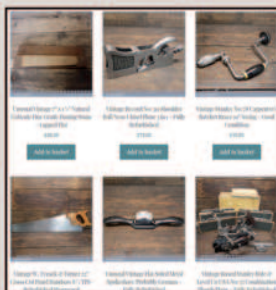
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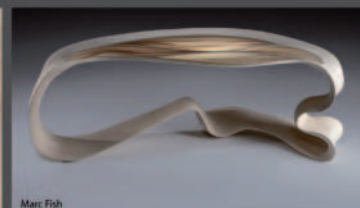
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WHEN PRACTICE BECOMES FORM

**A NEW EXHIBITION AT THE JAPAN SOCIETY
IN NEW YORK CELEBRATES THE SPIRIT
OF JAPANESE CARPENTRY**



As its first exhibition upon reopening to the public, the Japan Society in New York is presenting *When Practice Becomes Form: Carpentry Tools from Japan*. Opening on the 10th anniversary of the 2011 Great East Japan Earthquake, the exhibition celebrates the resilient spirit of Japanese architecture and craftsmanship through woodworking tools, architectural patterns and models. Featuring a variety of hand tools and wooden models reflecting joinery techniques that have been used for hundreds of years to build Japan's wooden architectural masterpieces (from temples and shrines to bridges), the exhibition unpacks the intangible qualities of craftsmanship, such as consummate experience, expertise and the honed skills of master carpenters in Japanese architecture.

A diverse array of tools, including planes, chisels and saws, have played an important role in the development of architecture in Japan, and this philosophy extends to Japan's cultural heritage today. Integral to the processes of master carpenters (*tōryō*) is their extensive knowledge of the local environment and of wood as a material. Using natural resources and learning from their predecessors' practices, they construct buildings using a refined methodology. Their philosophy of sustainability – for example, joinery can be restored or repaired as needed by future craftspeople – has been handed down over generations.

The site-specific exhibition design, which was conceived by the esteemed architect Sou Fujimoto in collaboration with Brooklyn-based Popular Architecture, introduces major themes from the exhibition and is in dialogue with the gallery's spaces, highlighting an enduring connection between traditional Japanese wooden construction and modern architecture.

You can see some of the exhibits, a video preview and the digital exhibition catalogue at: japansociety.org



PHOTOGRAPHS BY NAHO KUBOTA, COURTESY OF THE JAPAN SOCIETY



TURNED BUN FEET

PROFESSIONAL WOODTURNER
RICHARD FINDLEY TURNS AND
FINISHES A BATCH OF BUN FEET

Bun feet are low, broad feet found on various types of furniture throughout history. I'm not entirely sure at what point a bun foot becomes a leg, but I suppose it would be when the height greatly exceeds the diameter. For the past five years or so I have been making bun feet for Sarah Beech (sarahbeechottomans.com), who makes bespoke, upholstered ottomans which all sit on my bun feet, with the option of a mahogany or walnut stain, or a natural lacquered finish. This particular order was for a set of each.



PHOTOGRAPHS BY RICHARD FINDLEY, UNLESS OTHERWISE STATED

1 Preparing the timber for the bun feet 2 The octagons ready to turn 3 Checking the diameter with callipers 4 The story board in use

TIMBER PREP

As far as I am aware, there is no hard and fast rule about the grain direction of a bun foot. If it is supposed to look like a continuation of a taller vertical section then the grain needs to continue along it, but as a stand-alone detail, the grain direction is usually a choice of ease or economy. These buns are 95mm in diameter and 45mm thick, so it makes sense to have them cross-grain, using ex50mm timber, otherwise I would need to laminate layers of beech to achieve the 95mm.

I use lightly steamed beech for these bun feet, ripping 100mm-wide strips from a board and planing down to the required 45mm thickness. I then return to my circular saw bench and cross-cut them to 100mm square, before removing their corners and producing a rough octagon. I could use my bandsaw to cut them into discs, but octagons are quicker, easier and just as effective for production turning purposes.

TURNING

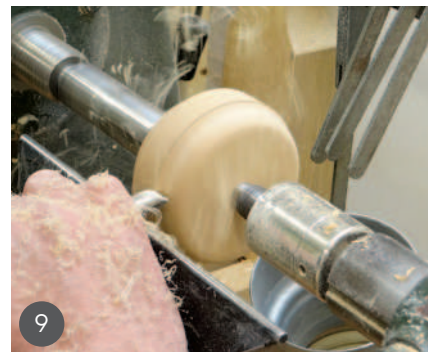
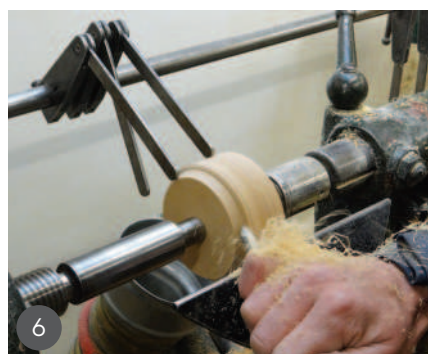
Work holding is the first decision to make once the timber is ready to turn. The bun feet are fixed to the ottomans with M8 stud screws, so they naturally need a hole in their top, which I

can use to my advantage at a couple of points during the making process. The easiest way to turn these is between centres, although a screw chuck would also be a good option if the drive mark in the base is a problem – it generally isn't on legs and feet.

These bun feet are a relatively simple design, with a central band, a half cove at the top and a half bead at the base. With the octagonal blank held between centres, I turn it into a disc with my spindle gouge and use callipers to achieve the maximum diameter.

To mark out the positions of the details consistently I use a story board, which is simply a piece of thin MDF with half of the design drawn on it, along with notes of any useful information and sizes. I use these on any project where I need to turn multiple items. On the front edge of the board are notches that allow me to rest my pencil in place and mark the position lines on to the spinning work. This makes accurate marking very simple and repeatable. I have found that the key to successful copy turning is to get the details in the correct place along a spindle, and this method makes that possible.

Using the callipers again with my spindle gouge, I turn the details carefully, making sure they match the diameters I have



5 Setting the duplicating fingers 6 Turning the cove 7 The duplicating finger drops as I reach the required diameter
8 Turning the bead 9 The negative rake scraper leaves a crisp corner

marked on my story board. Once the first is turned correctly I set up my duplicating fingers, which speed up production by removing the need to measure these diameters again.

The fingers are mounted on a steel bar behind my lathe and are set to the diameters of the first item. Thereafter I only need to rest the fingers on to the spinning work, where they sit until the desired diameter is reached and then they simply drop down, letting me know that I am where I need to be without picking up three different sets of callipers. It is amazing how much time this saves on a production run, even when there are only three diameters to measure, as there are here. If you don't have duplicating fingers then you can use three sets of callipers, or even a single set and adjust them to each diameter as needed.

GRAIN DIRECTION

The grain direction means that the way I turn the shapes is different to what you might expect. On normal spindle work, where the grain runs along the bed of the lathe, a bead or a cove is cut from the top, down to the bottom of the shape, cutting with the grain to produce the cleanest surface. When the wood is cross-grain as it is here, cutting from top to bottom would mean cutting directly into the end-grain fibres of the wood, which is, at best, hard work and at worst likely to tear the grain and leave a very poor surface. The answer is to use the wing of the tool in something of a shearing cut, and work apparently uphill, which seems to be unnatural or counter-intuitive but is, in fact, correct and will be working with the grain to produce the cleanest possible cut.

The half cove sweeps up to the central band. Each cut develops the curve a little more until the shape and diameter visually work together and the duplicating finger drops to let me know the desired diameter has been reached and I can move on to the half bead.

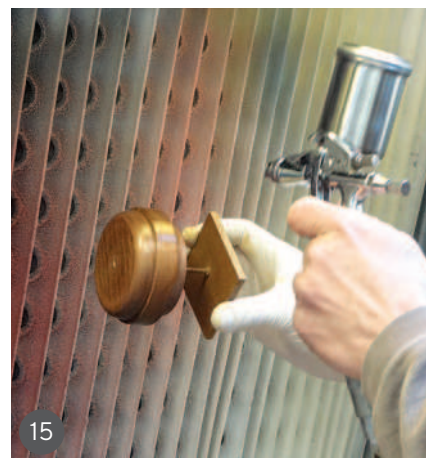
The bead is stepped down from the central band, so I first cut the correct diameter, before rolling the bead, as with the cove, using the wing of the gouge and drawing the shape from the base of the foot around to the central band. To achieve a crisp and square corner here I use a negative rake scraper to refine it, as it is very difficult to do with the spindle gouge.

Satisfied with the shape, I can sand with 180- and 240-grit abrasive before using a fine red abrasive pad to leave a slightly burnished surface.

STAINING

Much of my work goes out unfinished, ready for the customer to finish as necessary. I do offer a finishing service for my work though and can stain to match any colour for restoration work, or more general colours, as here where I use proprietary spirit stains in 'plum mahogany' and 'walnut' before applying either oil or spray lacquer. In this case, I spray waterborne lacquer.

The easiest way to stain turned work is on the lathe. I have found that, as long as the stain isn't too wet when it is applied, it goes on very evenly and very quickly. I first use a pad of paper towel to apply stain to the majority of the foot. I dip it in the stain then dab it on another clean bit of paper towel to remove



10 Sanding **11** Applying stain with a pad of paper towel **12** Using a brush to get into the details **13** The first coat of lacquer going down **14** The lighter areas on the bun feet **15** Adding the solvent-based stain to the lighter areas

excess stain, then simply wipe it over the slowly rotating work. I run the lathe at around 320rpm here to give me good control of the stain. The corner that I had crisply cut with my scraper is difficult to reach with the paper pad, so I use a fine brush here. As I did for the pad of paper towel, I dip it into the stain, then dab it on another piece of towel before applying it to the work. The feet are then set aside to dry before I lacquer them.

SPRAY LACQUER

In the past I have done a lot of spray finishing; one of my biggest customers early on was a company that specialised in 'Gothic', so everything I made for them was sprayed with gloss black waterborne lacquer. Because of this, I set myself up with a small spray booth and the necessary airline etc, and although I don't do anywhere near the amount of spraying that I used to, I enjoy dusting off the spray gun every once in a while.

The hole for the stud screw in the top of the bun feet allows me to use my typically low-tech holding system for spraying, which involves a long screw and a small square of thin MDF. The screw gives good clearance and access to spray, and the square of MDF gives me something to hold as I spray and allows it to freely stand while the lacquer cures.

PROBLEM SOLVING

An issue presented itself when I first made these bun feet. Because end-grain absorbs the stain more than the side-grain, the sides of the bun feet are a little lighter in colour than the

rest of them. This is completely natural and is not something that concerns most customers, but in this case, my customer didn't like it and asked if I could do anything to even the colour over the whole foot. I spoke to my finishes supplier and, after a little head-scratching, they came up with a suggestion which eventually solved the problem and made my customer happy – a happy customer is always the aim after all!

After the first coat of waterborne lacquer has dried, I use my cheap little stainless steel touch-up gun (sadly no longer available) loaded with solvent-based stain of the same colour as the base stain to literally touch up the light coloured areas. I keep this little gun for staining and my main gun for lacquer to avoid any possible contamination. The little gun is perfect here as it sprays a very controllable and easily targeted spray pattern and very quickly 'airbrushes' the light areas. The solvent-based stain sits on top of the first coat of waterborne lacquer and slightly melts it, meaning it keys to it and, after leaving it to fully cure, I can simply apply another coat of lacquer over the top.

On a mission to make the colour as even as possible, I add a few drops of water-based stain to the second coat of lacquer, which doesn't add a huge amount of additional colour but produces what I call a 'blush lacquer' which is particularly appropriate in the mahogany colour as it is a slightly reddish shade when sprayed on white paper. I use this technique with restoration work to add depth or a hint of extra colour to a piece, and it just helps to even the colour out a little on these bun feet.



16 Cutting back with a red abrasive pad
17 Adding the stud screws 18 The finished bun feet
19 One of the upholstered ottomans fitted with the bun feet

FINISHING OFF

Once the coat of 'blush lacquer' is fully dry I like to gently cut it back before adding the third and final coat of straight lacquer. I take the feet back to the lathe, removing the low-tech spraying aid, and re-mount each foot between centres. I use a red abrasive pad (600 grit) to very lightly cut back and smooth out the lacquer. At 500rpm this takes seconds on each foot. I like the abrasive pad rather than abrasive paper as its softness and flexibility seems less liable to cut through the lacquer, which would be a real pain at this point!

With the lacquer on the bun feet smoothed out, I take them back to the booth and apply the third and final coat of lacquer.

The last job is to add the M8 stud screws. These screws are the best I've found, easily driven in with a Torx/star-shaped driver bit. The bun feet are then packed up and sent out to my customer to fit to her upholstered ottomans.

PHOTOGRAPH BY SARAH BEECH OTTOMANS

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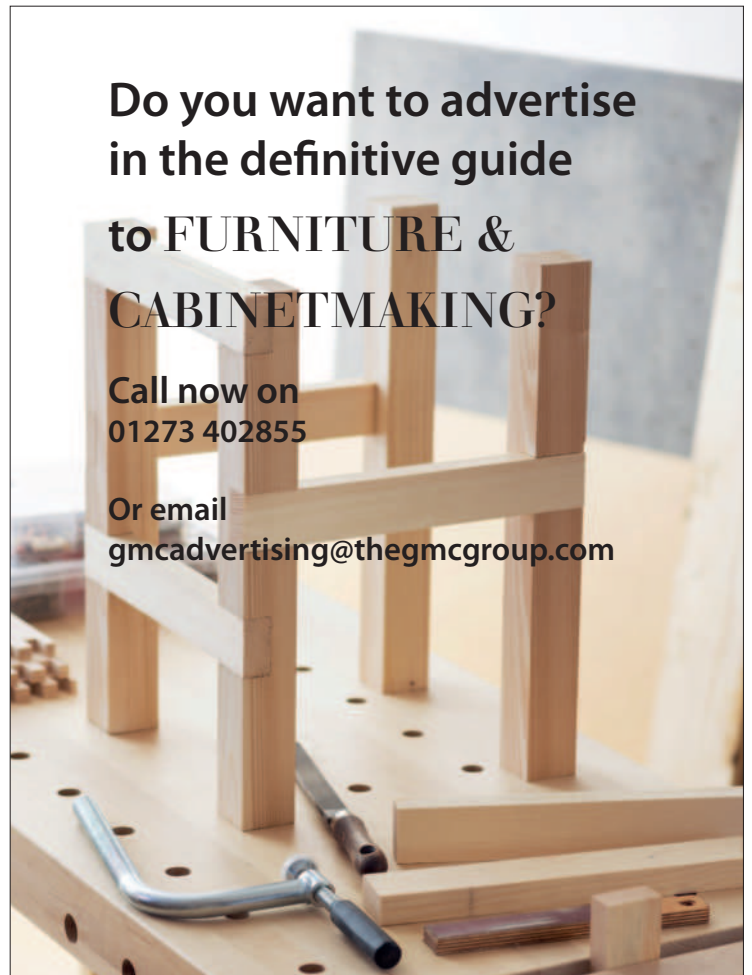
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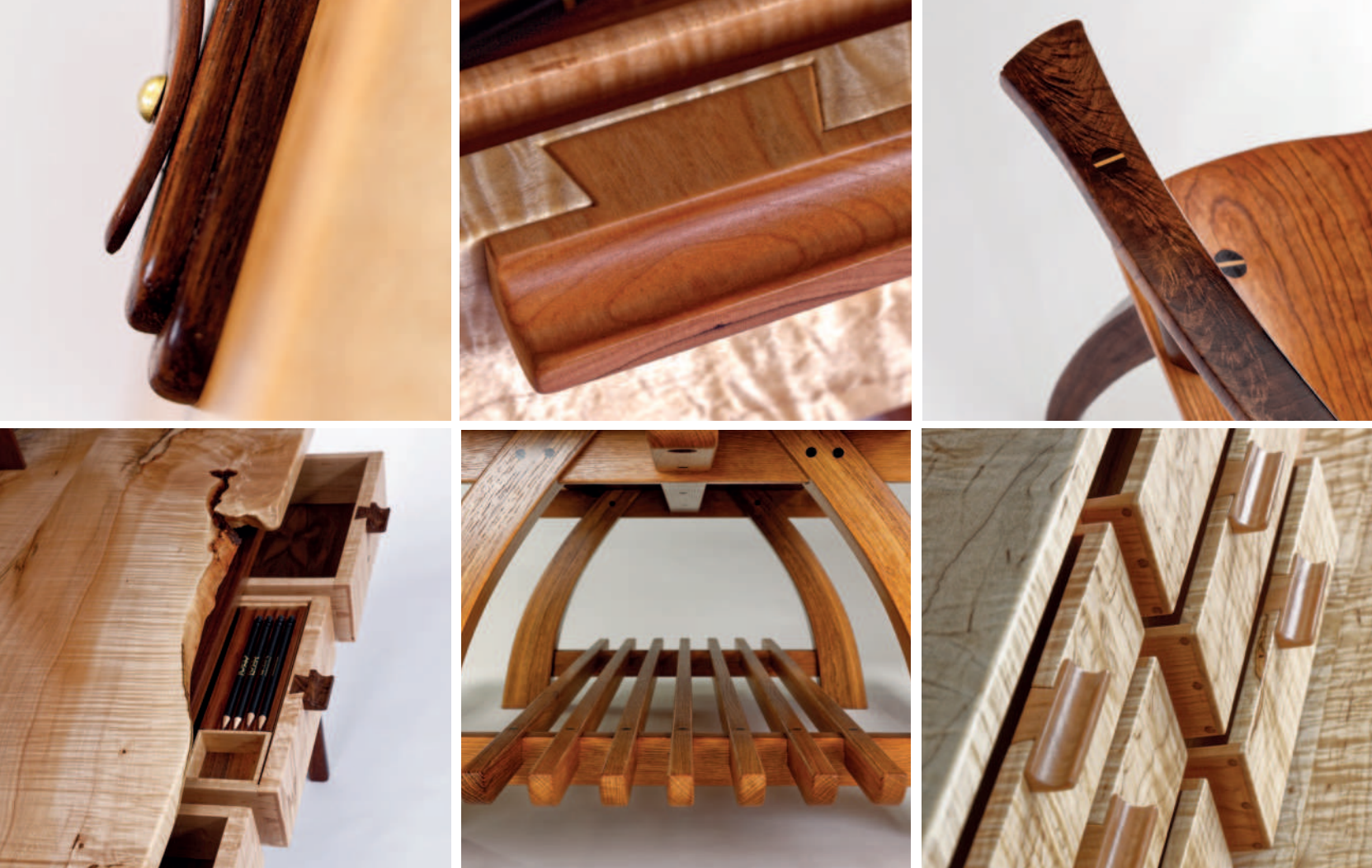
PENNSYLVANIA PROMISE

HOW DO A MIDDLE SCHOOL MATHS TEACHER AND A PUNK ROCKER END UP RUNNING A PENNSYLVANIA WOODWORKING AND TEACHING BUSINESS? MEET **LARISSA HUFF** AND **ROB SPIECE** OF LOHR WOODWORKING STUDIO

Inspired by a crafty childhood and a cabinetmaker grandfather, when middle school maths teacher Larissa Huff moved to a new town in her early 20s, she applied to a Craigslist ad for an apprenticeship in furniture making. 'It seems to be the ideal fusion of craft, art, practicality and maths that I didn't know I was looking for,' she tells *F&C*. 'The job sounded like nothing I had ever heard of and I applied on a whim.' Jeff Lohr, founder of Lohr Studios, hired her without any previous experience, and taught her everything 'from the ground up'.

Larissa says: 'I learned by helping him make his custom furniture designs and by assisting in classes. First, I fetched tools, cleaned up and sanded things. When I got my footing in the shop, I was given more responsibility, cutting joinery, prepping parts and machine maintenance. We don't have a formal apprenticeship programme so, as my skills grew, my responsibilities grew until one day I was left alone in the shop to make furniture pieces.'

Rob started his working life playing in a band in the thriving punk rock scene of the Lehigh Valley in Pennsylvania, and studied Film & Media Arts at Philadelphia's Temple University. 'I showed my work in several small film festivals and enjoyed experimental and documentary filmmaking, but I never quite found my niche there,' he says. 'It was only after stripping and refinishing my guitars when the spark of woodworking jumped up at me. After that, I actively looked for a situation that would put me in the wood shop.' He replied to an ad from Lohr Studios looking for an apprentice with a background in filmmaking. 'Jeff loves to teach, so it was a great place to find yourself as an aspiring woodworker who knew nothing about the craft,' says Rob. 'I was lucky in that I learned not only techniques that are fundamentally sound, but also how to realistically apply them in making a living. Jeff was always eager to help and to provide opportunities. After spending about three years developing, I started showing my work in 2009.'



JEFF LOHR'S VISION

Jeffery Lohr studied industrial arts in college and spent 15 years as a high school woodshop teacher in Norristown, Pennsylvania, before leaving to make his own furniture designs and open his studio to students. In the 1980s he and his wife Linda bought a dilapidated 13-acre farm in Schwenksville, Montgomery County. They spent the next decade converting the property, restoring a condemned barn into the first workshop where Jeff began selling his custom pieces in the early 1990s. The woodworking school opened in 2001.

Jeff refers to his style as 'refined Arts and Crafts', and takes inspiration from Charles Rennie Mackintosh, Greene & Greene and Frank Lloyd Wright. 'He added in a healthy dose of raw Pennsylvania materials and his style was born,' says Rob. 'He had a lot of success through the 1990s making furniture for clients all over the world, and in the mid-noughties he shifted focus into live-edge work and unique, one-off commissions.' Larissa adds: 'Over many years Jeff built our current shop from salvaged materials, with the goal in mind to have a studio and school under one roof. He has spent his life and career sharing his skills and knowledge with 20-plus apprentices and over 2,000 students.'

Jeff's health has been in decline for some years, so he taught and trained up Larissa and Rob to take over the business when he retired at the end of 2016. 'Jeff was looking for a means of retirement – most studio furniture makers don't have a big pension waiting at the end of their career,' says Rob. 'Larissa and I embraced his vision of making high quality furniture and

teaching people how to do it, so he felt comfortable leaving the business to us. In 2017, he officially retired and now spends his time on projects that excite him along with adding to the infrastructure of the farm. We rent the shop and studio space, which gives him a decent retirement income.' Larissa says: 'Rob and I were incredibly lucky to be taught, trained and welcomed as the protégés that would assume the business when he retired. It's an incredible gift to be passed a functional small business with the freedom to design and make my own ideas.'

The workshop is in a big red barn-style building and is designed to function as a furniture-making studio that can be easily converted to a school setting. Larissa says: 'We have 10 workbenches, four tablesaws, four jointers, three planers, two dust-collection systems, bandsaws, lathes, handheld power tools and an assortment of hand tools. We have racks to store our rough lumber inside and a finishing room with an exhaust fan that allows us to spray finishes. One of the highlights is the dozens of chickens that wander the yard and the horses that graze the pasture outside the big windows. I have been working in this shop since 2012 and I plan to stay as long as possible.'

IN THE WORKSHOP

'It's a pretty large space with a lot of natural light,' adds Rob. 'We have ample room for material storage and generally keep a good stock of the species we use in our work. I started working at this shop in 2006, so I've been here a while and I've got no plans to go elsewhere.' The workshop is surrounded by forests, so the

pair love working with local hardwoods such as walnut, cherry, maple, oak, ash, sycamore, birch and more. 'Lucky for us, there are three sawmills within a 15-minute drive of the shop,' says Rob. 'If we need something more specific, we have three other larger mills, also in Pennsylvania, that will have precisely what we're after. We also have a bandsaw mill and Alaskan chainsaw mill at the shop to produce material straight from the log. Though, with our teaching schedule and commission work, we don't get to run the sawmill as much as we'd like.'

Rob and Larissa work on designs together, starting out with a technique, an idea, a sketch, a piece of wood or a problem that needs solving. 'Most of the work that is done at Lohr Woodworking is a collaborative process between Rob and me, so our respective design processes join forces,' says Larissa. 'Typically, we sit down together and make a few sketches, throwing out our input or arguing why something will not look right. Often, we agree upon a rough concept to get started and embrace a lot of improvisation as we work through the build together.'

'We always talk it through to see what our goals and ambitions are for a particular piece and whether we think someone would want to pay money for it,' Rob continues. 'When it comes time to make a piece, we make a scale model or mock-up in cardboard and scraps. Most pieces take us a month or two to finish, so it's helpful to have a really firm idea of what we're making and that we think it will be a success. We're also developing a pretty fun collection of tiny models.'

He adds: 'We also spend time working on smaller projects, usually boxes, that are low stakes. It's much easier to step out of your comfort zone and try a new technique on a smaller footprint. Sometimes that work informs larger and more complex pieces.' When it comes to working they have different approaches, with Larissa loving the process while Rob is keen to reach a swift finish. He says: 'My favourite moment of any piece is when it's finished and I can stand back and look at it. I chase that feeling, so I try to make things with the most efficient tool for any given job. That doesn't always mean it's a power tool. Often times, hand tools get you to the place you want to go faster. Over the past few years, I've really gotten into chairmaking. The tools I love the most are the travishers and curve-soled planes that fair a seat shape to perfection. I'm still learning how they work. I find that being in the "still learning" phase makes me love any given task. Once you master something it lacks the mystery and excitement that comes from chasing that perfection. That's not to say I've mastered anything – I think I've just determined what "good enough" is. It's just one reason that collaborating with Larissa pays off. She loves diving into those little details that make a piece special.'

'I like to use machines such as the tablesaw, jointer and planer to get parts as far along as I can before I switch to hand tools for fine tuning and finishing touches,' says Larissa. 'For me, machines are much faster and more accurate than my hand tool work, so using them is a more efficient use of time. I do love the shift to hand tools toward the end of my process because thoughtful bench work to fit joints and add hand-shaped details is just so satisfying, and quieter! I like the making process more than getting to the finish line. I find immense excitement in successfully completing each stage, whether it's making a jig that worked as planned, or

having a glue-up go well. I love each step along the way.'

She adds: 'My feelings on finishes are always evolving as I try new products and combinations. Right now, my finishing preferences vary depending on the use of the pieces and the wood type. For woods with darker, richer colour tones, I prefer boiled linseed oil topped with a film finish. The BLO brings out all the browns, golds, reds and purples of a darker wood while the film finish protects it from everyday use. For lighter, blonder wood tones, I skip the BLO because it induces a yellowish tone. If the piece will be used heavily, like a dining table, I will use a durable finish like polyurethane or Waterlox. If it is something that won't see much contact with liquids and human touch, lacquer is my go-to. It is so easy to spray, it dries quickly, and the layers melt together into a nice smooth final coat. Recently we've been dabbling in Osmo, which I think is quickly becoming a personal favourite.'

'Our finishing process always starts with choosing materials for their natural colour and grain. We rarely alter the natural colour of the wood,' says Rob. 'We count oiling day as a highlight of the process – we may even treat it a little like a religious sacrament. We clean up, make sure everything is just so, then get to see the piece we've been working on for so long jump to life. After oil, we use a film finish on top. The best part about our finishes is not the way the surface looks, but how it feels. We finish by rubbing out with 0000 steel wool and mineral oil, and following up with rottenstone on closed grain woods.'

LET THE WOOD DO THE TALKING

Is there an overarching ethos behind the work of Lohr Studios? 'We are people that make things to the best of our ability. I think our ethos is in the philosophy of trying to live a productive life and have a career that we're proud of,' says Rob. 'We don't take ourselves very seriously, but we do believe in our work. The Arts and Crafts movement was a reaction against the industrialisation of the time. People were seeking to use their minds, bodies and souls in their work and express their joy through the things they made. That pretty much embodies what we're after. I think you can draw parallels to our current working world climate. So many people are tethered to a screen for 12 hours a day and don't get to produce something tangible. Part of the resurgence of craft is a big reaction against that.'

Larissa says: 'The ethos most overarching in my work is letting the wood do the talking and making things we are proud of. We select local materials with the natural colours we want to see in the finished piece – no dyes or stains. We use figured material for drawer fronts, table tops and panels so mother nature's masterpiece takes centre stage. We aim to create things that will bring people joy in their homes, while managing to support ourselves in the process.'

She takes inspiration from the natural beauty of the wood she works with as well as the functionality of the finished furniture. 'I want to make things that people live with and interact with as part of their daily lives, while also giving these trees a chance to be admired in a new form. My ideas are often born from admiring the works, in all different mediums, and techniques of other makers. I will likely always be inspired by Jeff's work and his work style since he was the one to teach me everything



I know about furniture. I appreciate the ethos of the Arts and Crafts movement, which focused on handcrafting things for the home with joy and pleasure instead of the thoughtlessness of the factory and machine-made products of the era.'

Other furniture makers – including Jeff of course – have also inspired Rob. 'Local makers Ray Kelso and Brad Smith not only inspire us with their work, but they're also happy to give their sage advice when called upon,' he says. 'Jeff always said: "Originality is directly proportional to the obscurity of your sources." I'm not sure where that quote comes from, but it's helpful to do a really deep dive in any of the styles you're interested in and the ones you aren't. Our No 112 Chest of Drawers came out of researching the Danish Modern style. After tracing that back to Napoleon, the piece ended up as a bit of an homage to Biedermeier and Bauhaus without really being either style. We're also just about a 20-minute drive away from the Wharton Esherick Museum. If we're ever lacking inspiration, a trip there solves that immediately.'

FACING CHALLENGES

As a woman in the workshop, Larissa finds herself in a minority – but in spite of the challenges, she is grateful to have been surrounded by men who treat her as an equal. 'Most of the obstacles I have faced have been mild,' she says. 'People assume I know less about tools or materials than my male counterparts, folks will take things out of my hands because they think they're too heavy for me to manage, or they take me or my work less seriously – things I make or do are often referred to as "cute". It's most upsetting when these folks are students who have come to our shop to learn.'

'The biggest advantage is, without a doubt, the community that comes with being a woman in the furniture-making field. In recent years, furniture makers have formed a strong community across the world and online that has brought attention to the incredible work being done by women and non-binary folks. The people I have been lucky to meet and work with have been incredibly supportive, excited and active to create a more balanced representation in the field. It is truly remarkable the work being made, shop spaces being opened and skills being taught to encourage women to be successful in the furniture-making world. Here in the US, Nancy Hiller, Laura Mays, Sarah Marriage of A Workshop of our Own, Megan Fitzpatrick, Leslie Webb, Katie Thompson of Women of Woodworking and countless others are opening doors and spaces for women in a way we have never seen before. Interacting with these women keeps me motivated and confident to keep making furniture.'

The Covid-19 pandemic and lockdowns struck a blow to the business, which had no commission work in 2020 and was forced to postpone several classes when it wasn't safe for people to gather indoors. 'At the outset it was terrifying,' Rob admits. 'As most courses are sold out months in advance, sending out many refunds would bleed us dry pretty quickly. The good news is that most everyone was fine with postponing and the added time gave us an opportunity to design new courses and plan for the future. The positives ended up far outweighing the negatives – for our small business, at least. As people found themselves locked down at home, many determined that they needed a hobby. Here at the

outset of 2021, our courses are now sold out through 2022.'

He adds: 'Like many other artists we're showing our work virtually through juried online craft shows. While it's quite different, we did see success that paralleled an in-person show. Not to mention it was a big fringe benefit to not have to load up all of our furniture and drive it to a real place just to pack it up and drive it back a few days later.' Larissa says: 'I am sure the impact will be felt for the next year or two as we establish a feeling of safety and stability again, I don't take for granted that I see a "normal" for us on the horizon.'

PROJECTS PAST AND PRESENT

The studio produces both commissioned and speculative pieces, although the business relies heavily on commissions, and both Rob and Larissa struggle to choose which they prefer working on. 'I love the lack of constraints that comes with making a speculative piece of work, but there is something so wonderful about working with a person or family to create a piece unique for their space,' says Larissa. 'I suppose in the end, I prefer to make speculative pieces because there is no wrong answer. It provides an open opportunity to try new techniques or design elements.'

'We love making spec pieces because we simply do whatever we want to do,' agrees Rob. 'We certainly aim to make it sale-able, but there are no constraints put upon us. The flip side of that coin is that it always seems to be 2in too long or not big enough for a potential buyer. No big deal, though, because we also like keeping them. The best work is when a customer commissions a piece and they put their trust in us. We feel appreciated and the customer always gets a huge value transferred in the work. One customer wanted an armchair and he simply said he wanted it to feel like a sports car. I'm not sure Larissa and I know what that feels like, but it was a fun direction and he got a chair that he loved.'

Larissa's favourite project she has completed so far is a small jewellery cabinet she made in 2018. She explains: 'It is not my most technically impressive piece, but the sentimental value gives it a special place. I designed it in honour of my late grandmother and the jewellery she received from my grandfather's travels around the globe as a merchant marine – he later became a cabinetmaker. I used figured maple that was cut my first time milling a log during my first weeks as an apprentice. It also included joinery, a collection of tiny drawers lined with fabric, and other details I had never attempted before, so it was a personal project in every way.'

'My favourite projects are always the most recent ones,' says Rob. 'I really did enjoy the process and the finished result of the No 112 Chest of Drawers. There were a lot of dovetails to cut, many challenges in matching the veneers over a large surface and a lot of drawers to fit. Seeing it all come together and work smoothly in form and function was satisfying.'

Larissa's most challenging project has been a half-moon-shaped bar commissioned to fit in a customer's living room. 'The front face was bent into a semi-circle. We veneered the shell, bent solid wood framework to create a look of panels and built shelving into the interior. I had only worked with small-scale curves and bends before then, so problem-solving our way



through such a large, curved structure required a lot of trial and error and learning. It was a fun and intimidating challenge but, luckily, it was also a successful one.'

For Rob the biggest challenge was the Cosgriff Arm Chair. 'We were just a few months out of a course on Windsor chairmaking,' he recalls. 'The course was physically and mentally exhausting, but equally inspiring. I think we bit off a little more than we could chew with that particular chair, since our inspiration levels were a bit higher than our chairmaking skills. It did turn out nicely in the end, though.'

Upcoming projects include a quartersawn oak community conference table for a Pennsylvania library, with a trestle base that has two ends that open outward like a book, and a cherry jewellery cabinet with a nod to Krenov. Looking forward, Larissa is aiming towards a more refined design style, while Rob wants to build up a craft community. Larissa says: 'I hope it is already clear to those viewing our Lohr Woodworking creations that each piece is made by the same hands, but I hope going into the future that my style becomes undoubtedly identifiable as my own.'

'We're very much still finding ourselves as furniture makers and designers,' agrees Rob. 'We'll continue to challenge ourselves at every phase and see where we can take the work. Things have been moving in a positive direction, so we'll

stay on this train while it'll have us. We'd also like to build the craft community around us. We're lucky to have a lot of talented furniture makers and organisations centred around craft nearby. We love making friends and seeing what we can accomplish together.'

So are there any top tips they would like to pass on to *F&C* readers? 'I have recently been practising some hot pipe bending to create organic twists and curls from solid wood to integrate as pulls on furniture and boxes,' says Larissa. 'It's pretty simple to soak thin strips of wood in warm water for an hour, mount a pipe to something stable, heat it with a propane torch and gently bend the strips around the pipe. It is a technique often used in instrument-making, but I've found all kinds of fun ways to apply it in furniture-making.'

'The dry heat of a wood shop, along with the moisture wicking properties of sawdust, do a lot of damage to a woodworkers' hands in the wintertime,' says Rob. 'Get yourself a paraffin wax bath and dip those hands several times throughout the winter. You deserve it.'

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'We'll continue to challenge ourselves at every phase and see where we can take the work. Things have been moving in a positive direction, so we'll stay on this train while it'll have us.'

UNDER THE HAMMER – THE HOME OFFICE

BONHAMS' 'WORK FROM HOME' AUCTION FEATURED EVERYTHING YOU NEED TO CREATE A STYLISH OFFICE. HERE WE LOOK AT THE TOP-PRICED FURNITURE LOTS FROM THE LOS ANGELES SALE



BOTTOM LEFT:

LOT 4

US\$2,040 (£1,469)

Ebonised wood and glass
coffee table made by
Holly Hunt

LEFT:

LOT 9

US\$1,530 (£1,102)

One of a pair of painted
wood bookcase cabinets

BELOW:

LOT 3

US\$1,275 (£918)

One of a pair of Jorge
Zalsupin faux black
leather and chromed
metal T-invertido chairs



LOT 34
US\$573 (£413)

A Louis XVI mahogany cylinder bureau



LOT 46
US\$828 (£596)

An English walnut and brass travelling desk on stand with tooled leather writing surface



◀ **LOT 33**
US\$280 (£202)

A George II walnut telescopic lectern

▶ **LOT 37**
US\$637 (£459)

A 19th-century Neoclassical gilt bronze-mounted, part-ebonised mahogany armchair







PHOTOGRAPHS BY ALAN HOLTHAM

ASH AND PURPLEHEART SCREEN

ALAN HOLTHAM MAKES A STYLISH ROOM DIVIDER FROM INTERWOVEN TIMBERS

I must confess that the initial starting point for the design of this interwoven screen was not my own, but adapted from a project I saw in a woodworking magazine many years ago. Since then I have been mulling over various permutations of the original design in my head, hoping to get round to making it one day. With the original picture now long gone and my memory of it failing fast, this is my interpretation finally come to fruition.

BUILDING THE FRAMES

1 Speculative projects like this are a great way to use up material that has been lying around the workshop for some time, and in this case I found a couple of very dirty looking bits of purpleheart and some equally scrappy boards of 50mm ash.

2 A few passes over the planer quickly revealed some beautiful timber beneath the grime, the purpleheart initially being a fairly pale colour, but deepening to the characteristic rich purple after a few days' exposure to light and air.

3 The frame sections are relatively small, so the long lengths require some careful machining to finish them straight when you start with such twisted stock. In this case, the secret is to cut everything as near to finished length as possible to minimise the amount of straightening required.

4 Lay out the components for each frame on the bench, cut them to final length with a mitre saw to ensure that the ends are perfectly square and mark the position of the joints.



5 The easiest way to joint small components is to use dowels. For these sections I used a 6mm jig which ensures perfect alignment.

6 With the outer frame dry-jointed, mark the position of the centre uprights and again drill the holes in the frame using the dowelling jig.

7 Drilling the matching holes in the end of the very small section uprights is a

bit trickier. I got round it and found the centre point by drawing the diagonals and then simply drilling the hole by eye using a 6mm spur point bit to ensure it started accurately.

8 Before the frame can be assembled you need to form the groove in the two outer uprights to take the slats. You can either then use a router with the side fence, or for better accuracy with these thin sections, fit a 3mm slotting cutter in

the router mounted underneath a table. Make the slot deeper on one side of the frame than the other to make it easier to fit the slats later.

9 Now the frame can be assembled, starting with the centre uprights and then gluing the dowels for the main frame.

10 The beauty of accurate dowelling is that the joints become really tight as the dowel swells up with the glue, but



nevertheless I always apply some light clamping to hold it together while it sets.

MAKING THE SLATS

11 Because the ash boards were of such poor quality, I cut them to length straight away and removed the worst of the splits and knots to leave much smaller pieces of sound timber.

12 Plane the surface of these carefully, with due regard to the grain direction to

ensure a tear-free finish.

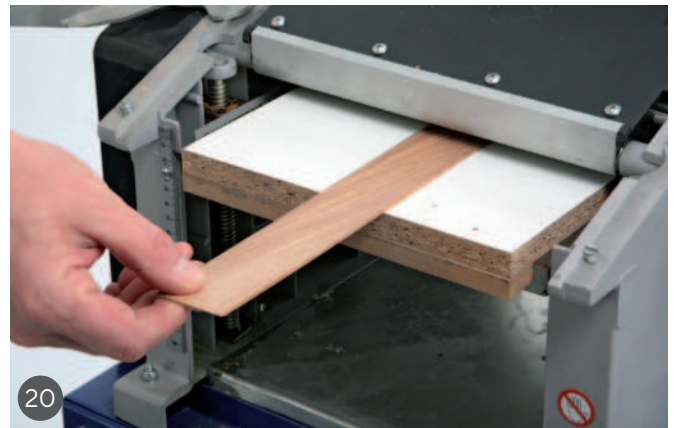
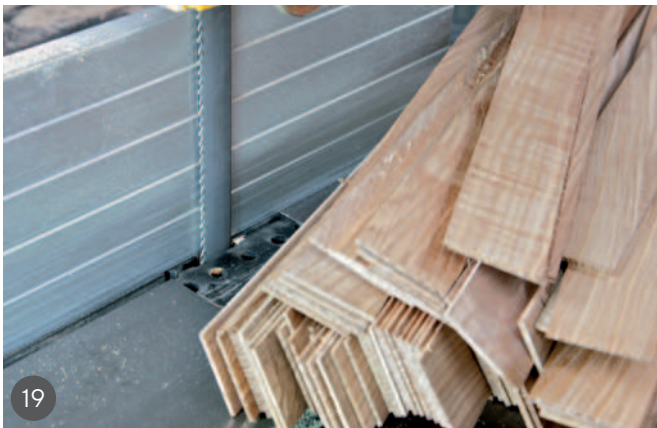
13 Then thickness them down to the required size, in this case 40mm, again taking care with the grain orientation.

14 Each slat needs to be finished to precisely 2.5mm, but very few thicknessers will accommodate such thin material, the minimum normally being around 6mm.

15 This problem is easily overcome

by fitting a false table on top of the thickening bed; an offcut of smooth material like melamine-faced chipboard is perfect.

16 Screw a batten across the end of the false table to locate it in place and to stop it moving through the thicknesser. It is essential that the thin material slides as easily as possible on this table, so polish the surface to a super-slippery finish with a lubricating wax.



17 Plane the edge of each ash blank dead square to the face, and then set the bandsaw fence to take a cut of 3mm. Rip a slat off each edge of the blank.

18 Keep re-planing the edges after each cut: that way, you are always working with a planed finish against the bandsaw fence.

19 Provided the blade is sharp, you should have no problem ripping to this degree of accuracy. I use a $\frac{3}{4}$ in x 6 tpi bi-metal blade which maintains its edge far longer than steel blades.

20 Now you can gently feed each slat through the thicknesser, taking only a very light cut and re-polishing the false table if they struggle to feed at any stage.

21 It is inevitable that there will be a few failures, particularly at the ends of the cut if the grain is a bit short, so always cut some spares.

ASSEMBLY AND FINISH

22 Once the framework is firmly glued, apply whatever finish you want and then start weaving in the slats, feeding them into the deeper groove in the frame first, and then pulling them back into the shallower groove.

23 If you set out the framework correctly the slats should fill the panel perfectly, but if you do need to make any adjustments to get the final one to fit, take a fraction off several slats rather than taking a lot of material from just one.

24 Hinge the three panels together, I used two lay-on hinges per frame but with hindsight would have been better off fitting a third central hinge, rather than just relying on one top and bottom.



PUZZLE IT OUT

INTRICATE PUZZLES, SECRET COMPARTMENTS, HIDDEN MECHANISMS AND STUNNING VENEERS MAKE **CRAIG THIBODEAU'S** FURNITURE COMPLETELY UNIQUE

Originally an engineer who built furniture on the side, Craig was drawn into the world of mechanical and puzzle furniture when he showed a client YouTube videos of furniture made by 18th-century German cabinetmaker David Roentgen. Craig recalls: 'He decided he needed a small piece with some mechanical movement, but in the Art Deco style to match his other furniture. That piece, the Automaton Table, was very well received and the positive coverage it had in magazines and online altered the course of my furniture-making career. From that point forward my commission work gradually changed from more traditional furniture toward puzzle and mechanically moving furniture, to the point that now 100% of my work is focused on puzzle-oriented furniture and boxes.'

Craig often finds himself in the strange position of working on commission for clients who don't want to know exactly what their piece will become, so they can puzzle out its mysteries themselves. 'That makes the work much more challenging, as I am designing pieces without much client interaction or feedback,' he says. 'I've really no idea where the ideas come from. I have spent a lot of time looking at furniture, past and present, and that certainly influences what I build. I am a firm believer in seeing what others have done and being inspired by that work.'

Of making puzzle furniture, he says: 'It's a strange type of work but one that I find very satisfying, as each piece is radically different than previous ones and I tend to favour building only one of each thing rather than multiples. That does make it quite challenging as well though, as each piece functions differently and requires different internal mechanisms. I'm finding that as my experience level making this type of work grows, my desire to make the work more complex and technically difficult grows as well.'

His current big project is roughly based on a David Roentgen desk from around 1780, which Craig has altered to suit his work habits and to add a number of puzzles and mechanically automated moving components. 'When it's finished it will be

the most complex piece of puzzle furniture ever built,' he says. 'It's also mechanically complex in terms of moving components, but still nowhere near as complex as much of the furniture of the Roentgens. Even after watching those videos many times, I still have no idea how they made certain things happen mechanically.' He has been working on the desk for around 18 months and believes it still has a few more months' work in it.

EARLY LEARNING

Craig started making things at a young age, as both of his parents were creative and handy. 'My father built furniture and my mother did a variety of crafts, I worked with both of them off and on during childhood. I'm not sure I appreciated what I was learning at the time, but growing up in a household that regularly did creative things certainly influenced my future path somehow.' He adds: 'I'm not sure when I actually decided to start making furniture, but it grew gradually from a weekend hobby to a full-time career over a number of years.'

He is mainly self-taught, although he has taken several week-long marquetry courses with Paul Schürch and Patrick Edwards. 'Everything else comes from long hours in the shop and lots of trial and error,' says Craig.

He gave up engineering and became a full-time furniture maker once he had amassed more work than he could handle on evenings and weekends. 'It's not a career I would necessarily recommend though, as the hours are long and the abuse to the body builds up over time. There are far easier ways to make a living,' he says. 'I started by making sure there was enough work coming in to pay the bills before taking the plunge. I had no illusions about the romantic notions of what making furniture full time would mean – a financial struggle for many years paired with long hours in the shop. Something I don't think many makers take into account when deciding to build things for a living is where all the work is going to come from. Family and friends will only buy so many pieces, then you'll need real customers to keep paying the bills.'





SURFACE VENEER

Craig's award-winning veneers are works of art in themselves, and he has recently published a book with Taunton Press, *The Craft of Veneering*, aiming to spread the word about the craft to other makers. He says: 'It takes many years to get good at veneering, much like anything worth doing. The skills required to cut clean joints and glue flat panels take time to learn and the skills aren't the same as those employed in traditional solid woodworking. The more high-end veneering techniques like marquetry and parquetry take even longer to master, and they typically come after the background veneering skills are developed. Marquetry in particular can take many years to perfect, as much of the skill required in creating unique attractive marquetry comes from knowing how to draw well rather than the veneer work itself, and drawing is a different skill entirely.'

One of the things he particularly likes about veneering is that it can be a relatively quick way to create decorative panels, and it also allows for the use of woods that can be difficult or impossible to obtain in solid form. 'It also enables building pieces with different decorative detailing than what is possible in solid wood construction, as you can for the most part ignore wood movement in veneered construction,' Craig adds.

Producing the book was a year-long project of writing and photography. 'In the end I think we created a long-term resource

for those interested in veneering, as it takes the reader from very basic skills to fairly complex veneering like marquetry and parquetry. My hope is that it becomes the new technical guide to veneering for future generations, it has been well received so far so I have high hopes for its future use.'

Craig says he found it fairly easy to teach veneering in book format. 'It's possible to lay out the required techniques fully and show through words and pictures each of the steps required to complete a certain process,' he says. 'I haven't taught veneering in person yet, but it would work the same and I would certainly use my book as the textbook for such a course if I was teaching it, I understand it's being used by a few teachers as a veneering textbook already.' His advice to fellow furniture makers interested in veneering is simply to do it. 'Don't wait, buy some veneer and give it a try,' he says.

THE NUTS AND BOLTS

Craig works from a 1,600sq ft industrial workshop in San Diego, where he has been for the past two years. 'The current shop has high ceilings and good power and light, with big rollup doors on both sides to get fresh air, though I don't often open them, and heat and air conditioning that I put in shortly after moving into the space,' he says. 'It's probably the best workshop I've had for a variety of reasons, not just the lack of a guy grinding metal all day right next door.'



PHOTOGRAPHS BY CRAIG CARLSON





He works with shell, plastic, metal and sometimes other materials along with wood, and doesn't have a preference when it comes to which wood types he works with. 'I don't stain or dye my finished pieces any longer though, the only dyed wood in my work now is in the coloured veneer I will often use in marquetry imagery,' he says. He enjoys working with both hand and power tools, and tends to finish with lacquer or conversion varnish. He explains: 'Lacquer for its ease in application and ability to be repaired and touched up when necessary, conversion varnish on full filled Art Deco pieces for the uniform quality of the final finish. Those are typically done with polyester undercoats to fill the grain.'

As well as his Roentgen desk, he is currently in the last stages of building a puzzle game table. 'It has a mechanical lift mechanism and is Art Deco in style, with a variety of puzzles tied to the games hidden inside. And a highly mechanical display

stand for a repeat client that is amazingly complex inside, even though it only does one thing. There are a variety of puzzle and mechanical pieces coming in the future, as I'm booked out about two years with commission work.' If anything the Covid-19 pandemic and lockdowns have led to him working longer hours than before. 'There was a period where I wasn't able to go into the shop, but for the most part, I have been working non-stop the entire time. I'm not sure if that's good or bad really, but the majority of my work had been scheduled before the pandemic started and I just continued doing the same thing through the lockdowns.' So what does he do when he's not working? 'Not working? When is that exactly?' asks Craig.

Learn veneering with Craig on page 20
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The Furniture Makers' Company
the furnishing industry's charity



STEP 2 IT

FIND OUT HOW YOU CAN HELP THE FURNITURE MAKERS'
COMPANY WITH ITS LARGEST EVER FUNDRAISING CAMPAIGN

IMAGE BY THE FURNITURE MAKERS' COMPANY

The Furniture Makers' Company, the City of London livery company and charity for the furnishing industry, has launched the largest fundraising campaign in its 120-year history, asking the sector to 'Step 2 It' and help raise £250,000 to support people from the trade who have been impacted by Covid-19.

The new campaign, which will run for 12 months, aims to inspire companies and individuals to organise sports-based fundraisers in aid of the charity, encouraging friends, family and co-workers to join in the fun.

Coinciding with the easing of Covid-19 restrictions in the UK, Step 2 It was launched following a year that saw the charity award record numbers of financial grants to people from the trade whose lives and livelihoods were disrupted by the pandemic.

David Woodward, Master of The Furniture Makers' Company, says: 'The number of enquiries for support from our charity skyrocketed in 2020 because of the devastating impact of Covid-19. The launch of the Step 2 It campaign couldn't have come at a more critical time as it's clear that the economic impact of Covid-19 will be with us for some time to come, and we predict that there will be many people who will continue to need support.

'With many of us having led more sedentary lives than normal over the past year, we're hoping Step 2 It will encourage the trade to get active by organising Covid-compliant events that bring people together and promote the charity's work while raising funds. What you do to raise the money is up to you. It could be something as simple as a sponsored walk or a company game of rounders – whatever you want. What's more, thanks to a generous benefactor, every single penny we raise will be match-funded, giving you double the reason to Step 2 It and raise money for our charity.'

In addition to urging companies and individuals to organise their own fundraisers, The Furniture Makers' Company will be hosting various events around the country with support from its regional committees, as well as several fun online challenges, that people can get involved in from May 2021 through to April 2022.

Businesses or individuals wishing to get involved and organise a Step 2 It event are encouraged to go to: furnituremakers.org.

uk/step2it and complete a pledge form to receive a free Step 2 It campaign pack.

The pack includes advice, event planning tips and other materials to help companies organise and promote a successful event. Gold, Silver and Bronze sponsorship packages are available for those that want to sponsor the campaign.

The Master adds: 'On behalf of The Furniture Makers' Company, I would like to thank the companies that have already signed up as a Step 2 It sponsor: Axminster Tools (silver), the British Contract Furnishing Association (bronze), the British Furniture Manufacturers Association (bronze), Celtheath (bronze), Lamello (silver), Ocee Design (silver) and Panaz (silver). It's my hope that in a few months' time, we will have an incredible calendar of events happening around the country – so, please, Step 2 It and support your industry charity by signing your company up now.'

For more information, go to furnituremakers.org.uk/step2it or justgiving.com/campaign/step2it.

PERSONAL SUPPORT GRANTS

Throughout the Covid-19 pandemic, The Furniture Makers' Company has been awarding Personal Support Grants to members of the trade to help mitigate against the loss of earnings people are experiencing as a result of being furloughed, made redundant, unable to work or a diminished order book.

The Personal Support Grant the charity awards someone is based on the applicant's situation with the duration of the support depending on their changing circumstances.

- Individuals can apply for a monthly grant of £200 for a maximum of four months
- Married couples can apply for a monthly grant of £250 for a maximum of four months
- Sole traders can apply for a one-off grant of £500.



SHARPEN UP YOUR SHARPENING

MICHAEL FORSTER EXPLAINS HOW TO GET THE BEST FROM YOUR TOOLS

It's easy to recognise the signs: sharp tools do the work for you with a song in their hearts – the sweet sound of a sharp blade cutting – while dull ones make it difficult and sound, well, dull really. As soon as the work doesn't seem to be going quite so well any more, touch up the edge and try again. If suddenly it feels good with a capital G, then you know the tool was blunt – and you'll soon become quite adept at the diagnosis.

Good sharpening isn't as difficult or as time-consuming as is generally thought, but I'm prepared to bet there are people out there doing what I used to do – trying to sharpen tools freehand on old-fashioned stones that take forever. I'm not going to give a complete run-down on sharpening – I'm assuming that you know the basics – but it may be possible to raise your game while dramatically reducing the time and frustration involved.

HONE IN

The first step to better sharpening, if you don't already have one, will almost certainly be to buy a honing guide. Sharpening freehand is certainly possible, and some people seem to be remarkably good at it, but I was never one of them. For a really

good edge the bevel needs to be flat across its narrow dimension; and for best results with planes and chisels, the angle itself needs to be reasonably precise. In a bevel-up plane like most of mine, changing the angle will change the way the tool cuts quite dramatically. So it's good to be as precise as possible, and that makes a honing guide a great investment. There's a range of them on the market at a variety of prices, and there's precious little agreement about which are best; have a good look around and do a bit of general reading, but I'd say that more than anything, you should make 100% sure that your honing guide is gripping your blade really, really firmly: that way you know you're getting as accurate as possible. For some plane irons, you really need to be able to rock the guide to produce a curved edge, so look for a narrow or barrel-shaped roller.

I don't generally favour the kind that have wheels either side of the stone running on the bench. How can I be certain after many flattenings that my stone surface is perfectly parallel to the bench? What about minor irregularities in the bench surface itself? And worries about the roller wearing the stone are quite misplaced – it's the tool that does that. I want the roller bearing on the same surface as the tool, and then as long as that's flat all is well.



1



2

- 1 There are a great many honing guides, so take your time to pick one that's right for you
- 2 Flatten water stones regularly to ensure they're doing a good job of sharpening
- 3 Use firm pressure on the coarse stone, and pull the blade towards you – it won't take long to get things acceptably sharp
- 4 A full set of well-sharpened tools will save more than enough time to justify the expense

PRECIOUS STONES

As far as stones are concerned, there's a wide choice. If money's no object, diamond and ceramic stones have a lot going for them, but for cost-effectiveness I don't think you'll do much better than a good set of water stones. Don't start using them, though, until you've ensured some way of keeping them flat, or they'll soon be doing more harm than good. A piece of 12mm float glass makes a good base, with a piece of 220-grit wet-and-dry. Don't glue it down – just spraying the glass with a film of water will hold it well enough. Every four or five minutes of use, pencil-hatch the surface of the stone and rub it on the paper until all the marks disappear.

Use separate paper for flattening the different stones so that your superfine polishing stone doesn't get contaminated with grit from the coarser ones.

STONE SHARPENING TECHNIQUE

Take your time in setting up, make sure everything's secure – the stones held firmly on the bench, blade secure in the guide and so on – and then take slow, deliberate strokes as you hone. On coarse stones, you want to cut deeply so it's slow strokes with heavy, heavy pressure. Don't worry about wearing the stone – that's when they work best, as long as you flatten them regularly. On the polishing stone, it's light strokes, but still take your time. Settle the blade firmly before every stroke and ensure that the

finger-pressure is where you want it – central on a straight blade and varying on different strokes for a radiused one.

In terms of technique, I've adopted David Charlesworth's approach of only pulling the blade back towards me, never pushing it away. This method gives a lot more control. So, settle the bevel on the stone at the far end, take a moment to ensure everything's in contact that should be, and draw it steadily back towards you, stopping just before the roller gets to the front edge. I find a pencil placed on the bench pointing to the end of the stone helpful, since the roller is hidden from view.

ALL IN HAND

Finally, if I'm going to sharpen as soon as it's necessary, and not put it off, the kit needs to be accessible. A dedicated sharpening station with everything to hand is well worth the time and space given to setting it up. My coarse and medium stones are in a covered water-bath – a cheap plastic sandwich box – and the superfine stone sits on the surface. All the flattening kit, a plant sprayer and towels are to hand, and since I don't have running water in my workshop I start each session by placing a bucket of water under the station. Sharpening is then not a chore – indeed it can be a welcome change of pace.

So, set up the station, refine the techniques and never be reluctant to sharpen – and you should never have cause to blame your tools.



3



4

ARTS & CRAFTS-STYLE GARDEN SEAT

JOHN BULLAR BUILDS AN OAK BENCH
FOR AN EDWARDIAN HOUSE

I was commissioned to make a garden seat – not like any I have ever seen in a garden furniture supplier, but a large seat made from European oak. The seat, which would stand in the garden of an Edwardian house, would match the Arts & Crafts styling of the same period.

The finished seat stands at the edge of a walled kitchen garden. The oak was left bare at the client's request so that over the course of a few seasons, it will lose its golden colour and turn a pale, timeless silver-grey.





PHOTOGRAPHS BY JOHN BULLAR

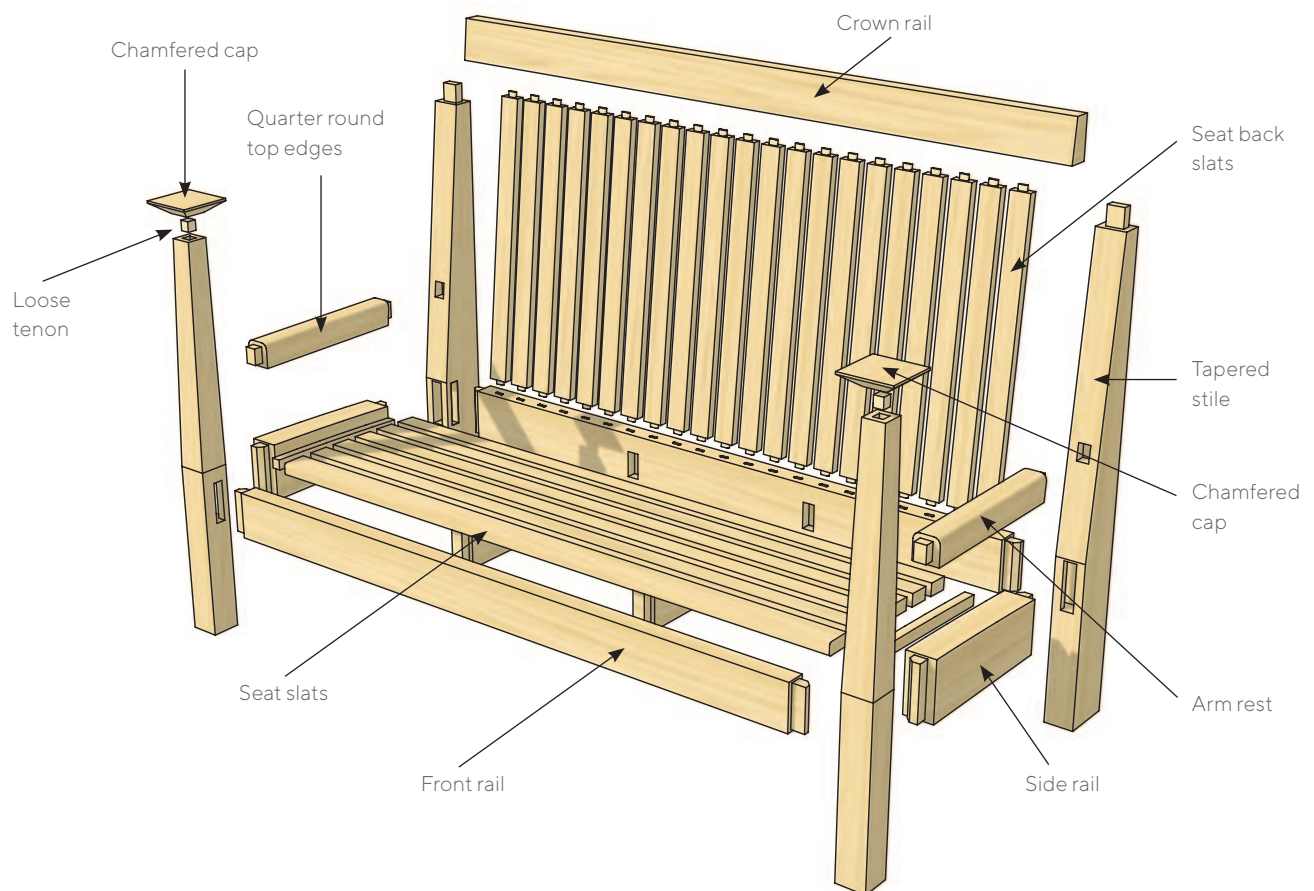
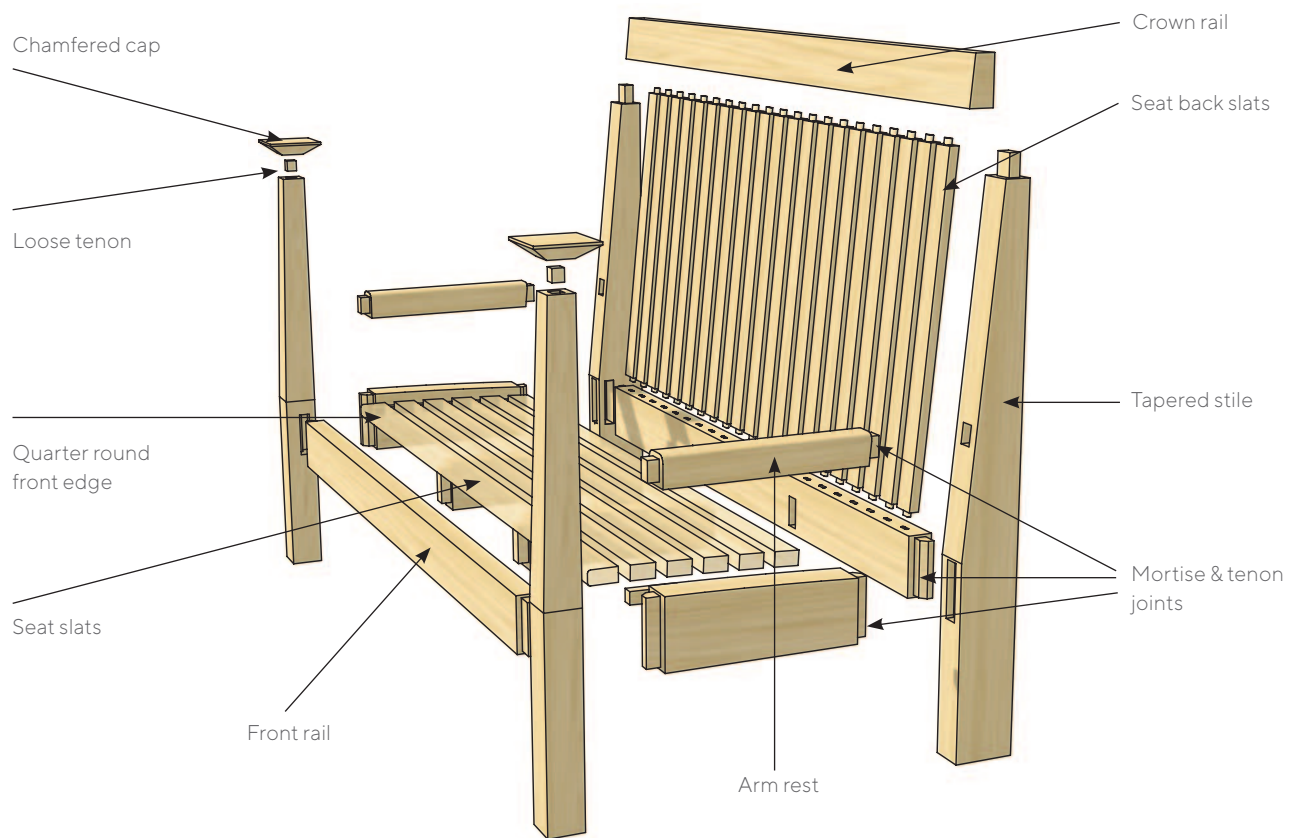
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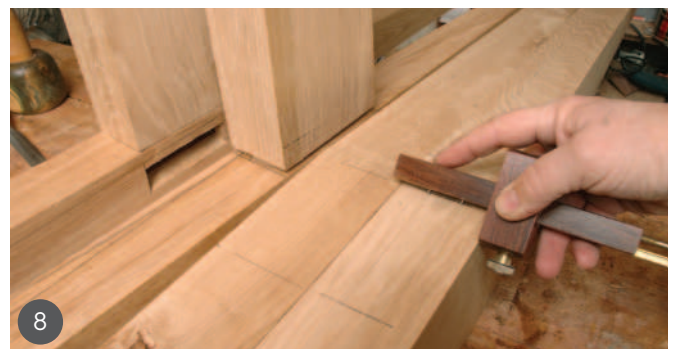
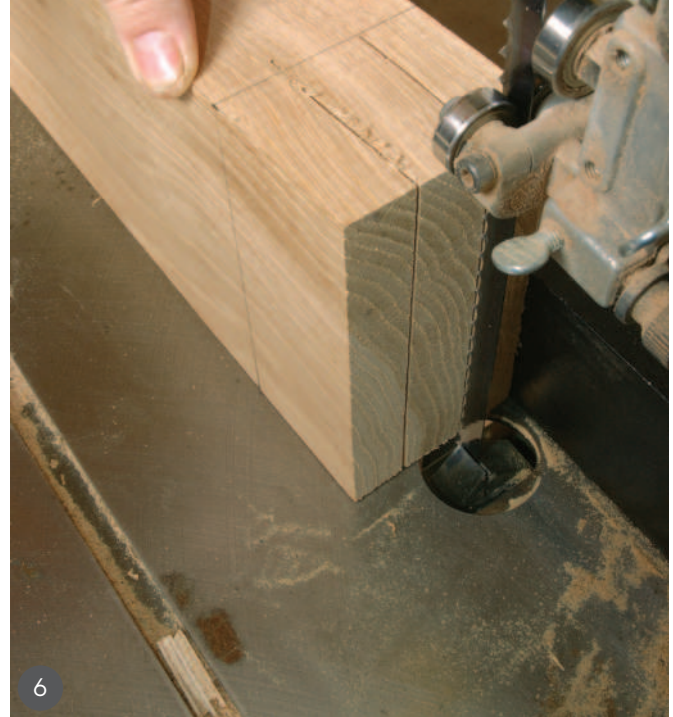
1 Heavy gauge oak like this 70mm section tends to be air dried rather than kilned. The moisture content will be about 18%, ideal for garden furniture use. Old but unused railway sleepers can be an economical source of heavy gauge oak, especially if you have a helpful supplier who will size them for a reasonable price.

2 Removing waney edges, which originally formed the outside of the tree trunk, will produce a fair amount of waste. The paler sapwood is not resistant to decay in the way oak heartwood

is, so this also needs to be removed for outdoor use. However weathered oak looks on the surface, it is surprising how fresh-coloured it is inside after it has been sawn.

3 The seat has tapered stiles at each rear corner to give the back a slightly raked angle. This involves making a diagonal rip-saw cut. It may be more economical to produce both stiles from a single long piece with a single diagonal saw cut, producing only small triangular offcuts. However, if your raw material is not long enough, you may need to produce each stile from a separate piece with larger offcuts.





4 The main seat components are sawn to length before being ripped to width, and then planed and thickened. Although doing things in this order results in slightly more work, it makes better use of the random sizes of rough sawn wood available and produces less waste.

5 The outer surfaces are hand planed to remove ripples left by the planing and thickening machines, leaving the oak with a silky smooth finish – tactile surfaces are important on seats.

MORTISE AND TENON JOINTS

6 Here, I am cutting joints on the bandsaw but they could equally be sawn by hand using a back saw. If you use a bandsaw,

the table must be accurately aligned at right angles to the blade, and in both directions.

7 If you marked out the tenons with a marking gauge and knife to the exact same size as the mortises, then you can saw the cheeks and the shoulders so the inside edge of the kerf precisely follows the knife line – the finished joints should fit without any slack.

8 The side cheeks of the mortises are marked with a gauge. I used a mortise gauge fitted with two pins to mark both sides of the socket at once. Alternatively, if you use a single pin gauge, mark from the same side each time, so you are always running the stock of the gauge against the same face.



9 The mortises can be chopped out with a square hollow-chisel mortiser or the waste removed with a router. Alternatively, they can be chain drilled out using a clean cutting boring bit, such as a Forstner type. Either drilling or routing will leave the sockets needing to be straightened up with a mortise chisel, but the results can be good square-sided mortises. Often these are better than machined ones.

10 The back rail and side rails both need to join into the rear stile at the same height and so the two mortises run into one another. To avoid the tenons clashing in the same space, I chose to chamfer the ends. Alternatively, you could cut the overlapping ends of tenons into a finger joint.

11 With a large number of joints to produce for securing the back slats to the upper and lower rails, I decided to use a Domino cutter to make mortises for loose tenons. Alternatively, they could be conventionally mortised. Rather than using proprietary beech wood Domino biscuits, you could thickness a piece of oak and saw it up to make loose tenons. Oak is more durable than beech outdoors, particularly if water seeps into the joints.

BATCH SANDING

12 Sanding a large number of wooden slats for the back of the seat can be awkward and tiresome if you work on them separately. Clamping all the slats together before sanding them as a batch not only speeds up the job, but also guarantees a uniform result.

ASSEMBLY

13 The heavy gauge framework of the seat is glued up and clamped using a combination of strap clamps and pipe clamps. Ordinary sash clamps generally aren't long enough to span the width of a seat like this. The glue used must be suitable for outdoor use. I prefer waterproof PVA because it is stronger, but the foaming type of polyurethane could be used, particularly if the joints have gaps that need filling to exclude water.

14 The horizontal crown rail across the back is mortised on to the rear stiles, while at the same time it must be engaged with the loose tenons on all the vertical slats. This is an awkward operation, best tackled by starting at one side and working your way along.

15 The bench is assembled, ready for final planing across the joints and sanding. The armrests and front seat rail have quarter rounded top edges to provide a smooth feel, otherwise the edges are left square and lightly sanded.

16 With all the slat joints and the main structural tenons engaged, the crown rail is clamped down firmly to close the joints. It is particularly important that no gaps are left, even if they are not visible, as water would run in and start to rot the wood.

17 The chamfered caps are fitted with loose mortise and tenon joints, or Dominos on the front stiles. As well as decoration, the caps prevent the end grain from being exposed to rain.



ALL IN THE DETAIL

WE MEET YORKSHIRE-BASED **STOUT DUCK**, MAKERS OF STYLISH, CONTEMPORARY AND SUSTAINABLE FURNITURE

Established in 2017, Stout Duck is a design and creative partnership between Matt Duckworth and Rose Stout. From their workshop and studio in the Yorkshire Dales, Stout Duck are dedicated to designing and creating exquisitely handcrafted contemporary furniture. Combining wood and various materials, they produce made-to-order limited-edition studio pieces as well as bespoke commissions.

Originally a stonemason by trade, and working with wood, metal and stone, Matt spent a number of years abroad before returning to the UK ready for a new challenge. With a workshop on the family farm back in Yorkshire, Matt had always had an interest in woodwork and decided to train as a designer-maker

at the David Savage School of Fine Furniture (Rowden) in Devon in 2016 on their one-year Designer Maker course.

After Matt completed his course both he and Rose had pieces accepted for the Somerset Guild Furniture awards in 2016 and he was later declared overall winner of the competition with his Mallard Desk, a design inspired by the elegant form of Louis XIV furniture. His desk won the Popular Choice prize as well and the piece was later exhibited at the Cheltenham Celebration of Craftsmanship and Design (CCD).

In 2017 Matt was selected to take part in the prestigious Crafts Council Hothouse programme, the Crafts Council's creative and business development scheme.

Matt's talented partner Rose Stout grew up living between London and New

Zealand. She has always been fascinated and influenced by the rich Maori culture and art and graduated with a degree in Art and Design from Camberwell School of Arts, London. Coming from a long line of cabinetmakers and boat builders Rose carried on in the family tradition and trained as a bespoke cabinet designer-maker at the David Savage School of Fine Furniture, where she also later taught.

SUSTAINABILITY

Matt and Rose are passionate about using locally sourced timbers and it is important for them to know where their wood comes from; they firmly believe that the history of the tree is part of the story of the finished piece. Stout Duck



works with a few small local sawmills who source their timber from managed woodland and trees that are either storm damaged or have come to the end of their growing cycle.

Their customers are aware the timber has come from a local source, often milled on site, so reducing the carbon footprint. Using local wood sources also allows Stout Duck greater control over the selection of their timber, ensuring that they are able to choose pieces of exactly the grain pattern and colour to match the design of each piece. The Mallard Desk, for example, is made from English walnut, with a drawer made from English pear, an English cherry base and spindlewood detail.

Sustainability is important to the company and they are constantly looking at ways to reduce waste and use eco-friendly products.

THE PROCESS

Matt and Rose offer a complete service from concept through design, to completion of bespoke work carried out to an extremely high standard. They work closely with their clients and involve them throughout the whole process, creating a piece that not only satisfies the brief, but hopefully exceeds their expectations.

This journey with the client provides them with a piece that is truly unique and most importantly, personal to them. In turn, Stout Duck have some very satisfied customers who are delighted to have invested in their work and the smooth collaborative process.

The range of work produced by Stout Duck is impressive. Working on both bespoke and limited-range studio pieces their gallery includes beautiful examples of bureaux, book cases, gates, tables and fitted furniture as well as a unique range of mirrors, clocks and boxes.





We asked Stout Duck to tell us more about their work and their ethos.

You work with local timber, are there any particular types of wood you prefer to work with and why?

I couldn't give you one wood, as every different kind has its pros and cons. But I most enjoy working with the fruit woods, cherry, pear, plum and apple. The colours are amazing with deep pinks and vibrant purples through to more subtle greens and golden browns. They are a joy to work and come off the tool almost polished while giving off a beautiful, sweet scent and a natural lustre that lend an element of luxury to a piece.

Do you find that customers respond well when you can tell them more about the provenance of the tree their furniture is made from?

Yes, for a lot of our clients the provenance of the wood used is an important factor. Knowing that it has come from a local source, reducing the carbon footprint.

Sometimes clients ask for the piece to be made out of wood which has been felled on their property, adding to the story of the piece.

Your work shows a real eye for detail. Are the little extra touches important to your designs?

A lot of the time the design evolves throughout the making process, with the details and finishes being the last step. Whether it's a small chamfer that accentuates a curve and leads the eye or a contrasting through wedge and tenon to highlight a joint.

They are very important to the overall piece, creating subtle details that break up the piece creating visual interest and setting our work apart.

What are the challenges of combining metal and stone with wood?

Wood is a relatively unstable material, which is constantly taking on and losing moisture, which in turn causes the wood to move. With all of our work this wood movement has to be taken into account within the design to ensure that the piece stands the test of time. Combining these materials can sometimes be very challenging.

What has been your most ambitious project to date?

Every bespoke piece we make comes with its own challenges, we have recently moved into bespoke interiors and just finished a bespoke fit-out of a

whole house for a private client. Several of the pieces had over 800 different components, with various materials and finishes used. Working on such a large scale project with so many pieces that needed to fit within the whole aesthetic was very challenging.

You also run woodworking courses (lockdown permitting, of course!) Do you enjoy teaching and how easy is it to combine with making?

We find that the process of teaching gives a welcome break from making. It allows us time to take a step back from the projects we are working on, it is also nice to have people from all walks of life in the workshop lending a critical eye and different perspective to our work. Seeing the satisfaction and pride the students have (some of whom come to us with no experience) with the pieces that they have created using only traditional hand tools is what we find extremely rewarding.

How has the Covid-19 pandemic and subsequent lockdowns impacted on your work and business?

We have been relatively unaffected by the pandemic, however it has given us the time in the workshop to explore new ideas and create new products for our studio range.

Stout Duck is a member of the Guild of Master Craftsmen.

For more information about their work, see: stoutduck.com



PHOTOGRAPHS BY YESHEN VENE, MA



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THE OKKAKE-DAISEN-TSUGI

JOHN BULLAR DESCRIBES THIS JAPANESE SCARF JOINT



The Okkake-daisen-tsugi is a scarf joint with an oblique double socket in the middle section, which is held in place by a rebate and straight tongue at each end. Both sides of the joint should ideally be identical, but in practice, it is far more important that the corresponding sections match so they will meet without gaps. Pegs driven into sockets in the Okkake-daisen-tsugi joint stop it from sliding apart sideways. These can be fitted right through with a slight taper, so the joint can potentially be dismantled or, alternatively, the pegs can be glued into stopped holes for permanence.



OPPOSITE Pegs are driven into the sockets to stop them sliding apart

PHOTOGRAPHS BY JOHN BULLAR



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