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REVIEW

124

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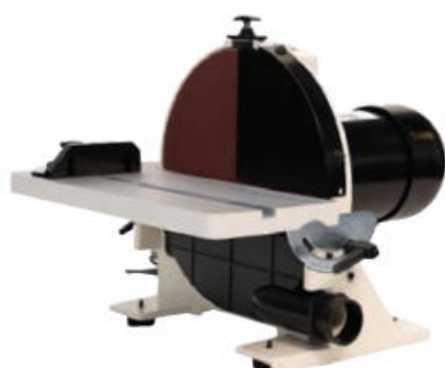
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Editor's Letter

One of the best things about woodworking is that there are so many ways to achieve outcomes. There's minimalism and there's also maximalism! Some like to spend on state-of-the-art tools and equipment while others go the way of the spartan, either from necessity or for the satisfaction of exercising ingenuity and the discipline of making do with less.

This issue, Damion Fauser takes us back to fundamentals with of the ins and outs of breadboard end construction but shows there are many ways to do this with machinery, power or hand tools. You might call it a maximalist approach

However, from what he terms a minimalist workshop, Florian Meigel, 2023 World category Maker of the Year Awards winner, brings us a complex project. Imagine your longboard breaking under your feet at 50+km an hour, Florian says, as explains how to press fibreglass reinforced plywood into compound curves. Florian's story is a masterclass in templating delivered with step-by-step photos.

Speaking of forensically undertaken processes, this issue we step into the workshop 'laboratory' of David Luckensmeyer whose in-depth journey with eight hardwax oils gives us some extremely well considered insights into their constituents, usage and performance. All the instructions were read, however David shows that it pays to know more.

Woodworking can be a very enjoyable solitary pursuit – 'hours can easily slip by', says Tim Major who after a lifetime of building, renovating and cabinetmaking work now enjoys the more minimalist and miniature world of netsuke carving. In Carol Russell's profile of Chi Ling Tabart we also see the poetry of expression that small-scale sculpture can convey.

In another article, Angharad Summers considers the morality of making and materials usage in a world increasingly filled with consumer products. She asks: 'What do I have to contribute that is new, yet necessary? Or at the very least not using brand-new materials that are simply contributing to the never-ending consumer (waste) cycle?' Instead of egocentric, there is ecocentric design, she explains from p.60.

The Chair: A story of design and making in Aotearoa is the name of an exhibition in New Zealand that presented 110 chairs designed and made within the last 170 years. David Haig's review touches not only on design trends, but also gives insights into the personalities and politics of decades gone by. If you've never heard of the Artiture group or how the Salon des Refuses exhibition came about, head to p.36 to find out.

If you're reading this now you may still have time to include your work in this year's online showcase of fine woodwork and wood art. The deadline for entering your work in Maker of the Year, presented by Carbatec, is September 4, 2024. Next issue will feature our Top 100 entries – we'd love to share your work in the mix. Find out more at www.woodreview.com.au/moty

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Florian Meigel in his studio in Bavaria, Germany.

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Veritas 600mm Shop Rule

Reviewed by Raf Nathan

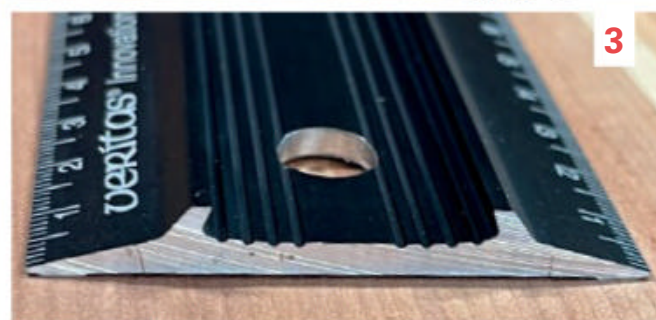
A ruler is such a basic and under-rated tool in any workplace, and yet so important. After all, arguably, we could not work without a pencil and ruler.

Always consistent with tool build quality, Veritas make this ruler from extruded and anodised aluminium. Having an accurate ruler at this length is a cabinetmaker's or luthier's dream, especially as this ruler can read from 0mm at the end. What is good, is that both long edges are bevelled so you can read directly across measurements onto your piece of wood thus avoiding any parallax error. The base is dished so the outside edges are always flat on the workpiece.

The rule is 2-1/2 inches (63mm) wide and the laser etched markings read from the left on both edges. I checked the accuracy of the ruler against my reference tool and it was perfect.

Reading from 0mm at the end is a boon as this is a difficult manufacturing process and some longer rulers avoid this and begin measurements set back from the edge.

The rule appears perfectly straight and there is a pre-drilled hole so you can hang it on the wall. Build quality is very



good but let down a bit by the obvious saw cuts at the ends.

There are 300mm, 450mm, 600mm and 1000mm versions available but the 600mm is my preference for furniture making and general woodwork.

The 600mm version is priced at what I would say is a fair \$64, given the special usefulness of such a tool.

Veritas Tools are available from www.carbatec.com.au

1. An accurate 600mm is a great addition to the furniture maker's workshop.
2. Reading from 0mm at the end is also a boon.
3. Build quality is excellent although visible saw cuts on the ends detract a little.

Wile Plane Hammer

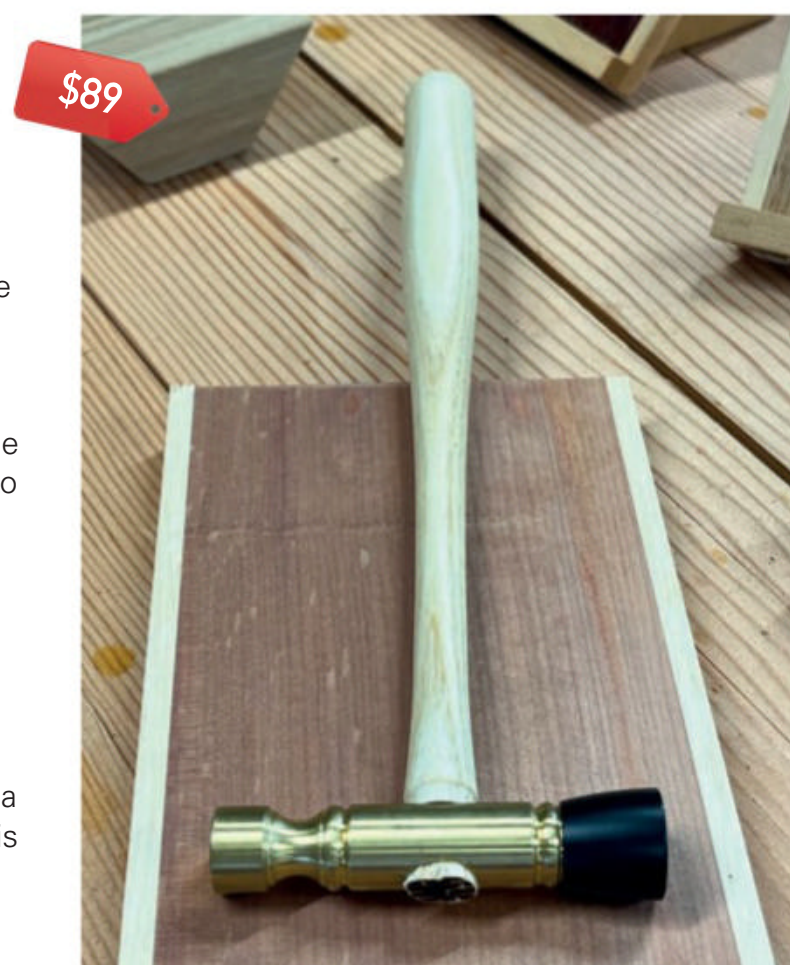
Reviewed by Raf Nathan

Richard Wile, a woodworker from Canada designed and first made this hammer which is now batch-made by Veritas. It's an elegant tool with a 290mm long ash handle that is quite slender but well balanced. It has the feel of someone spending a lot of time getting all the lengths and angles well sorted for optimum efficiency.

The impressive turned brass head has a 15mm face diameter. Overall, the hammer weighs about 3 ounces or 85gm. It's a light hammer designed to tap plane blades into position. Opposing the brass is a slightly larger high impact plastic head that is great for tapping wood pieces into place. The face of the plastic is convex to aid in not marking a wood surface.

Deft is the word to describe this hammer. It is very lightweight, but the refined design directs the force to the faces perfectly. For any jobs around the workshop that require 'tapping' such as adjusting plane blades, fitting wood joints or lining up fences, this is perfect – plus it is a beautiful thing. Given the tool's special feel and quality build, the price is very reasonable.

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Baumr-AG Bench Belt and Disc Sander Combo

Reviewed by David Deambrogio

The time had come to move my 2200mm oscillating belt sander on. While I appreciated its versatility, it was just too big for the small, detailed pieces I was producing. It was also taking up valuable space in my small workshop, so a smaller dual purpose machine was ordered. However, after a few months of waiting, the lead time could not be confirmed, and I had to make a large batch of small parts, so a quick solution was required.

When I came across the Baumr-AG BSS-55 bench belt and disc sander made in the People's Republic it had a price that had me sceptical, but satisfied enough that I would get at least this job done.

The only assembly required is to fit the little table for the disc sander. This has an angle gauge that is easy to adjust with a large threaded knob.

The 400 watt brushless motor is surprisingly quiet and ideal for confined spaces, and being S1 rated means it will run for extended periods without overheating. At 15kg the sander is not light, but it's not heavy enough that it can't be swung up from under the bench where it lives when not in use. The dust port is 60mm so adapts to any type of extraction unit.

The sander comes with an 80 grit, 150mm disc and a 100 x 914mm belt which easily eat away soft or hard material. The belt with 770rpm speed can be used horizontally or vertically and has a tension release lever for ease of replacement. The disc runs at

3000rpm and is a hook and loop item that can be replaced after loosening and moving the table.

Having used the sander quite a few times now, the value for money in my view is clearly exceptional. As a boxmaker, I find it ideal for producing wood hinges, box description tags, watch pillow caps, timber handles etc. The manufacturer states the sander is also ideal for acrylics and metals and while I have not had a chance to trial these materials, I see no reason why it would not be suitable for profiling knife blades or other metal items.

I have found the belt ideal for taking away bulk from around the finished size. The fence is an added bonus and stops the piece being sanded from running away.

The disc I use for the final grind with the table allows the piece to be rotated and manoeuvred so the minutest amount can be removed, down to a 0.5mm pencil line. The 80 grit disc pad does leave grooves on an edge sand,

Above: Made in China, the Baumr sander combo suits small jobs and detail work. A lightweight solution for benchtop sanding needs, the Baumr unit switches easily from a horizontal to vertical set-up.

however the use of a higher grit finishing disc easily takes these away with only a light hand sand required for a smooth finish.

To sum up, the Baumr sander combo is a great little machine, I'll give it an 8 out of 10, only because it does not come with a horizontal table at the end of the belt for doing inside curves.

David Deambrogio @the.box.junkie is a Brisbane based woodworker and boxmaker. Learn more at <https://theboxjunkie.com.au>



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Safety Eyewear

Reviewed by Raf Nathan

So, the belt sander was inverted on the workbench to sand some small pieces of wood... I had on a fancy dust mask, ear protection and reading glasses. Surely enough protection for a simple sanding process.

Switched on the sander and immediately a tiny piece of abrasive from the belt flew up, went under the reading glasses frame and hit me in the white of the eye. It was okay and just sore for a half a day. I normally wear reading glasses under safety goggles but two pair of glasses at once is of course cumbersome. Hence the incident at the sander.

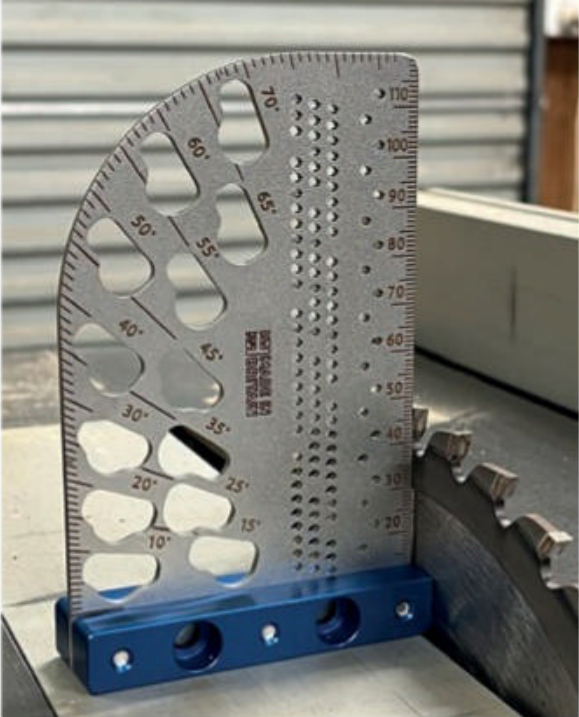
The next day I visited a a workwear shop and bought some Bolle safety

glasses with built-in bifocals. These glasses are standard vision except for a small half-moon shape in the lower half which is prescription. They wrap around well and fit closely to the cheeks. The super clear polycarbonate lens is scratch- and fog-resistant and available with a prescription +1, +2, +2.5, and +3. These work well but you have limited close-up ability given the small focus area.

The next week I visited my optometrist for safety glasses with a full prescription lens. The frames I chose fit snugly onto my cheeks for an acceptable seal. This gives me a custom prescription reader in a safety goggle type frame and is the best eye protection I can get. With my health fund rebate I was out of pocket \$80.

This article is not about recommending a specific brand of protective gear, but rather about the importance of wearing eye protection in the workshop. For more information on this topic see Wood Review #121 for an excellent article by David Luckensmeyer.

1. Bolle IRI-Safety bi-focal.
2. Hoya safety prescription glasses.



TrigJig PS 100 pocket square

Reviewed by Raf Nathan

TrigJig tools are made in the HICI workshop in the UK. The pocket square is one of their smaller tools and made from 2mm stainless steel plate with 12mm wide anodised aluminium cheeks secured to the plate. As per its name it reads to 100mm as a ruler.

The 90° edge is perfectly square and with its laser ruler markings is a nimble tool for small layout work. The ruler reads 0mm from the inside on one face whilst the other face reads from the outside edge of the cheeks. I found it super useful for small layout work.

The plate also has holes where you can insert a pencil tip and scribe a parallel edge line. There are angle markings on the outer edge but given the position these are only really a guide.

It excels as a height gauge. I found it ideal for tablesaw height setting and as it is perfectly square you can set your blade or fences from it. It is priced on the high side but is very well made, accurate and ever so handy.

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Lie Nielsen Large Router Plane

Reviewed by Raf Nathan

This handplane is quite minimalist in design and based on the legendary Stanley 71. Similar planes were also made by Record and Preston tools. This is the closed throat version of the Lie-Nielsen but there is another version, the open throat, which is arguably better for small fine work.

It is a beautifully made tool with exceptional quality metal machining. The included small fence sits neatly in a machined way under the base. It locks in place with a brass thumbwheel with minimal under-hang giving you plenty of clearance for edge work. The fence has three tapped holes which allow it to position up close to the blade or sit quite a distance away on either side of the blade.

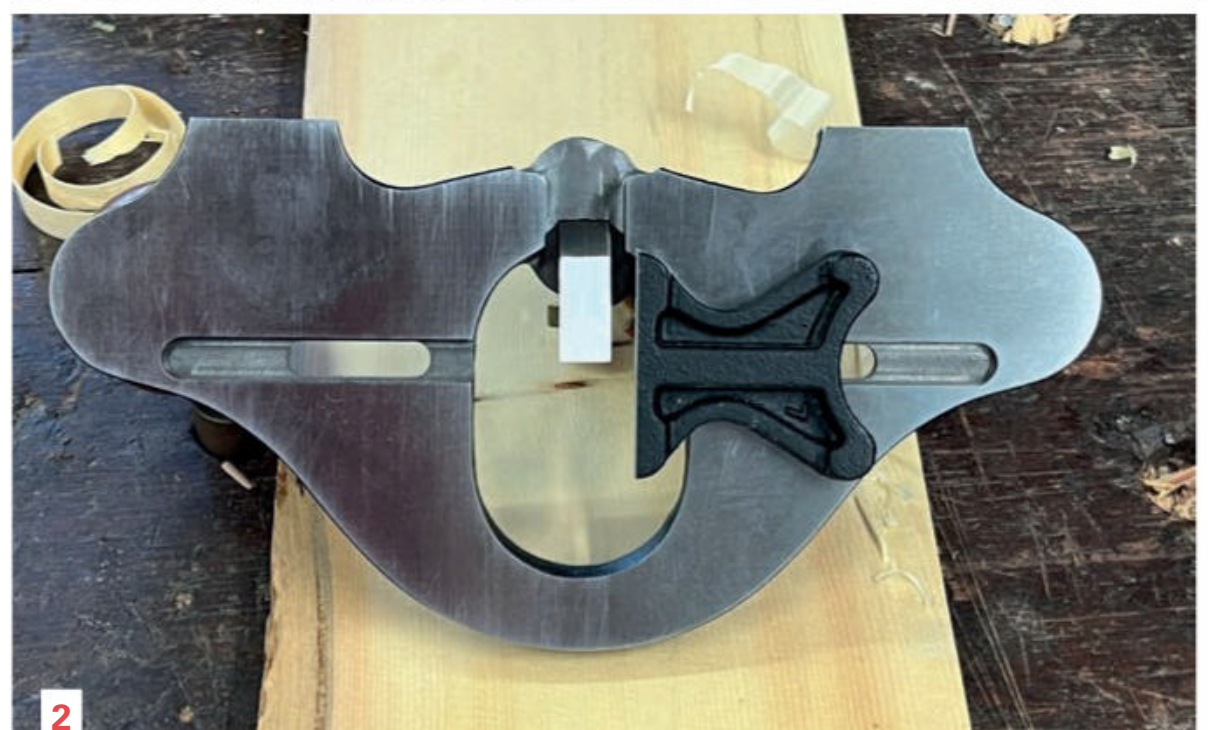
Depth adjustment of the blade is simple and effective using a brass lock knob and steel adjusting thumbwheel to quickly rise or lower the blade. There is also a small brass stop which can be set for repeat cuts at a fixed depth. The two turned cherry handles are fitted at 90° to the base. This is not as comfortable for me as some other router planes with angled handles.

The Lie-Nielsen arrives standard with its fence and a substantial square blade 3/8" wide. There are narrower blades available in 1/4" and 3/32" but you need to first buy an adaptor to hold the narrower blades. Not sure why this system has been employed as Veritas, for example, offer a wide selection of blade widths.

The blade is A2 steel and razor sharp straight out of the box, although I still gave it a quick hone to get it super sharp. The blade is one piece of folded square steel, and as such, sharpening needs care as you have little leverage when moving the short edge over a sharpening stone. I found the metal easy to sharpen on my waterstones.

The blade height adjustment mechanism is quite slick with minimal backlash. The blade rides in a machined square hole secured with a brass thumbwheel. Blade removal is simple.

At a weight of 0.75kg it is somewhat light to use. I found the plane easy to hold and work with. The overall build quality is excellent – the base for example is perfectly flat. There is a distinct hand finished feel to it and it arrives fettled and ready to work.



It is not a cheap tool but then again the comparably equipped Veritas plane with fence is only \$65 less. This is another beautiful Lie-Nielsen tool and you will never regret the spend.

Review tool supplied by Lie Nielsen Australia and available from www.lie-nielsen.com.au

Raf Nathan @treeman777 is a Brisbane based woodworker.

1. The large Lie-Nielsen router plane comes standard with fence and 3/8" wide blade.
2. Showing the perfectly machined base and included fence.
3. Overhead view of the plane in use and the cutter arrangement.



En Mina Leather Products

Reviewed by Damion Fauser

Storing your expensive tools, be it in the workshop or in transit, is essential for looking after your investment. Since 2022, Isabel Atienza of Sunshine Coast based En Mina Leather has been designing and making leather tool storage solutions that are practical and beautiful.

I recently purchased a 12-pocket chisel roll and a spokeshave cover and have since come to admire and rely upon these items greatly on my workbench.

The 300mm wide chisel roll is made from a thick yet soft cow suede with three pockets each of 35, 40, 50 and 60mm. This means it can hold a wide range of chisel sizes from pretty much any brand. All the chisels are oriented the same way, and a leather flap stops them from falling out. A third, cleverly designed unseen leather layer prevents sharp edges cutting through. The roll is well secured with a strap and a D-ring.

The stitching is impeccable, and it is abundantly clear that it is quality



work. There are six and nine pocket versions in black or tan. Zip-up pockets and personalised embossing are other options.

I bought the spokeshave cover the instant I laid eyes on it. It is a simple folded pocket design with press stud closure. The 70 x 70mm pocket will fit most mainstream spokeshaves.

The En Mina website reveals many more tool storage solutions and workshop accessories, some of which had me pause in one of those 'oh wow, I hadn't even thought of that' moments, for example holdfast sheaths and individual chisel tip protectors.

Customisation to meet specific requirements is offered. Clearly Isabel understands who woodworkers are and what we need. All raw products are sourced responsibly and sustainably from local tanneries.

These products are very well priced with the chisel rolls starting at \$100 and the spokeshave cover costing \$30. In my opinion the chisel rolls are superior to similar off-the-shelf items from other manufacturers and are also in many cases cheaper. I cannot recommend these products highly enough.

Available from www.enmina.com.au

Elten Safety Footwear

Reviewed by Damion Fauser

In need of some comfortable safety footwear (and after a couple of 'reminders'), I recently came across the German brand Elten and found it to be available here in Australia. Elten have a wide range of shoes and boots to choose from. I chose the Senex Boa shoes and have been wearing them for around 6 months now.

These shoes have been engineered with a wide array of technical and comfort features. Made from durable, waterproof and flexible fabric, and with a cushioned sole and fleece linings, they have proven to be extremely comfortable, versatile and durable in that time.

The hardened toe cap is certified to withstand 200 joules of pressure and 15kN of impact, making them compliant with international standards. Further, the caps are non-metallic, instead

made from a composite material, meaning they won't crush the toes in the event of an impact and won't set off airport metal detectors.

The BOA fit system removes traditional shoelaces, eliminating trip hazards and making a snug and comfortable fit very easy. A quick couple turns on the knob tightens the shoe to a comfortable fit. To remove the shoe, simply lift the knob, which

releases the tension on the cable and pulls the tongue away, freeing the foot. I've found this feature very handy when visiting clients' homes as it makes it super-fast and easy to remove my footwear.

Other safety features include a sole made of slip-resistant material, Kevlar midsoles for minimising penetration risk, reflective detailing for night time visibility, and antistatic materials used to prevent accidental spark or discharge.

Elten have clearly thought about making their footwear durable and long-lasting. The toe is reinforced with a hard-wearing scuff pad and the sole is tough and has shown little sign of wear after six months of workshop life.

Whilst more expensive than safety footwear that you can get from the big box stores, I consider this price to be quite reasonable considering the features and materials involved. I'll be buying them again, but I'm confident I won't need to for quite some time.

Available in Australia from www.stitchkraft.com.au





Tormek Knife Angle Setter

Reviewed by David Luckensmeyer

If you have a Tormek sharpening machine (any model) and a current or previous knife jig for sharpening knives (e.g. KJ-45), this new angle setter is an absolute no-brainer. It does exactly what it needs to do to speed up knife sharpening. The angle setter does not take the place of the knife jig. Rather, the angle setter calibrates the machine and the knife jig holds the knife.

The manual's description of 'snap, set and sharpen' is accurate. I won't go through the step-by-step process here because the Tormek documentation is as clear as usual. To prepare for sharpening, I mounted the angle setter to the universal support ('snap'), calibrated the correct 'protrusion' i.e. the distance from the support to the knife edge, as well as the angle ('set'), removed the angle setter and went to work ('sharpen').

I found 16 knives of all sizes in my kitchen that needed sharpening. According to my stop-watch, the first couple of knives took 35 seconds to set up using the angle setter. After that, small paring knives took two minutes on average to sharpen, while larger knives took four. One badly treated knife took 10 minutes. By the time I finished sharpening all the knives, the calibration time using the angle setter reduced to 22–25 seconds per knife.

To be clear, the angle setter calibrates the machine at a chosen sharpening angle for each knife. The reason why it has to be used every time is that knife blades are different sizes and shapes, and therefore load into the knife jig differently. This variability is why I've never liked using the Tormek to sharpen knives, until now.

The angle setter has an analogue calibration method for the sharpening protrusion and angle, and it is very easy to dial in any angle from 8–25°. I wondered about repeatability so I took a freshly sharpened knife, went through the process of recalibrating the angle using the jig (I sharpened at 15°), and checked the grind. It appeared to be spot on. Consequently, retouching or resharpening knives in future should be quick.

This jig is fabulous and well worth the asking price.

Available from <https://promac.com.au/>



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US\$67

Hongdui DJ11S Chamfering Plane

Reviewed by Raf Nathan

Chamfer planes can make a perfect cut along the edge of a board. The Japanese have a traditional chamfer plane made of wood whilst manufacturers like Veritas have adapting guides for this that work with a block plane.

Woodpeckers Tools designed their version in aluminium some years ago. There are however numerous planes based on their design now available online – from as low as an amazing \$18.79.

This is Chinese toolmaker Hongdui's take on the Woodpeckers tool with the improvement of the plane now having two cutters, one at each end. It is a beautifully made plane that incorporates both a 45° chamfer and a radius edge (1/8" radius curve).

The body is machined and anodised aluminium with steel blade advancing mechanisms. A single locking on/off knob is released and with a thumbwheel the cutter is advanced or retracted. There is a millimetre and inch scale for blade depth which is somewhat accurate.

The small removeable cutters are carbide so you can forget sharpening for a while. They are fixed with screws and there is also a spare cutter discreetly stored in the body under a thumb screw. Overall, it weighs a good 0.6kg.

You can't creep up on a cut as the blade is always a full cut on each pass. Remove too much material in



Top: Hongdui's chamfer plane has a cutter at each end.

Above: The small carbide cutter is removable and fixes with an allen screw.

one pass and you risk tear-out. You make a pass, release the lock knob, adjust depth and lock again and keep going like this to the desired depth. It makes a perfect chamfer.

In my opinion, the edge achieved with a carbide cutter is not as keen as one that can be made with tool steel. There is more resistance in the cut, and it does not slither through wood. However, it makes a clean and perfect chamfer or round-over on all types of wood, as long as you don't remove too much in one pass.

Endgrain planing however is not as crisp, and can rough on some wood so not recommended by me. However I noted a YouTube review of this tool that found this process was fine.

In use I found it more efficient to remove most of the waste with a block plane and save the chamfer plane for the final cuts.

Review tool supplied by and available from www.hongduitools.com

Rock-Solid Breadboard Ends

Breadboard ends are structural and visually distinctive, and there's more than one way to attach them that will allow for wood movement, however the traditional method offers a stronger solution. Story by Damion Fauser.

Breadboard ends are essentially a structural element added to a panel to aid in keeping it flat – this works because the long grain rigidity of the breadboard end is stronger than the (hopefully unlikely) cross-grain warping of a wide panel. The issue is that you can't simply fix the breadboard end to the panel because this would violate one of the most fundamental wood movement principles.

The issue then becomes – how to attach the breadboard end to the panel whilst also allowing the panel to expand and contract across the width. There are simple and quicker methods that can work, particularly on smaller panels, such as long slip tenons, stub tenons and sliding dovetails for example.

This article will cover the design and execution of the more traditional approach. This method takes longer but in my opinion is vastly superior in terms of strength, functionality and durability.

Alignment realities

Whichever method you choose, you must understand, plan for and accept that the edges of the panel are very rarely going to be perfectly aligned with the ends of the breadboard end (**photo 1**). You must be perfectly clear with your clients about this, and even then, you may well get the call asking why things aren't in alignment.

The top panel on this chest of drawers is supplemented with breadboard ends, adding structure and aesthetics. *Photo: Naman Briner*



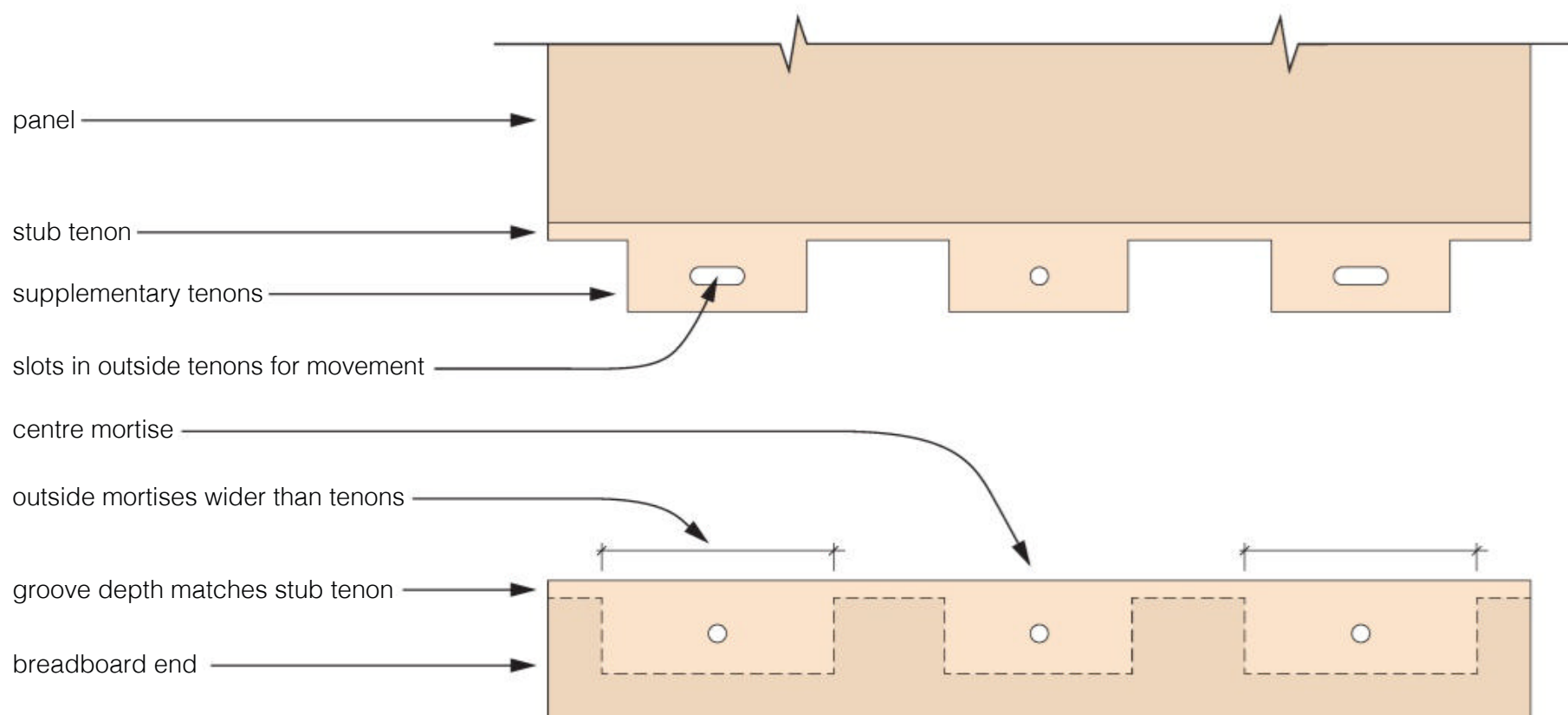
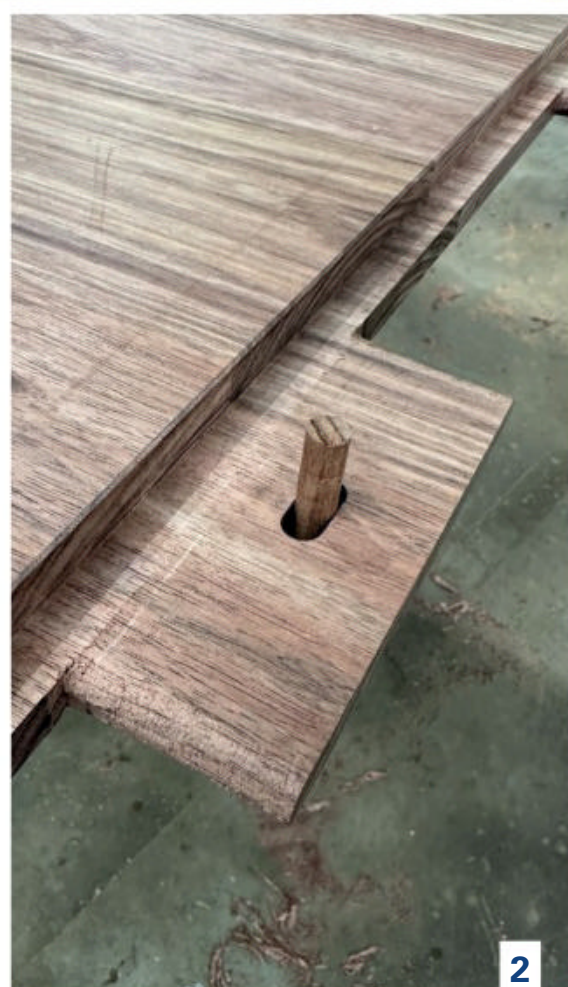


Fig.1 Mortise and tenon layout, not to scale



Cutting breadboard end boards to length will depend on the season you are making your project in. If you are making at the height of summer, size your ends slightly shorter than the width of your panel, so that when the panel shrinks during the drier winter, it will end up slightly inside the ends of your breadboards. Vice versa for making in winter.

There are species-specific formulae available for calculating the scale of wood movement, but I use a ballpark figure of 1% of total panel width. For example, a 1000mm wide tabletop will expand by around 10mm through the seasons. Note that this expansion is spread across the panel, so each edge will move around 5mm each season. You can use this to predict likely expansion and plan for your anticipated overhang/inset when cutting your ends to length – in this case I would aim for a maximum overhang of 2.5–3mm each way.

Tenon and groove

There are two main elements to a breadboarded end – the wide tenon on the panel and the groove/mortise arrangement on the breadboard ends. How you cut them will depend on the tooling you have access to and the style of woodworking you enjoy.

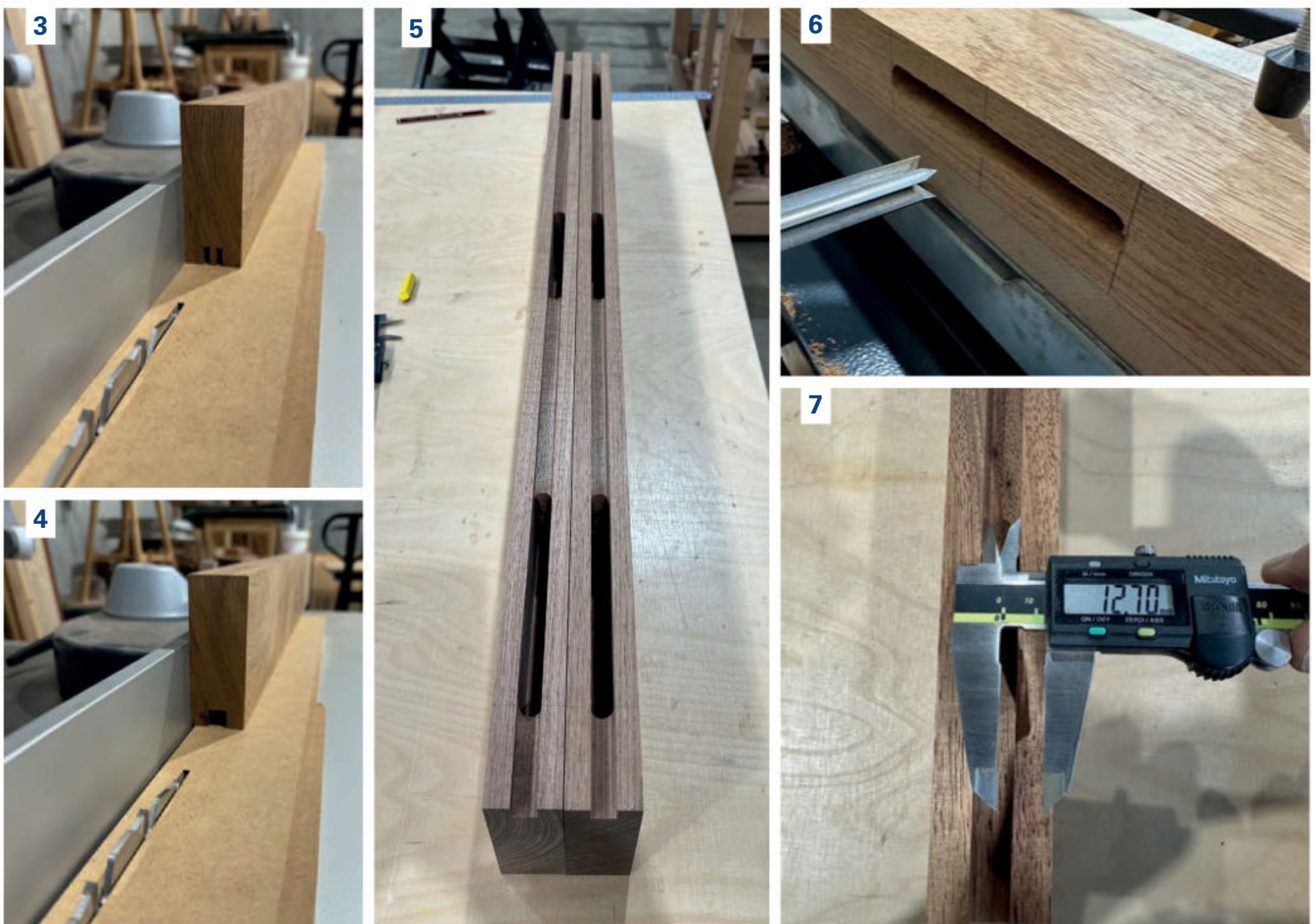
Design, structure and layout

Let's start with the layout and planning. On the panel, a full-width stub tenon does the bulk of the work in keeping the panel flat. This stub tenon is housed in a matching groove on the inside edge of the breadboard ends. A series of longer tenons then provide further rigidity and lessen the risk of the breadboard ends failing along the short grain aspect of the long groove that houses the stub tenon (**fig.1**). It is the absence of these tenons that makes other methods significantly weaker structurally.

You generally need three longer tenons. The central one is relatively dimensionally stable so we can cut the mortise to closely match the width of the tenon, as we can largely ignore expansion in this area.

The other two tenons are set towards the outer edges of the panel and will therefore move laterally as the panel expands and contracts. Accordingly, we must accommodate this movement by making their mortises longer than the tenons are wide.

Finally, you should ideally pin the breadboard ends to the tenon



arrangement to prevent it from bowing along the length and coming away from the tenon shoulder at the panel. Even this requires planning for wood movement – the pin/s in the central tenon should be matched to holes of the same diameter drilled through the tenon, whereas you need to cut elongated slots in the outer two tenons to allow for the pins to slide in those slots as the panel changes dimension (**photo 2**).

Planning these elements will be influenced by several factors. Firstly, I like to use the rule of thirds – essentially the thickness of the tenon arrangement is one-third of the panel thickness. While not rigidly adhering to this principle, I choose the cutting method and tooling for the mortises and grooves, and then match the tenon thickness to that reality. It is far easier to make the tenon fit the mortise and groove than the other way round.

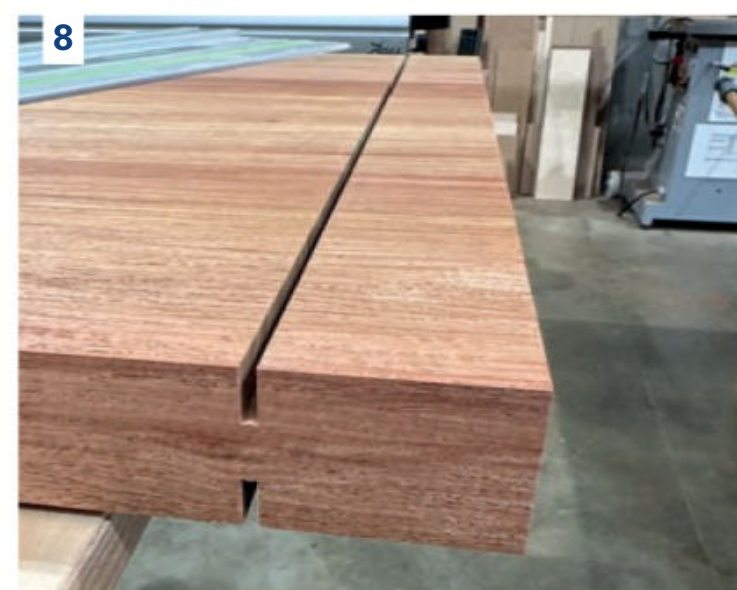
I usually like to make the stub tenon equal in length to its thickness,

creating a nice little square at the interface between the panel and the end. The length of the tenons will be largely determined by how deep you can cut your mortises with your available tooling, allowing for a couple of millimetres clearance in the bottom of the mortises. I'd recommend going as deep as you can, subject to any subsequent shaping/profiling you may wish to cut onto the ends.

The width of the tenons is a little more arbitrary – the wider you go, the more mortising you need to do and the more accommodation for wood movement you need to factor in, but the stronger the arrangement will be. The reverse is also true. I generally plan for the width of the tenons to be proportionally between 1/8–1/5 of the overall panel width.

Cutting the grooves and mortises

Once you've done the layout, mark up the ends of the mortises on the



1. The two elements will rarely line up. Careful planning will minimise the overhang. Note the subtle details of this 1mm chamfer.
2. The pins must be allowed to slide in elongated slots.
3. Centring the grooves by running each face against the fence.
4. Nibble out the remainder of the waste.
5. The slot mortiser cuts clean mortises, wide and deep.
6. These dedicated mortising cutters can cut deeply and cleanly.
7. Use calipers to record the reality measurement of your grooves and mortises.
8. Pre-cut the shoulders to prevent blow-out.



9

9. Using a dado stack to cut the initial tenon.

10. You can also use a router.

11, 12. Alternatively, cut the main tenon with a tracksaw and chisels.

13. Another method uses a spindle moulder with tenoning cutter.

14. Showing the tenon layout as transferred from the mortises.

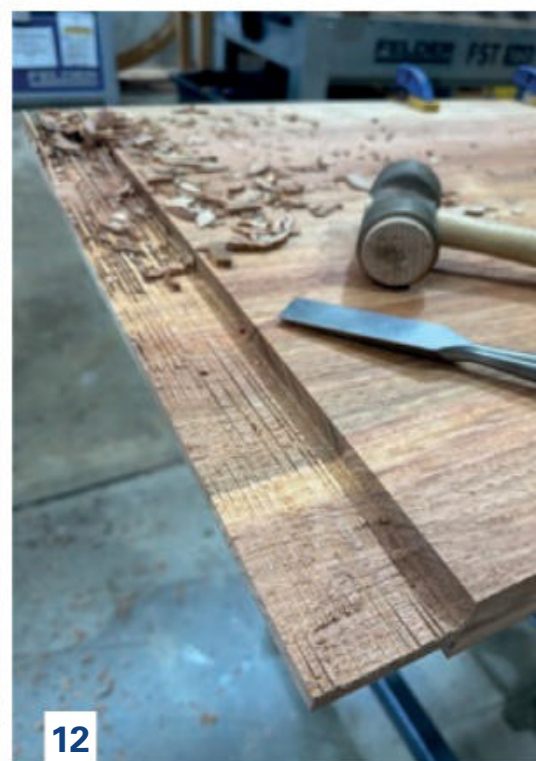
15. Drill some clearance holes for the coping saw.

16, 17. Bulk waste removal is easy with basic handsaws.

18. Cutting a test tenon or two will serve several purposes.



10



12



11



13

inside edges of your breadboard ends, allowing for the mortises to run longer than you plan your outer tenons to be. You can use similar seasonal planning methodology and ballpark calculations for this.

I cut the grooves first. Whilst you could do this with a router or even a plough plane, I find the tablesaw to be the fastest and cleanest method for this task. By setting the fence to cut one edge of the groove width and then reversing the board to run the same cut, you perfectly centre the groove on the board thickness (**photo 3**). Then you simply shift the fence over and gradually nibble out the remainder (**photo 4**). Use a raking-tooth profile so you leave a nice flat bottom in the groove.

Cutting the long and deep mortises is likely the most challenging part of the task. Creating the grooves first gives a

great reference point for setting up your cutters for removing the mortise waste. Most home-based or small-operator woodworking shops will likely find it easiest to drill out the bulk at the drill press and clean up with chisels.

I would highly recommend using forstner bits where possible as they leave a much cleaner inside wall, making chisel clean-up much easier. It is essential that the mortises run perfectly aligned with the faces of the breadboard ends, otherwise the ends won't line up flush with the face of the main panel. For this you can make some kind of paring block to assist you with accuracy during chisel clean-up.

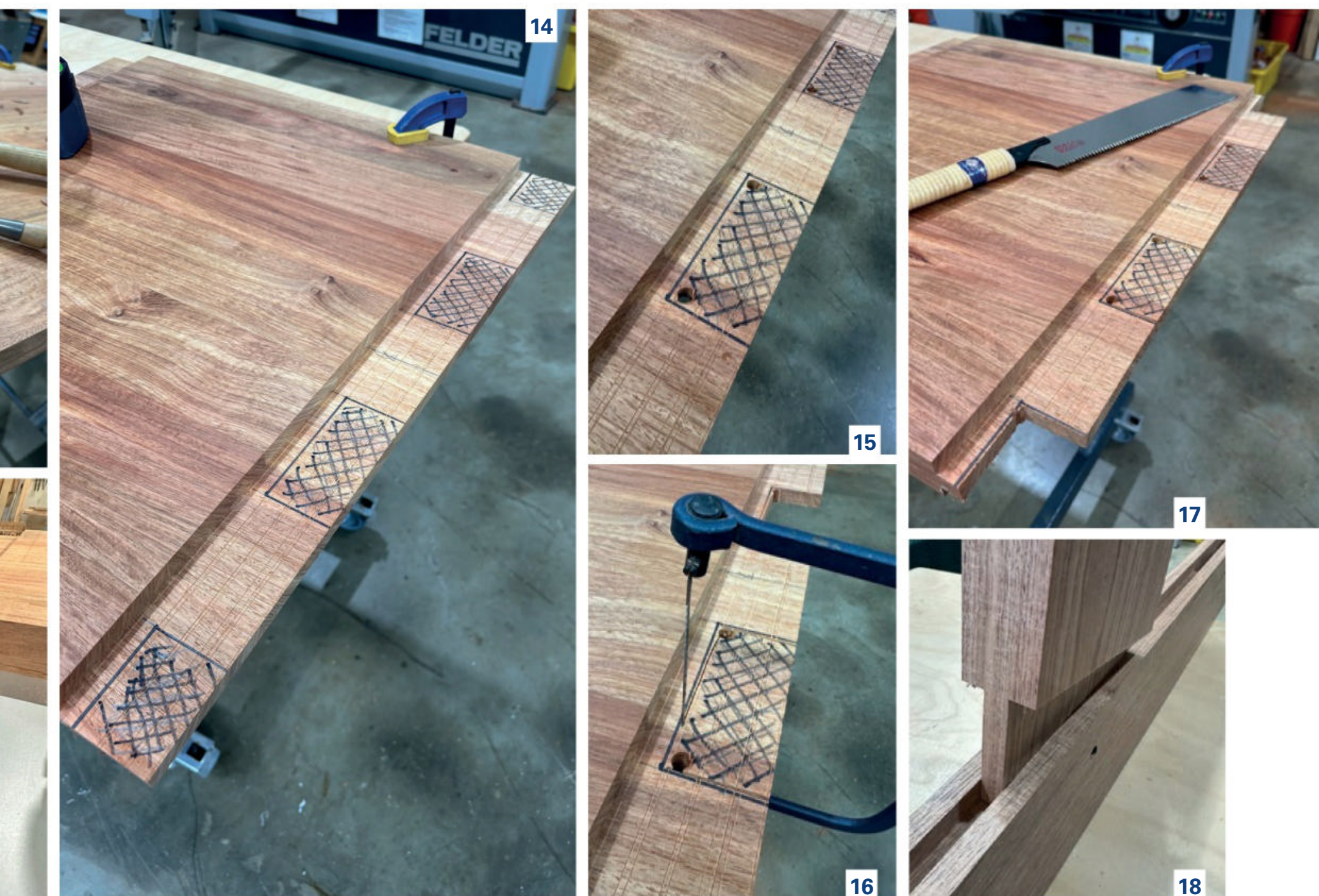
You could also use a router to cut these mortises although you may be limited by the length of tooling you can get, and make sure you take small passes to stay accurate and allow for chip extraction.

Cutting these big mortises is far easier with either a hollow chisel mortiser or a slot mortiser. I use a slot mortiser myself and love how clean and accurate the resulting mortises are (**photos 5, 6**).

Regardless of method, ensure you accurately measure and record the width of your grooves and mortises as these are the reality to which you cut the tenon arrangement (**photo 7**).

Cutting the tenons

Lay out the shoulders on the faces of the main panel, and the cheeks of the tenons on the ends. If you're cutting the tenons with hand tools, knifing and gauging these lines will help with accuracy and to prevent chipping out the cross-grain fibres at the shoulders. You'll start with one enormous full-sized tenon from which you'll mark out and cut the outer tenons.



There are many ways to cut this initial tenon. I form the shoulders on my sliding tablesaw, but you could also use a tracksaw and guide rail (**photo 8**). This prevents blow-out when using some of the other methods for removing the bulk of the waste for the cheeks. The latter include a dado stack (**photo 9**), handheld router with edge guide or guide rail (**photo 10**), tracksaw and chisels (**photos 11, 12**), spindle moulder (**photo 13**) and of course handplanes.

Next, place the breadboard onto the formed tenon and transfer the mortise ends, allowing for expansion. Mark out the stub and supplementary tenons and clearly mark the waste (**photo 14**). Drill some clearance holes in the corners of the waste areas (**photo 15**) and use hand and coping/fret saws to remove the bulk of the waste (**photos 16, 17**).

While you're at it, cut a smaller sample tenon in some secondary stock, ensuring the length of the tenons are identical. You can use this to check your settings by fitting the test tenon into one of your mortises, and you're also going to need this piece again later (**photo 18**).

Cleaning up the tenons

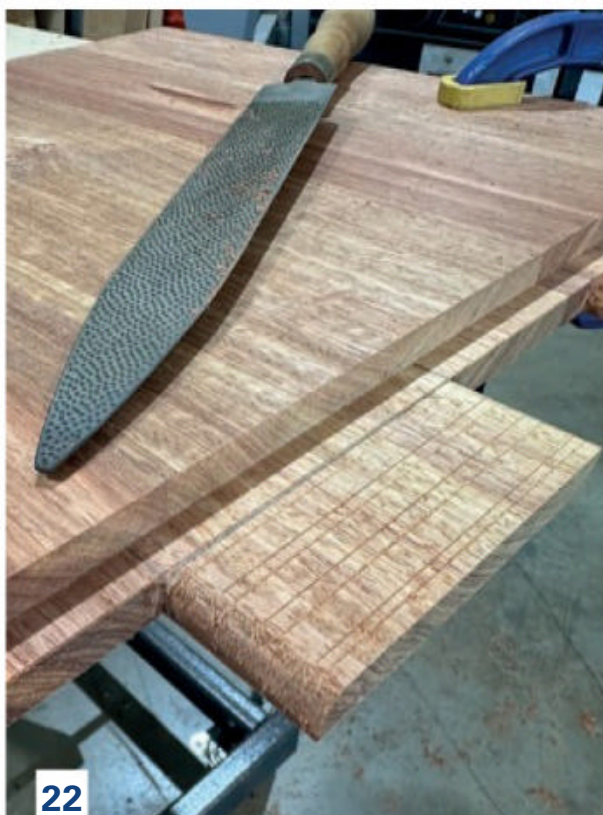
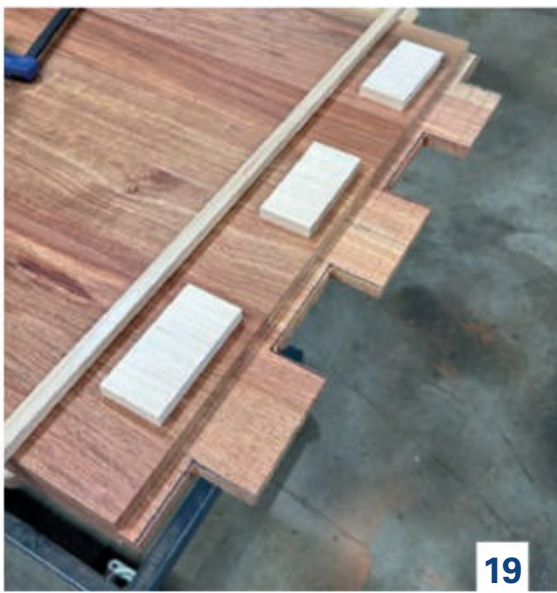
The most common question I now get is 'how do I make sure the end of the stub tenon is perfectly straight, parallel to the shoulder and matches the depth of the grooves in the breadboard ends?' Thankfully this is one of the easiest tasks you'll have.

Dress some strips of scrap stock to perfectly match the cheek and shoulder dimensions of the stub tenon. Fix this in place onto the roughly cut stub tenon with some double-sided tape. Dress some more stock to the

same thickness as the tenon shoulders, cut some pieces to size to match the final tenon dimensions and again fix these down with double-sided tape (**photo 19**). You now have a template to follow with a pattern-bearing bit (**photo 20**). The only task remaining is to clean out the round inside corners – this is easily done with chisels and/or a flush-cut saw.

Now you're going to get really well acquainted with your calipers. Check the actual thickness of your tenons in several places and record this in location on pieces of blue tape (**photo 21**). Regardless of how you cut the initial tenon, don't be surprised if you find variations of a tenth of a millimetre or two.

Localised and careful passes with a handplane easily and satisfyingly dial the tenon thickness in to perfectly



match the mortises. Use a shoulder plane to cut right into the corners where the shoulder meets the cheeks.

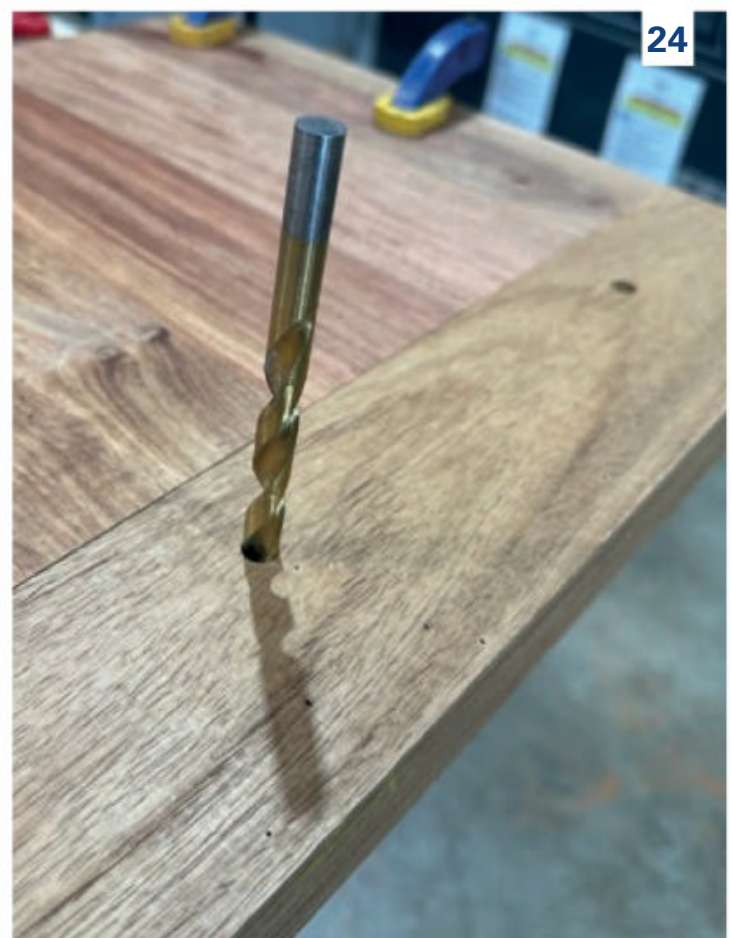
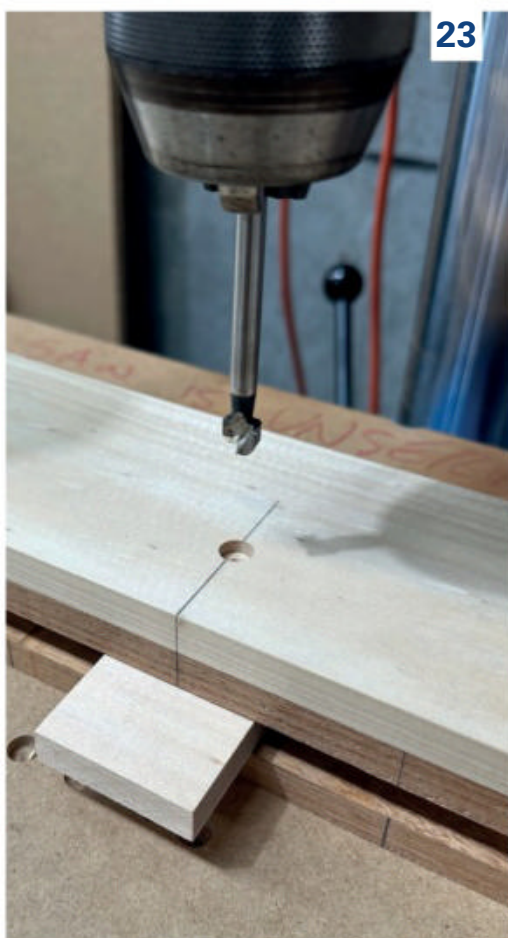
At this point you'll have to decide whether to square out the mortises or round the edges of the tenons. It's really a personal choice – as I use a slot mortiser for the mortises I tend to round the tenons, and this is easily done with a rasp (**photo 22**). I'm not overly concerned about locally damaging the end of the stub tenon in this case as this area will be inside the grooves.

Pinning it all down

The pins form a crucial function as mentioned earlier and can be visible or unseen. If unseen, then ensure you do everything I'm about to describe from the bottom face of the main panel and the breadboard ends, and don't drill your holes all the way through the breadboard ends.

Here the photos and processes are for visible pins. You can use contrasting species or leave them proud and soften them. You could go all out and make square and chamfered pegs à la Greene and Greene, but of course this would require squaring out the holes. It's really up to you.

19. Dressing and sticking down some scraps will form a template for the router.
20. Easy work with a pattern-bearing cutter.
21. Remove targeted, localised passes with a plane after recording the actual thickness.
22. A rasp makes easy work of rounding the tenon edges.
23. Drill the breadboard ends with a sacrificial packer to prevent blow-out inside the mortise.
24. Transfer the hole locations to the tenons.
25. Cut the elongated slots with an edge-guided router, stick the template strip down to support the base of the router.
26. Assemble with clamps alternating top and bottom and only glue the central tenons.



I usually plan for 1/4" to 1/2" pins (6–12mm), ensuring I have a router bit and drill bit the same size – this will make sense later. I also like to make my own pin stock with a dowel/draw plate as I find I can get much better consistency in diameter, as well as being able to choose species.

Position the holes and slots on the cheeks of the tenons – I prefer to keep them closer to the panel to avoid shortgrain weakness from the holes to the ends of the tenons.

Mark out and drill the holes in the breadboard ends, placing a sacrificial scrap board inside the mortise to prevent blow-out (**photo 23**). Fit the breadboard end to the tenons and transfer the hole locations to the tenons with a brad point or forstner bit (**photo 24**). Remember that test tenon? Fit this one and mark out a hole location here as well.

On the main panel, drill through the marked points in the central tenon only, using the same drill bit you used to drill the holes in the breadboard ends. Now also drill the test tenon. Set up a router with an edge guide and load the correct diameter straight bit into the collet.

Using your test tenon, set the tool so the router bit cleanly passes through your drilled hole and then tighten the locking screws so your edge guide runs against the end of the tenon (**photo 25**).

By doing this, you perfectly match the location of your elongated slots to the fixed pin holes, in terms of distance from the shoulder. Take the strip of dressed material that you used as a routing template to size the tenons and stick this down to the tenons, ensuring you don't foul the edge guide of the router. Now it's a simple task of cutting the slots in the two outer tenons, either using visual marks or stops to define your start and stop points. Again, use your seasonal expansion calculation to size the slots, but it won't hurt to make them longer than you think you need.

I'm often asked about drawboring at this point. I personally don't, as I've found that with careful planning, layout and cutting, the edges of the breadboard ends will nicely cinch down the panel shoulders. If you do decide to drawbore, I'd advise against drawboring the two outer tenon slots, as this may prevent the pin sliding nicely in the slot.

Assembly

You can accent the interface between the panel and the breadboard ends with tiny chamfers. This is best done prior to assembly and is short work with a block plane and diligent chisel work. Set up your gluing area by elevating the assembly onto some platforms to allow clamps above and below – this will prevent the breadboard ends flexing out of alignment with the main panel.

I often wax the outer two tenons at this point, after all, we want them to slide inside their mortises. I also often use epoxy glue for the lubricating effect on those larger tenon cheeks. Speaking of glue – only glue the central tenons! Tighten the clamps and tap your pins home, applying glue to the central pins only (**photo 26**).

Surface preparation

Large wide belt and wide drum sanders are best avoided as they will leave prominent cross-grain scratches on the breadboard ends. Orbital sanding is fine. If you choose to finish sand long grain, or if you choose to prepare the surface with edge tools, you need to follow the direction of the grain on either the panel or the ends.

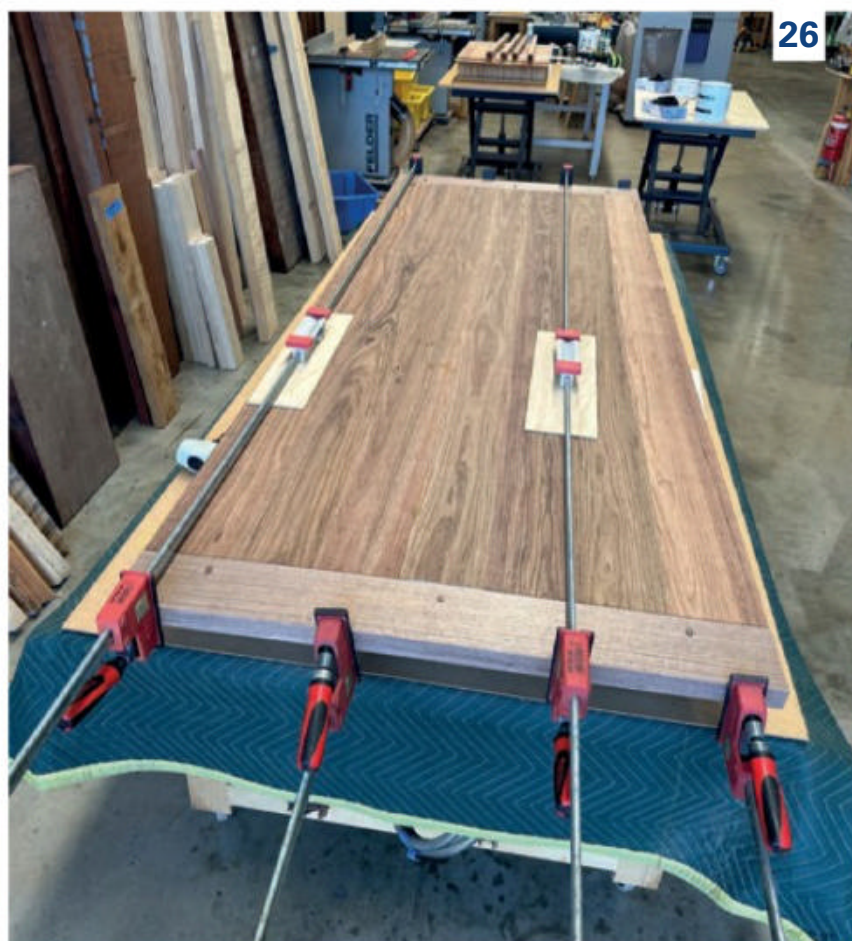
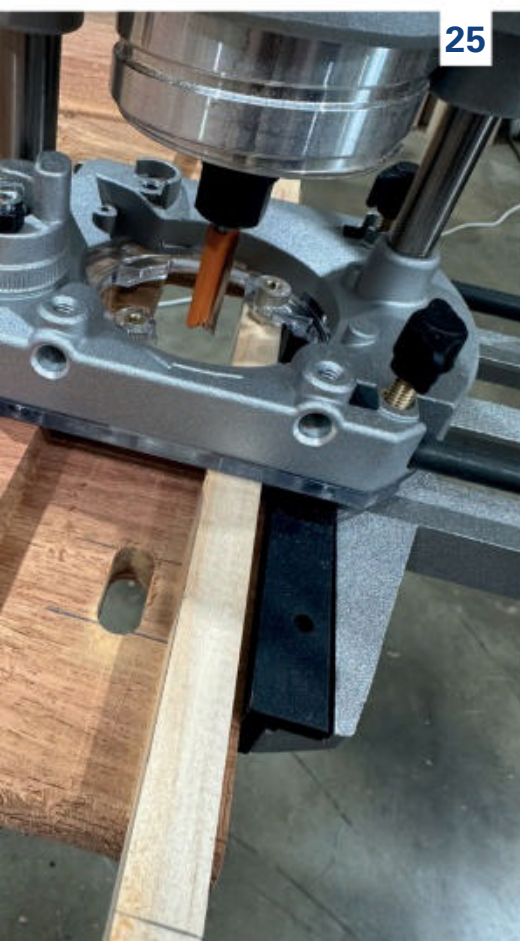
Through the seasons

Careful and proactive planning with regards to tooling choices and methods of work will bring breadboard ends into the realm of possibility for most woodworkers. They can add significant visual interest to a piece, but just remember they're done for a structural reason. Remember to account for wood movement and you'll delight in seeing how your panel shifts at the interface through the seasons – a marvellous and visual verification that wood movement is indeed real.

Photos: Damion Fauser



Damion Fauser @damionfauser is a furniture designer maker and woodwork teacher in Brisbane and a regular contributor to Australian Wood Review. Learn more at <http://damionfauser.com/>





On Test: Hardwax Oils

A definitive review of eight hardwax oils by David Luckensmeyer looks at preparation, usage and durability.

Hardwax oils are a mainstream finishing solution for woodworkers of all stripes. They are often preferred over other options like shellac, varnish and lacquer. Why? Because they are easy to use like oil except more durable. And they look and feel great.

Manufacturers would have us believe their hardwax oils are the best. At face value they share many of the same qualities. But start applying these products and it becomes obvious they do not have the same ingredients.

There is no generally accepted definition of a 'hardwax oil'. The most that can be said is they have oil and wax in them. Ingredients are usually listed

but not the proportions. Application instructions differ wildly from specific steps to wide-ranging options. And let's not get started on additives, sheen levels or tint selections.

This review includes clear versions in a medium sheen (where applicable) and is intended to inform readers about surface preparation and application options, as well as provide extensive comparisons. I set out to answer questions about smell, ease of use, aesthetics, water permeability, durability and more.

With \$1,000 worth of products and consumables on test, there's a lot to talk about. Over a period of 60 days I

prepared samples and applied hardwax oils, took photos and videos, wrote notes and performed test after test. Here is what I learned.

Testing parameters

For once, we need to read the instructions. These may all be hardwax oils but the guidelines differ substantially. I followed the recommendations to the letter (most of the time).

I selected three boards each of kauri pine (*Agathis robusta*) and Australian blackwood (*Acacia melanoxylon*) for the samples. The intent was to illustrate how hardwax oils behaved in different species. Cutting the boards

into discrete samples would have been a waste. Instead, I labelled 8 x 250mm sections per board. The products were rolled, brushed, and buffed. Eight products and three application methods gave 24 samples, or up to 48 samples in total since they were duplicated in kauri and blackwood.

I made sure to note where I did not follow instructions. Such 'experimentation' yielded surprising results in some instances. Plus having numerous samples for each product (up to 6) allowed for a variety of testing opportunities. Unfortunately, I was unable to test tinting options.

Drying conditions were optimal, with air-conditioned air. Some hardwax oils take a long time to cure – up to a month. Final observations from aesthetic assessments to durability testing were completed after 40 days of application. I tested resistance to water, red wine and acetone, as well as surface hardness. Finally, in my search to determine what hardwax oils contain, I conducted a drying test.

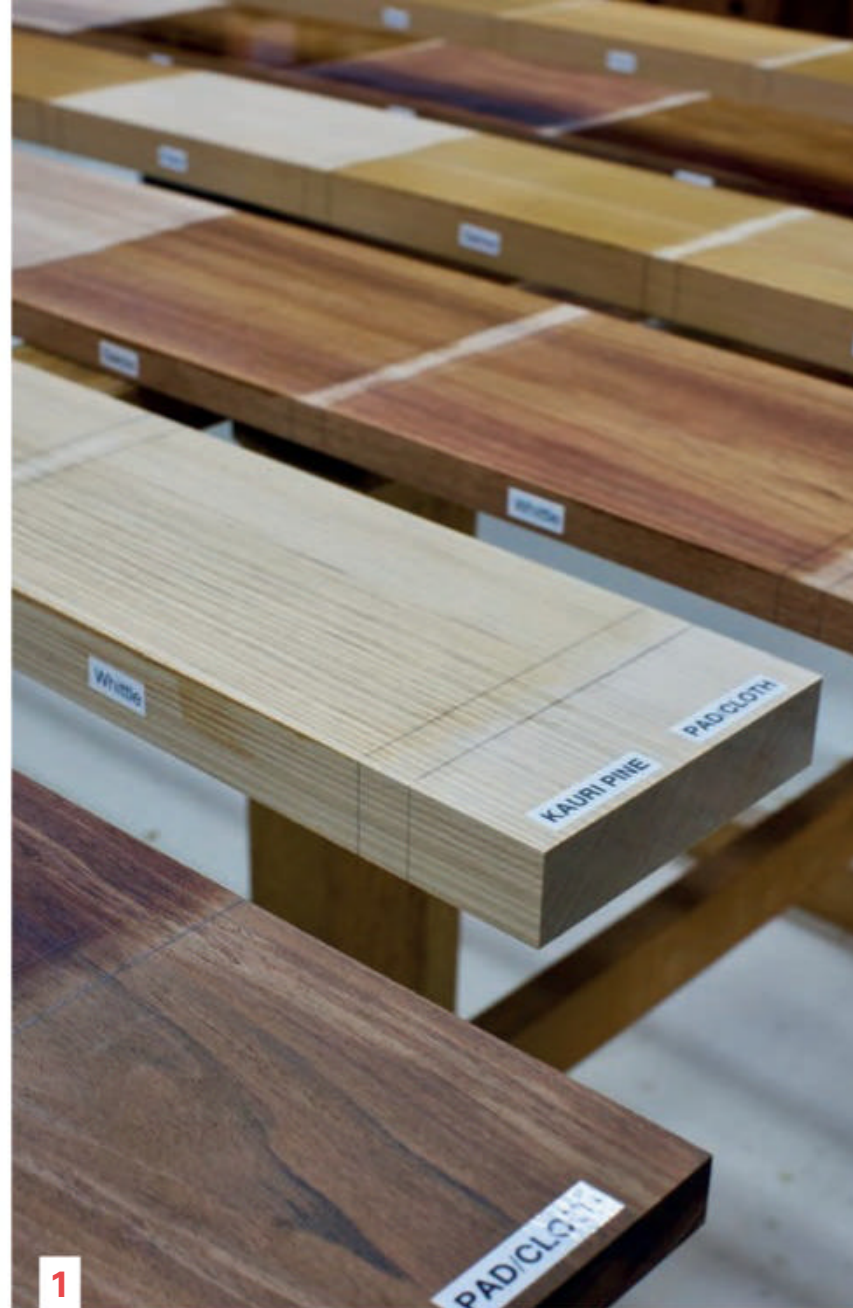
These tests were somewhat subjective. But I sought to reduce variables and assess products with fairness.

Surface preparations

Hardwax oils appear to have originated in Germany (Livros, Osmo, Saicos and Whittle Waxes are made there) for the floor finishing industry. All products refer to finishing floors as a primary use.

Common instructions include a requirement for a smooth, even surface, sanded correctly. Timber must be clean, dry and free of dust. Products are to be stirred thoroughly before and during use. There is a universal recommendation to apply thinly. All instructions refer to good ventilation to aid oxidation. 'Drying time' refers to the evaporation of solvents while 'curing time' refers to a chemical process (**table 1**).

The recommended sanding grit level is an important differential. Many hardwax oils specify a grit up to 150,



Opposite, left to right: Feast Watson, Fiddes, Livros, Odie's Oil, Osmo, Rubio Monocoat, Saicos and Whittle Waxes. There are other hardwax oils on the market but a line had to be drawn. For clarity, brands rather than products are referred to even though some brands offer other versions. Opening one after another allowed for direct comparisons of colour, smell, viscosity and ease of mixing.

1. Samples were labelled according to products, species and application methods.
2. To avoid cross contamination, I used new tray liners, rollers, brushes, cloths and pads.



including Fiddes, Rubio Monocoat and Saicos. Livros specifies 180 grit online but 240 on the side of the can, while Osmo specifies 240. Feast Watson and Odie's Oil give no recommendations. Whittle Waxes also lists 150, but includes the phrase 'or finer' which is important as we shall see.

The sanding grit level profoundly affected surface quality (look and feel). Running my fingers along the length

of eight samples – smooth to rough to smooth again – showed just how much the results were affected. Online forums are awash with questions like: 'What happens if I sand to a finer grit?'

This question was asked of the suppliers and there were two common themes to the replies. First, there was no hesitation in recommending finer sandpaper to achieve a smoother result. But second, there is a limit

TABLE 1: CHARACTERISTICS								
BRAND								
	Feast Watson	Fiddes	Livos	Odie's Oil	Osmo	Rubio Monocoat	Saicos	Whittle Waxes
PRODUCT	Timber Floor Wax	Hard Wax Oil	Kunos No.243	Universal Finish	Polyx-Oil No.3032	Oil Plus 2C	Premium Hardwax-Oil	Evolution Hardwax Oil
COST (AUD)	\$54/L	\$100/L	\$87/0.75L	\$130/266mL	\$110/0.75L	\$113/350mL	\$79/0.75L	\$109/L
SANDING GRIT LEVEL	any	120–150	150–180	any	up to 240	up to 150	up to 150	150 'or finer'
APPLICATION OPTIONS	roll, brush, cloth	roll, brush, spray	roll, brush, cloth, spray	cloth or pad	roll, brush	spatula, pad	roll, brush, spray	roll, brush, pad
DRYING TIME (HR)	6	4–6 (or less)	12–24	24	8–10 or up to 24	12–24	3–4	overnight
CURING TIME (DAYS)	7	7	28	3–5	28	5	4–5	8–10
NO. OF COATS	2	2 (max)	2–3 (or more)	1 (or more)	2 (max)	1 (max)	2	2
ABRASION BETWEEN COATS	240	maroon pad	wet polish with pad	N/A	none (unless over applied)	N/A	white pad	220
COVERAGE CLAIMS (M2/L)	20–24	20–24	22	139	24	30–50	14 (2 coats)	20–30
SHEEN LEVELS	matt	matt, silk, satin, gloss	none (determined by coat no.)	none (quite matt)	matt, semi-matt, satin, gloss	none (very matt)	ultra matt plus, matt, satin matt	matte, classic, satin, gloss
TINT OPTIONS	clear only	12	9	clear only	7	55	9	10
SHELF LIFE (UNOPENED)	not stated	not stated	4 years	not stated	5 years	3 years	>5 years	not stated
COMMENTS	Best value for money. Dries evenly and applies beautifully with equal best 'water white' results. Worst on water and red wine tests so beware. Strong smell is not for everyone.	A strong performer that dries very fast and yields smooth and attractive surfaces which are light in colour. Very durable. Does not buff well so plan to roll or brush.	A favourite for items made to be touched: carvings, frames, boxes, small furniture, etc. Silky smooth and beautiful results, but not very durable so avoid 'hard wear' scenarios.	Smells amazing and no PPE required. One of the most durable here and probably achieves the best surfaces. But it is pricey and hard work to buff off so consider machine buffing.	An attractive option that offers smooth results in all application methods. It is a pleasure to use, but I was surprised it did not compare favourably on some durability tests.	Best all-rounder on durability tests so it's an obvious choice for tables. Spreads and buffs well. A rich, darker finish that looks great. Search elsewhere for higher sheen levels.	Some raised grain and uneven/patchy results, except for buffed samples which were good. Water resistance was lacking.	Whittle Waxes was second only to Rubio Monocoat for water resistance, and fared well in the red wine and acetone tests. Dries fast and all samples looked fantastic. I like it.

to how fine one should go, because burnishing timber to extremes inhibits adhesion. A sanding range of 180–300 is my suggestion (species dependent).

Application options

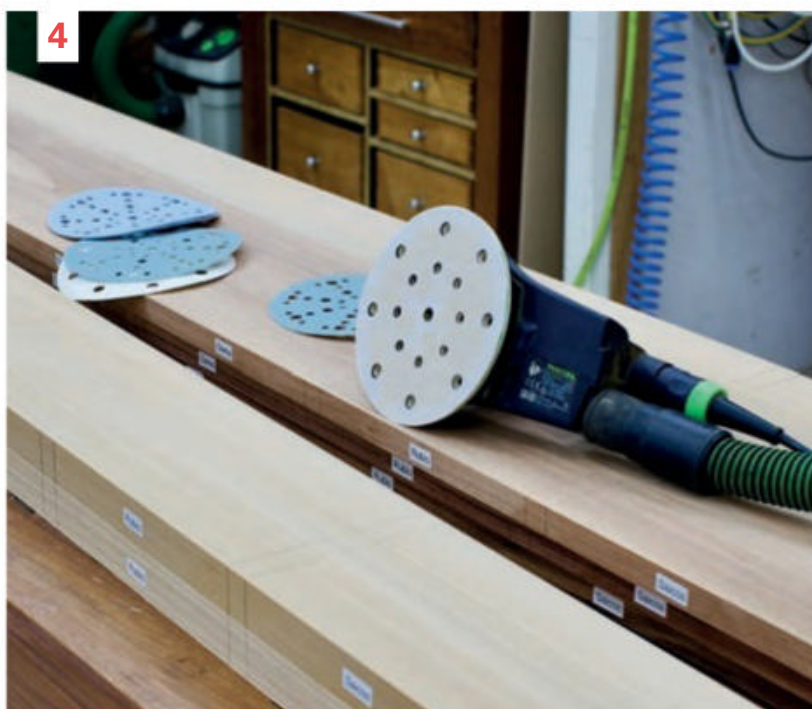
One of the attractions of hardwax oils is that they can be applied by cloth or pad. This not only takes the pressure out of finishing but a pad often yields

superior results. Options include rolling, brushing, floor brush/pad, cloth/pad (buffing) and spraying. I explored all options for furniture except spraying as my shop is not set up for that.

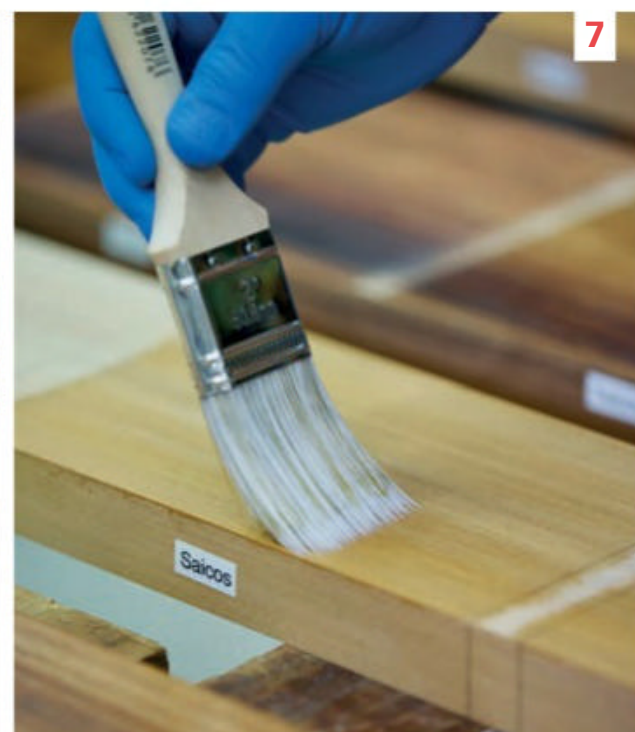
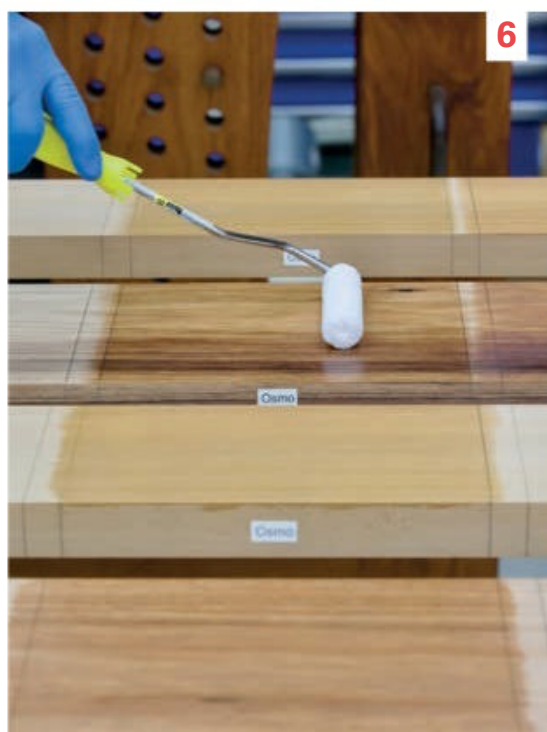
Microfibre rollers are effective and generic brands work just as well as proprietary versions. The 4mm nap gives a more even surface and is worth

the price. Load said rollers with a minimum of product and you're good to go. Brushing takes more practice. Where rollers are adept at laying down an even surface, brushed surfaces can be patchy. But brushes can reach areas that a roller cannot.

As for the cloth or pad, I had not previously used a polishing pad with



3. Stir more than you think. I stirred for 2 min. each (which is a long time)! Livos (pictured) is very thin.
4. All samples were sanded to the highest recommended grit levels, or to 240 if not specified.
5. Consumables used included microfibre rollers, brushes, lint-free cotton cloths, polishing pads and terry towelling.
6. The dexterity of 100mm rollers is preferred for all but the largest projects.
7. Take care to use the tips of a brush to lay down a minimum of product.



hardwax oils. Such pads are thick and stiff and I thought they would perform poorly. I was surprised by how well they distributed hardwax oil, surprised by how smooth the surface felt after the first coat, and surprised that the pad removed imperfections so easily before a second coat (where applicable).

Feast Watson Timber Floor Wax

Has the strongest smell but nothing too concerning (as it complies with volatile organic compound or VOC regulations). Rolled, brushed and buffed beautifully. After 90 minutes all surfaces looked even and smooth but still tacky. At three hours, buffed surfaces were touch dry (and the smoothest); all surfaces dry by five. Equal lightest in colour along with Fiddes, Odie's Oil and Osmo, but not quite 'water white'. Lovely satin sheen across all application methods with

even coverage (sanded to 240). This oil was the most forgiving.

Fiddes Hard Wax Oil

Pleasant odour but most viscous, except for Odie's Oil which also smells nicer. Rolled and brushed well. Buffing (against instructions) gave uneven results. Best to follow instructions, but not the 120–150 sanding preparation. The surface quality suffered, but no more than other products sanded to 150 (Saicos, Whittle Waxes; see Rubio Monocoat). Sanding scratches prominent. Touch dry inside two hours! Light in colour, and dried evenly in both species, with slightly more sheen. Fiddes is a standout, but sand to 240 grit next time.

Livos Kunos No. 243

Smell is more than acceptable. Any application option allowed,

but must have a 'wet oil film' for 15–20 minutes (I waited 15) before buffing. Product soaked in especially for blackwood. Rolled and brushed samples without buffing (against instructions) were uneven. Soak and buff instructions were superior. Sanding preparation (to 180) was good but sanding to 240 grit would be better. Somewhat darker result for both kauri and blackwood with only Rubio Monocoat darker again. Buffed surfaces felt and looked great.

Odie's Oil Universal Finish

The small jar, viscosity and amazing smell were points of difference. Worked product into surfaces using a pad, let sit for up to 60 minutes (I waited 50), then hard buffed with a cotton terry towel. Any sanding grit level permitted (I used 240). Consistency of spun honey, good



- 8. Look for polishing pads around 2,000 grit. I cut up generic pads from a local hardware store. They worked well and are cheaper than proprietary versions.
- 9. Some hardwax oils require no sanding between coats while others specify light abrasion.
- 10. Some samples dried evenly after 1 coat while others clearly needed a 2nd.
- 11. None offers a 'water white' finish, but there were differences between samples.
- 12, 13. Osmo buffed beautifully against instructions (photo 12) while Rubio Monocoat did not roll well also against instructions (photo 13). Experimentation ferreted out the best application methods. (Rubio Monocoat also buffed beautifully.)
- 14. Odie's Oil offered the best result in both kauri and blackwood.

for exterior use, good coverage and required only one coat (same as Rubio Monocoat). Blackwood was patchy initially but samples looked excellent after 24 hours. Equal lightest in colour, and ranked first for surface look and feel. But it's hard work.

Osmo Polyx-Oil No. 3032

Odour is fine. Rolling was better than brushing, especially with a dry roller to even out surfaces. It is applied too thick if the coat feels plasticky or you can dig your thumb nail into it after 24 hours. The first coat dried evenly, although the blackwood absorbed more. I reworked it several times (permitted up to 15 minutes). Buffing (against instructions) gave stellar results (sanded to 240). Buffed surfaces were immediately touch dry, while rolled and brushed took three (kauri) and five hours (blackwood). Equal lightest in colour.

Rubio Monocoat Plus 2C

Very low odour. This is the only two-part system here, but easy to mix. Applied by pad, let sit for up to 30 minutes (I waited 20), then removed with a white polishing pad. The pad buffed surfaces touch dry. Rolling (against instructions) gave uneven results. Properly buffed, this finish was exceptional in both species. Absolutely does not require a second coat. Samples were the darkest in colour, rich but a very matt look. Seemed smoother than Fiddes, Saicos and Whittle Waxes. Sand to 240 grit next time.

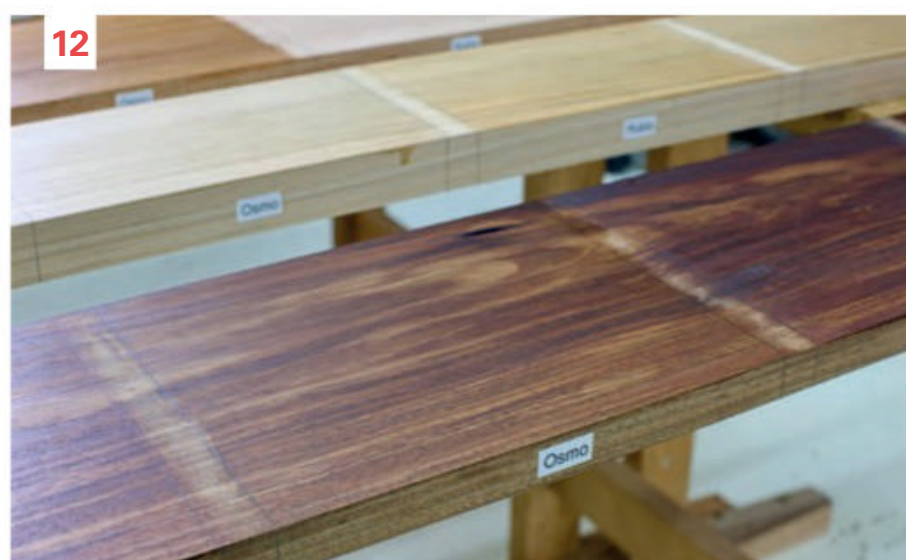
Saicos Premium Hardwax-Oil

Strong odour just behind Feast Watson. Rolling and brushing yielded acceptable results. There was a 'slippery' characteristic that flowed off the brush. The coarse preparation (150 grit) was disappointing like the others. First coat dried unevenly, especially

on blackwood. Surprisingly, the buffed surfaces (against instructions) were excellent, rivalling Rubio Monocoat (also sanded to 150). At two hours, rolled surfaces were mostly dry; by 3.5 hours all surfaces were dry. Marginally darker (same as Whittle Waxes).

Whittle Waxes Evolution Hardwax Oil

Low odour and pleasant. Can be rolled, brushed or buffed. Rolling and brushing results were good except for the 150 grit preparation (the 'or finer' is obviously important). Buffing yielded even better results, but it took some effort to work oil into surfaces. Samples dried evenly across kauri and blackwood, even after one coat (better than Saicos). Drying times were good (all samples were touch dry by three hours). Very light in colour, only slightly darker than the lightest here, and easily one of the better performers tested.



Aesthetics

Every one of these hardwax oils is capable of producing beautifully finished surfaces. However, the various application methods influenced the results. Buffed surfaces were more attractive than rolled and brushed counterparts, with a more even sheen and a smoother feel. But keep in mind that buffed surfaces sometimes fared less well in the durability tests (see below). So there are trade-offs to consider.

All products tested changed the colour of kauri and blackwood. They are not as 'water white' as some other options. If a light colour is important, go for Feast Watson, Fiddes, Odie's Oil and Osmo. For a richer, more 'oiled' look, Livos and Rubio Monocoat are better choices.

Some samples looked and felt better than others, although there was an

inconsistency that made it difficult to draw meaningful conclusions. This might have been due to the vagaries of timber grain, or even application errors on my part. Between you and me, I think some of these finishes needed a third coat. Nevertheless, Saicos did not provide an even result across all permitted application methods, whereas Feast Watson and Whittle Waxes were perfectly uniform. Fiddes was nearly as good and offered slightly more sheen.

Durability tests

Durability testing included resistance to water, red wine, solvent (acetone) and abrasion (scratch test).

Water resistance is of relative importance since dining tables need more protection than jewellery boxes. I applied a small puddle of water on each sample, waited 24 hours, thoroughly dried the surfaces and

visually examined the results. All samples beaded beautifully. However, I was surprised by the general susceptibility to water damage.

Only Rubio Monocoat was completely unaffected, in both kauri and blackwood. There were no traces of surface markings and no blushing (water haze in the finish). While attractive for other reasons, Feast Watson did not have good water resistance and all samples performed poorly. Livos and Saicos samples did not fare well either.

Rolled and brushed samples were more water resistant than buffed across all products, with the noticeable exceptions of Odie's Oil and Rubio Monocoat (both buffed). They were the best performers overall, along with Fiddes.

Red wine resistance testing followed a similar pattern. I subjected samples to

TABLE 2: DURABILITY

BRAND	Feast Watson	Fiddes	Livos	Odie's Oil	Osmo	Rubio Monocoat	Saicos	Whittle Waxes
WATER RESISTANCE	poor	outstanding	good	outstanding	excellent	outstanding	good	excellent
RED WINE RESISTANCE	good	excellent	good	outstanding	excellent	excellent	excellent	excellent
ACETONE RESISTANCE	outstanding	outstanding	good	outstanding	poor	outstanding	excellent	excellent
ABRASION RESISTANCE	good	outstanding	poor	good	poor	outstanding	excellent	excellent

a small amount of red wine, and waited 24 hours. The results were boring as virtually all rolled and brushed samples were unaffected. There was some variability in the buffed surfaces with minor discoloration especially for Feast Watson and Livos in blackwood samples. Intriguingly, the red wine yellowed all buffed kauri samples except Odie's Oil.

Solvent resistance testing was with acetone (a strong solvent). It evaporated quickly so I maintained a small puddle on each sample for 15 minutes. After 24 hours (the acetone had evaporated long since), I cleaned the samples and examined the results. Feast Watson, Fiddes, Odie's Oil and Rubio Monocoat were unaffected across all samples while Saicos and Whittle Waxes barely exhibited any markings. However, acetone ruined all Livos and Osmo samples. The test

areas were quite sticky with Livos performing marginally better.

Scratch resistance testing was a measure of relative surface hardness. First, I mounted 120 grit sandpaper to my random orbital sander, attached a string, and dragged it along one board. I did not turn on the sander. The results were surprising: not a single scratch.

So I took a 10kg cast-iron weight, attached 60 grit sandpaper and used string to drag it along. I declogged the sandpaper as necessary and went over the boards twice. The surface damage was extensive.

There was no appreciable difference between kauri (softer) and blackwood (harder), demonstrating that substrate hardness was not in play. It was enlightening to sight down a single board and see how scratches changed

from sample to sample. Livos and Osmo provided the least resistance while Rubio Monocoat performed the best. That said, Fiddes was close behind Rubio Monocoat, followed by Whittle Waxes and Saicos.

Ingredients

Most (but not all) manufacturers provide little information about the ingredients and their proportions. Understandably, 'natural' contents are emphasised the most. Hardwax oils are well-known for being food and toy safe. Plus, they are low in volatile organic compounds (VOCs), which are harmful for both user and environment.

It is useful to remember that hardwax oils contain significant levels of solvents. Indeed, solvents feature prominently in the safety data sheets (SDS). Most of these are VOC-exempt and therefore not subject to the regulations so often



referenced. This is because they are de-aromatised and generally safer. However, they are still strong solvents. All but two of the hardwax oils included here contain 30–60% solvents by weight! For sure, heed the safety warnings and use gloves at a minimum and also a respirator if not in a well-ventilated area.

The exceptions are Odie's Oil (<2%) and Rubio Monocoat (0%). Odie's Oil does not require any personal protective equipment (PPE), but Rubio Monocoat requires the most care because of isocyanates in component B. Isocyanates are particularly dangerous and wearing appropriate PPE is necessary.

Drying test

In my quest to understand the behaviour of hardwax oils, and why they are all so different despite containing a 'blend of oils and waxes', I turned to *Understanding Wood Finishing* by Bob Flexner (3rd edition 2021).

The conundrum involves understanding how these finishes cure quickly. The presence of solvents is a clue. Unmodified oils and waxes do not need solvents to be workable because they dry slowly. But 'polymerised' oils (modified oils) and 'varnishes' (oil/resin blend) dry very quickly and therefore need solvents. Livos says it contains both and is the only product here to share this.

A drying test helped determine whether these hardwax oils contained polymerised oil or resin (or both). In my week-long test, five hardwax oils dried smooth and hard (or relatively hard) within 48 hours, which means they don't have much unmodified oil in them (if any) and must contain polymerised oil or resin or both (Feast Watson, Fiddes, Osmo, Saicos and Whittle Waxes). If they contained only unmodified oils and waxes, they would have dried more slowly and wrinkly.

Livos and Rubio Monocoat did dry wrinkly so they contain some unmodified oil. But while Livos contains solvents, Rubio Monocoat



18



19

15. I used a large plastic syringe to apply 3mL each of water, red wine and acetone to all samples.
- 16, 17. Water damage ranged from surface markings that could not be removed to blushing and discolouration. Most of the buffed kauri samples suffered a yellowing effect from the red wine.
18. My scratch test demonstrated the relative hardness of cured surfaces.
19. Hardwax oils that dried hard and smooth contain polymerised oil or resin (or both). Those that dried wrinkly contain some unmodified oil.

does not. And yet both are darker in colour which indicates the presence of resins. Whether Rubio Monocoat contains polymerised oil or resin (or both) is hard to know for sure.

Odie's Oil did not dry/cure at all. Even after seven days the 'puddle' was still sticky. Clearly it contains no polymerised oil or resin, which squares with its low solvent content.

Summary

There is no one 'best' hardwax oil. Each product has strengths and weaknesses. A selection of one over another might be due to price, ease of application, aesthetic qualities, or perhaps a standout result in one of the durability tests.

It is hard to compare relative value and coverage, partly because pack

sizes differ and partly because some of these finishes go a long way. Applying a second coat (where applicable) is easy. So are making spot-repairs or renewing a finish down the track.

Hardwax oil is the finish of choice for nearly everything I make. I hope this review helps you choose which one you might use for your next project.

Photos: David Luckensmeyer

Odie's Oil and Rubio Monocoat samples provided by Hammer Roo, see www.hammerroo.com.au



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The Chair: A Story of Design

David Haig gives his impressions of an exhibition that highlighted the history of chairmaking in New Zealand, and reflects on the emergence of the studio furniture movement, and some of the politics attached to it.

At the end of last year, Object Space Gallery in Auckland put together 'The Chair: A Story of Design and Making in Aotearoa', an exhibition of some 110 different chairs, all made in New Zealand, and spanning 170 years. As it happened a couple of my chairs were included.

It was a huge number of pieces to try and accommodate in what is quite a small gallery space, so it was a very ambitious undertaking by curator and Gallery Director Kim Paton and her team, but everything was meticulously well handled and organised.

Part of my anticipation on arriving at the gallery on opening night in December 2023, was that I'd be meeting up with a group of fellow makers from the heady days of the 1980s and 90s, some of whom I had not seen since in 25 years. But there were also pieces from students I'd taught or known within the last few years, plus family and friends as well so along with a huge crowd, lots of drink and good food, it was all a bit overwhelming, as opening nights often are.

On entering the gallery, the first impression was of a sort of chair cacophony, an undifferentiated storage space, like

a warehouse for chairs of every imaginable shape, kind and character, placed pretty much randomly cheek by jowl.

The main gallery space had a central dais crowded with chairs, and then on two sides, chairs were placed on raised platforms up to three high, so close in places that a front chair would partially block the view of one behind it, and almost touching. I'd never seen an exhibition like it. I'd expected the usual art gallery format of pieces set respectfully apart so that each piece could be viewed and considered individually. The fact that both of my own chairs were set up at the back on the top-most tier, almost touching other quite unrelated chairs on either side, was more than a little unsettling, to the point where I was almost indignant!

However, looking more closely, every single chair had a neat descriptive card, with a few background details about each maker to place them in a context. So, there was a treasure trove of information, if you gave it the time to look, and could focus on one piece at a time.

Some of the chairs were magnificent examples too, unusual in form and beautifully crafted or in some cases extensively carved but there were quite a few that were



very pedestrian, cheap mass-produced chairs, tubular steel and plywood, or lumpily upholstered in dull fabrics of the 1950s or 60s, that sat oddly with their beautifully crafted and hand-detailed immediate neighbours.

In another interpretation though, it could be said to be truly democratic, all the chairs shared the space and none were given special prominence. One could imagine a contemporary play, where each spoke in turn, and the proud and the great had to sit next to the poor and usually unnoticed, and accept that all had equal rights to be seen and heard. I liked this idea, and on later visits started to appreciate the unusual energy that comes from a densely packed proximity of similarly purposed objects. If 'chairness' were a platonic concept, you surely had the essence of chairness displayed before you!

However, if you had no idea of antecedents or the history of furniture design, I think the exhibition by itself would have been pretty overwhelming. But there was an inspired decision taken by the very energetic and industrious team that organised the whole thing to produce a fully developed book as well.

The Chair, a story of design and making in Aotearoa is a beautifully designed book and contains a lively and well researched account of how these NZ made chairs came to be, and with a great deal of personal reminiscence. It places them within their broad historical context – C19th Arts and Crafts, early and late Modernism, Memphis and Post-modernism, and then whatever 'ism' we are at today.

Every chair in the book is presented on adjacent pages, text and image, arranged chronologically. A range of excellent writers and researchers give each chair a rounded description with a brief background story or two about its context and maker. Even the few 'maker unknown' chairs were teasingly sleuthed to give them their context and place.

I think in all honesty though you would be hard pressed to see much in the way of connecting threads between



Above: Carin Wilson, *Kura Kōwhatu*, 1991. Photo: Sam Hartnett



Left: Stephane Rondel, Cat Chair, 1987, collection of and photograph courtesy of Auckland War Memorial Museum Tāmaki Paenga Hira.

Below: Exhibition opening night at Objectspace, Tāmaki Makaurau, Auckland. Photo: Jinki Cambroner





This page: Installation view of 'The Chair: a story of design and making in Aotearoa' at Objectspace, Tāmaki Makaurau Auckland. *Photo: Sam Hartnett*

Right: Garth Chester, *Curvese Chair*, 1944, collection of Synnott Family. *Photo: Sam Hartnett*

Far right: Katy Wallace, *Someone Else's Chair*, 2012, courtesy of Katy Wallace. *Photo: Brennan Thomas*

the huge range of chairs presented, though New Zealand/Aotearoa (and Australia) work hard to locate defining characteristics of their respective cultures and societies.

Maori inspired influences are scarce, the carved decorative flourishes in the earlier Arts and Crafts examples mainly reference English or European design motifs. Not until the 1990s are there a few distinctly Maori references, as in the *Kura Kowhatu* armchair by Carin Wilson. Polynesian influences are not plentiful either, the *waka* (canoe) seat shape in the *Pacific Lashed chair* by David Trubridge being prominent (and possibly my favourite in the show.) As Kim Paton said in the book, New Zealand chairmakers mostly followed overseas design movements rather late, and in industrial design terms with pared-down versions.

Having said that, there are examples of chairs that are wonderfully inventive and boldly original, including the first chair in the world manufactured from a single sheet of ply, the *Curvesse chair* by Garth Chester from 1944. It was a great example of applied home-grown mechanical ingenuity (a bit like Bert Monroe's world speed record-breaking motorbike) which in Europe or America would probably have attracted serious capital backing and become far more industrially sophisticated. Even so, about 500 were built over ten years.

Not surprisingly, a few prominent 'industrial' designers of the early Modernist and Mid-Century Modern movements were European or English who emigrated to New Zealand during or shortly after WWII – Ernst Plischke, Peder Hansen and John Crichton all trained in their home countries. Their successes had powerful influences on the design ferment though, also evident in other areas such as ceramics, glass and

architecture, that was undoubtedly building in New Zealand in the 60s and 70s. And then came the 80s!

This is where the exhibits and their stories became personal, because I was a bit player in what emerged as a vigorous flowering of creative energy in the furniture design and making field. Kim Paton, the chief curator, acknowledged this and invited a group of makers from 'back in the day' to be a part of a couple of panel discussions to help tease out the cross currents of those quite tumultuous years.

The interesting and novel development was the emergence of what has become known as 'studio furniture', a throw-back to an idealised Arts and Crafts movement, where the individual became the source of both the design and the making, often working alone. This has proved to be a very durable aspiration, more of a dream really, but in practice one that few have managed to hold together for very long.

Most makers who go down this path find after a few years they are struggling to bring in enough money to pay the bills, and to find clients ready to pay the prices associated with one-off or very limited batch-work. I'm one of a few who have followed this course for a whole career, and that was largely on the back of one very successful design, an incredible partner/wife, and some huge good luck with small but significant dollops of financial aid along the way.

So, as in Australia, but a bit later in New Zealand, by the early 1980s groups of young aspiring makers who had all read Jim Krenov's books, and followed *Fine Woodworking* magazine assiduously, started getting together and forming associations.





Left to right from above:

Chris Grattan, *Chair*, 1996, collection of John McCabe. 'This for me was the standout piece in a 1998 furniture exhibition called Framed at the Dowse Art Museum in Lower Hutt, Wellington. It was strangely satisfying and quite unlike anything I had seen before.'

Marilyn Sainty, *Cocktail Chair*, original 1988; this version 2020, courtesy of Marilyn Sainty.

Marc Zuckerman, *Chopstick Chair*, 2000, courtesy of Mark Zuckerman.

Whalebone Chair, laser printed model in white resin by 3Duke Engineering. The original pre-1880s chair (collection of Samuel Holloway and Michael Lett) has a whalebone vertebrae with three whalebone ribs attached and was too fragile to exhibit.

David Trubridge, *Pacific Lashed Chair*, 1989, courtesy of David Trubridge. 'David sailed across the Pacific to get to New Zealand with his family in the early 1980s, and was deeply affected by Polynesian seafaring canoe-building traditions. The idea of lashing rather than gluing and fixing joint areas was incorporated into this elegant chair, combining with quiet mastery the best of so many influences.'

Humphrey Ikin, *Black Stave Chair*, original 1992, this version 2010, private collection. Of all the chair designers in New Zealand, Ikin has had the most acclaim. He developed a minimalist aesthetic, often using just plywood screwed together and painted, but capturing the attention of the New Zealand art and design world like no-one else.

Photos: Sam Hartnett

One that emerged in 1983 in Christchurch was just for the purpose of staging an annual show called The Alternative Furniture Show. I joined the following year and became one of the regulars for the next dozen years.

Then in 1987, another group, based in Auckland, started putting on regular shows, but this time it was called Artiture and in many ways was a reaction against the perceived 'uptightness' of the makers of highly crafted works that respected classic woodworking techniques.

Freedom of expression was the buzz. A handful of makers crossed boundaries of course, David Trubridge and Kazu Nakagawa for instance, who produced highly original as well as beautifully crafted pieces. I was firmly in the more traditional camp back then, and the nature of the premise of Artiture was bound to lead to conflict sooner or later.

Funnily enough, it was a very prominent UK-Australian maker, George Ingham, head of the Wood Workshop at Canberra School of Art, ANU, who lit the spark. He was invited to come and select for the first nation-wide furniture exhibition curated by Justine Olsen in 1988.

Seventy-five pieces were submitted, 24 selected, and he rejected almost the entire offering from Artiture members. Several very avant-garde works (like Gary Hunt's *Blade-Runner* steel and aluminium chair and Stephane Rodel's copper plated steel *Cat chair*) were selected but Artiture, headed by Carin Wilson, was not going to take rejection lying down, and promptly put on a *Salon des Refuses* exhibition, copying the famous Impressionist coup in Paris in 1863.

Their show, along with clever publicity, attempted to skewer the formal New Zealand Contemporary Furniture



exhibition selected by Ingham, and paint it as boringly restrained and inhibited. I was shocked and furious, (my own insecurities being severely confronted) and the ripples from that fall-out lingered, and for years the very word Artiture raised my hackles! In retrospect that was unfair as the Artiture shows of the 90s helped raise the profile of furniture making as an authentic artistic endeavour.

Marilyn Sainty's super-minimalist *Cocktail chair* is a striking example, still fresh even after 35 years. But there are examples of chairs in this exhibition that moved even further beyond the orbit of function, and are unashamedly art pieces, using the chair form as a metaphor or starting point for different explorations or messages. Katy Wallace's upcycled Thonet café chair, titled *Someone Else's Chair*, where the missing front legs have been replaced with bentwood handled walking-sticks, is a delightful example.

But to revert to what one might call 'serious' chairs, how are they to be fairly assessed? Really it comes down to a balancing act between four principal considerations, which can be expressed as four E's...namely: Engineering, Ergonomics, Economics and (a)Esthetics.

Danish designers like Hans Wegner, particularly in the 1950s and 60s, seemed to approach most closely the ideal of those four elements in perfect balance. They used sophisticated efficient commercial workshops, which kept costs down. They engineered the chairs for strength and durability using only perfectly clean high quality timbers like cherry, rosewood and teak. Good ergonomics were perfected through multiple prototyping exercises and finally they also harnessed the power of very sophisticated marketing. All this combined with the sheer genius of inspired design and those chairmakers have a place in the pantheon of true greatness in this field.

I don't think New Zealand has ever produced an equivalent, but not many countries have. And Denmark focused on Furniture much as New Zealand focused on Rugby, and both have shown the power of focus that can achieve international acclaim in certain fields for small countries.

So, this exhibition, whilst not a knock-out in terms of classic chair content, was an unashamedly honest look at, and record of, what has been made in this country over 170 years in this field. Like all honest portrayals of human endeavour it had the good, the bad (or boring) and the ugly, but to say which was which was not its intent.

Further, it is rather astounding that even with 110 chairs, even I could easily think of a further 40 or 50 examples from makers unrepresented, as well as others from makers who were. But there were more than enough to make this exhibition special and a seminal landmark and it was unquestionably an absorbing experience. Fullest thanks to Object Space Gallery, Kim Paton the Director and her indefatigable team for such a marathon undertaking.

The Chair: A story of design and making in Aotearoa was curated by Kim Paton and shown 2 December 2023 – 3 March 2024 at Objectspace Gallery, Tāmaki Makaurau Auckland, New Zealand. A same-titled book tells the story of design and making in Aotearoa in the words of 26 writers who share their histories and unique perspectives. Available at Objectspace galleries or online via <https://www.objectspace.org.nz/>



David Haig DMNZ is an award winning New Zealand furniture designer maker who teaches woodworking at the Centre for Fine Woodworking in Nelson, NZ and at the Centre for Furniture Craftsmanship in Maine, USA.

See <http://davidhaig.co.nz/>



One For The Road

Florian Meigel delivers a masterclass in templating as he shows how to build a high performance plywood longboard with basic equipment.

Surely, I'm not the only one who grew up with a yearning for adventure, nature and speed? I grew up in the rural south of Bavaria, Germany, and spent every day in the surrounding forests and mountains in search of freedom and adventure. In my old age, I'll look back and shake my head, but hopefully with fond memories.

The connection between nature and my profession is a daily companion for me. Whether in everyday urban life or on the open road, a longboard offers a unique opportunity to experience this freedom. I am happy to take you on an escapade – making a longboard in a minimalist workshop where I have learned how little it takes to achieve wonderful results with the joy of experimentation.

Work or sport?

What began in early childhood as simple handicrafts, I underpinned with further studies as a master carpenter and state-certified interior and object designer. Today, I work full-time as a planner and designer in interior architecture and product development. After my apprenticeship, I was lucky enough to work my way through several skills competitions to the World Skills Championships, where I was able to prove my trade in front of a global audience in 2019.

The competition is a sporting discipline in itself which requires months of training. It demands maximum speed and precision over

four days with just a few hand tools and machines on a 15m² workspace. This time influenced how I still like to work today: with hand tools, in the smallest of spaces and with attention to detail – not least because I simply can't afford a larger workshop and expensive machines. The woodworking hobby is and remains as one of the more expensive luxury sports for me!

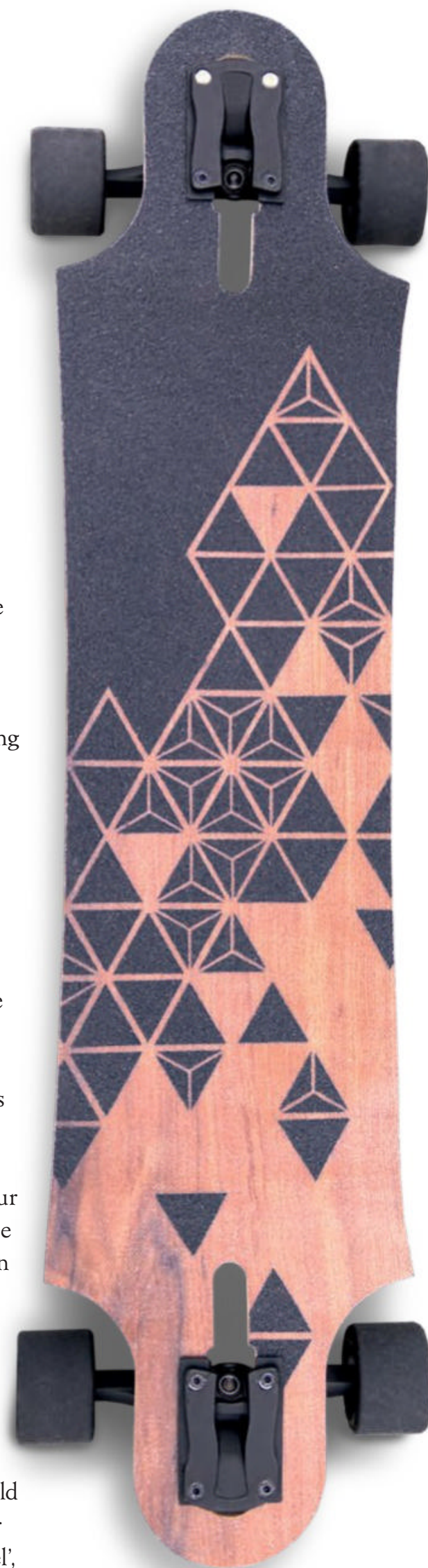
Longboard design

A longboard is a skateboard variant which offers more stability at higher speeds and consequently has to resist more force. It doesn't just have to look good; it has to work and be customised. Your weight, height and a sense of balance are considerations when you form the veneer and fibreglass. For design motivation, imagine the deck breaking under your feet at 50kph... I'll now show you one of many ways to make a longboard in a moderately equipped workshop.

It's all about the templates

My way is to combine simple tools with templates to make other templates from which a two-part mould is made. In principle, we will press our own 'high-performance plywood panel', which is formed in two orientations.

For this board, I chose a stiff double drop deck and top-mounted trucks so it can be used for downhill and freeride. The mounting position of the trucks and the downward curved shape of the deck shift the rider further towards the ground for more riding stability.



Main: Florian Meigel with the finished longboard.

Above: Customised dimensions, top mounted trucks (wheel assemblies) and grip-tape applied in a decorative motif feature on the longboard.

Photos: Maresa Eger Fotografie

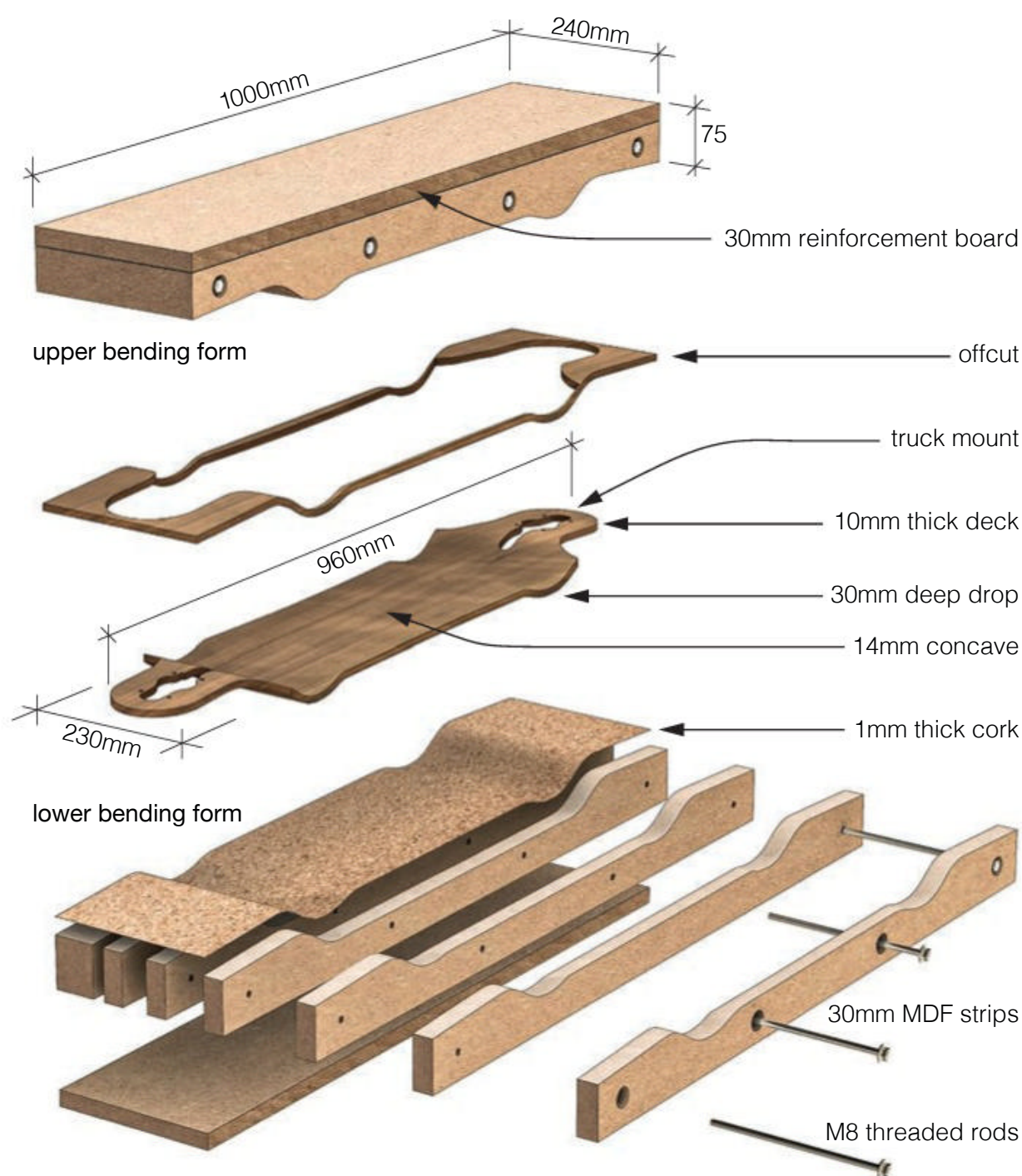


Fig.1 Arrangement, not to scale

The board is also designed to be particularly stiff, as too much flexibility with an already low ground clearance will allow the board to scrape the ground from time to time when riding. Especially when building your first longboard, the motto is: it's better to go for a thicker and more stable board than one that is too thin and flexible. That's why I use harder wood and a fibreglass reinforcement.

For a self-built and designed longboard, stiffness and form can be as needed. Here they are not based on measurements, as these are too individual. With my parameters of 1.75m height and 80kg weight, a deck dimension of 960 × 230mm is a comfortable reference point (**fig.1**).

Start with a sketch

Our project starts with a 3D drawing in CAD or in the imagination, as

well as MDF strips that form the raw shape of our longboard as a block. The advantage here is that the boards can be processed repeatedly and with simple standard tools. Machining the large block would only be possible with greater effort. Along with the 'drop' (longitudinal bend), there is a 'concave' (crosswise bend).

Contours without CNC

The drop can simply be milled on each board strip, however the concave is produced when they are joined. The template will be the length of the deck with 20mm extra on both sides. The width is the sum of the material thicknesses and should not be narrower than the finished board width with 5mm added both sides (**photo 1**).

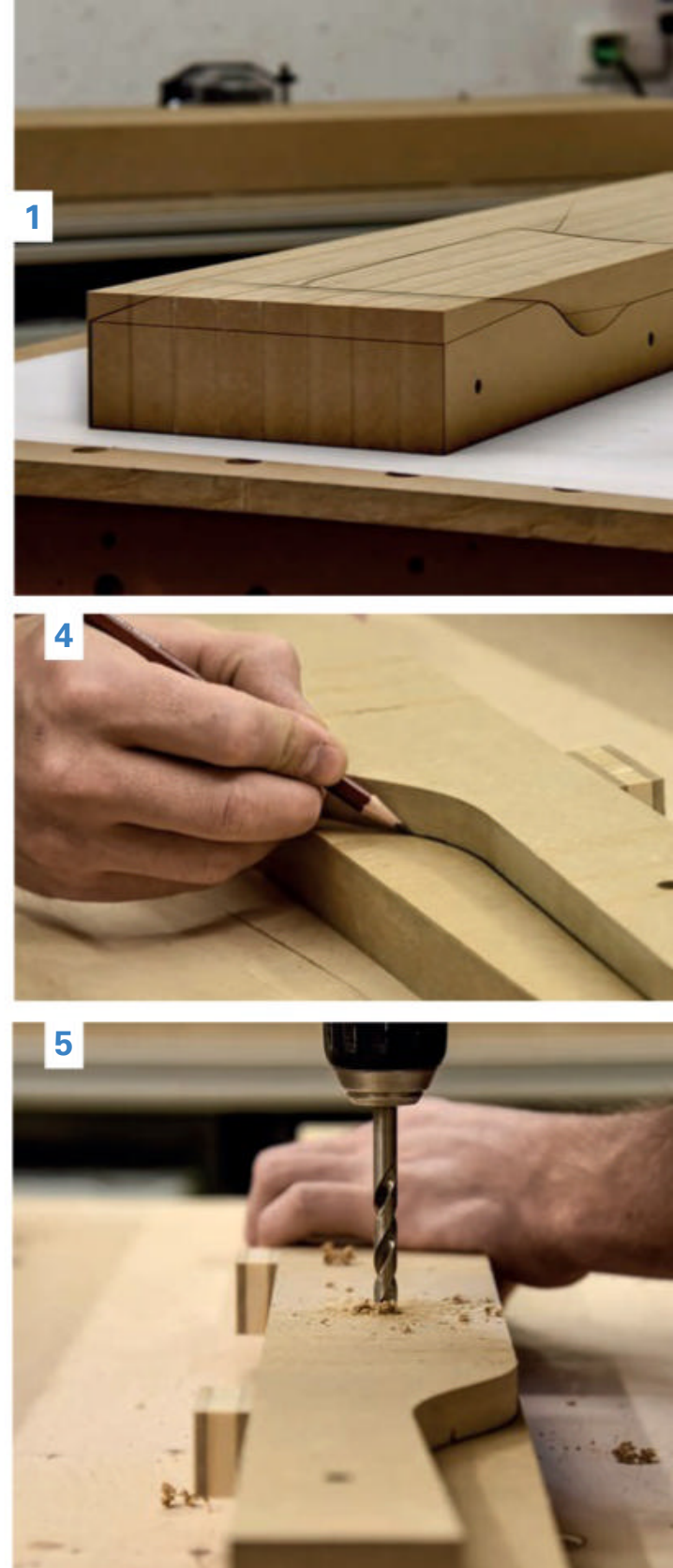
There are two ways to achieve clean cut parts without CNC technology. For both, a master template is first

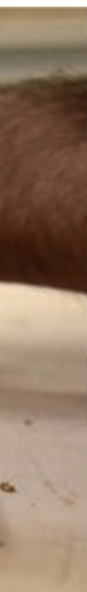
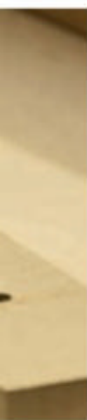
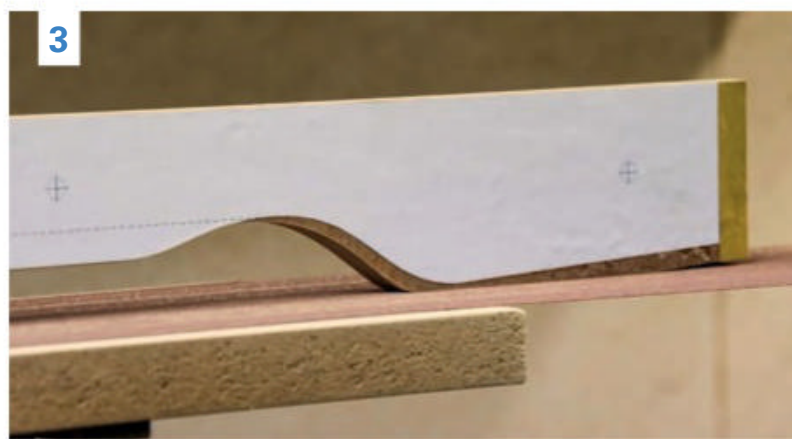
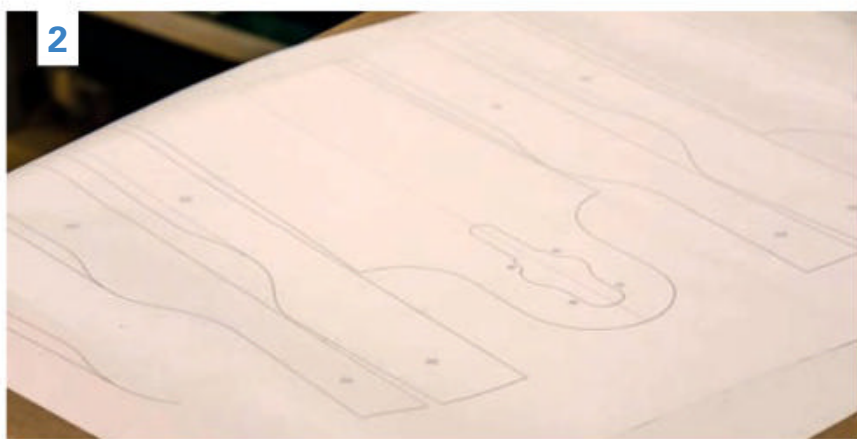
made with which other parts can be machined quickly and accurately. The template is a critical part of the process and can take longer to make than the actual product.

Templates for templates

One option is to glue printed shapes onto MDF and sand to the markings (**photos 2, 3**). One fact should not be ignored – circular radii, such as those on the drop of the longboard, cannot be milled identically on both form templates. With the material that is pressed between the moulds and later forms the deck, the radii will taper and increase by exactly the thickness of the moulded part!

Small stop blocks on the sides of the template help with quick positioning on the board strips. The shape is then transferred and roughly sawn out. The template also specifies the position for





1. Template made from MDF strips.
2. Paper printouts of the templates.
3. Sand to the markings.
4. Transferring the shapes.
5. Drill holes to help with positioning.
6. Rough sawing the shaped parts.
7. Position the board strips for cutting with the master template.
8. Cutting the board strips on the router table.
9. Layered board strips with finished drop profile.
10. Threaded rods for joining the board strips.
11. Router template with round guides and higher-mounted board strips.
12. Cutting result concave.

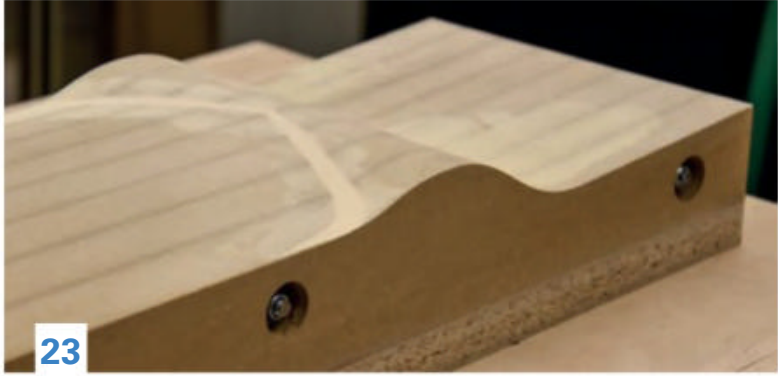
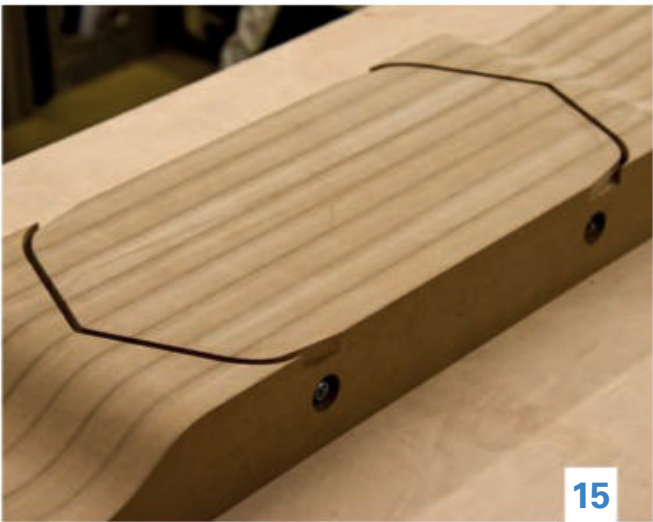
four drilling holes, which are initially used to hold the shape in place when cutting and will be used again later (**photos 4–7**).

A shop-made router table with a powerful router has proved its worth in my small workshop over the last few years. Ergonomic working, better dust extraction and the lower noise level compared to stationary machines make working in the late evening hours pleasant (**photo 8**). I can enjoy my woodworking hobby

mainly at night. My workshop is in a basement with only a small window to tell me if it's day or night and I quickly lose track of time during 'meditative' work.

The cut and layered strips of board give an idea of the longboard shape after a short amount of work. If you are observant, you can see that the two shapes cannot yet be stacked inside each other (**photo 9**). To work out the concave along the width after clamping the individual parts together





13.

Curve cutting as an alternative method for producing templates.
14.

Rounded intersection between drop and concave.
- 15, 16.

Groove cutting at the intersecting edge between drop and concave.
17.

Double-sided tape used to attach contour template for the drop.
18.

Cut the drop step-by-step with the router and a guide ring cutter.
19.

Cleaning up areas that can't be routed.
20.

Finished drop with temporary groove as a boundary.
21.

Shaping the concave with a second guide rail template.
22.

Detail during concave routing with the temporary groove as a boundary.
23.

Filling and sanding the temporary groove flush.
24.

Adding cork to compensate for small imperfections.
26.

Reinforce board with pre-marked locations for the clamps.
26.

Core layout.
27.

Cutting the fibreglass fabric.
28.

Preparing for glue-up.
29.

Roll glue evenly with a foam roller. Fibreglass absorbs more glue than veneer.
30.

Cling film on pressing surfaces prevents resin from sticking.

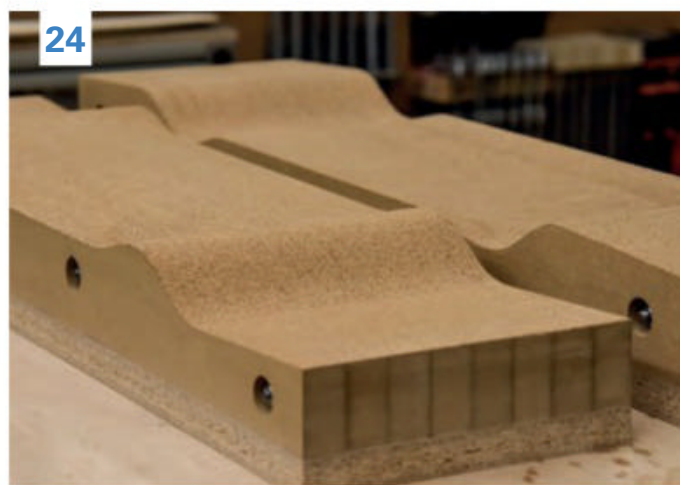
with threaded rods (**photo 10**), we need extra material on both forms.

For the concave, we need another template. The idea is simple. The concave is a segment of a circle routed off the MDF block with a large groove cutter. I attach round guides which run on two higher-mounted board strips (**photos 11, 12**). The round guides can easily be made using a router and curve template, as an alternative method to printing out and sanding the form templates (**photo 13**).

I also calculated the radius in CAD. When planning, this follows the same principle as the drop. Guide radius = actual radius concave + distance of the higher mounted board strips to the upper edge of the mold template. Clean work is immediately recognisable in when the concave is flush with the lowest point of the drop.

The intersecting edge between the drop and the concave is rounded for a smoother transition (**photo 14**) to complete the first mould template. However, with very tight radii where the thickness of the finished longboard has not been taken into account, an exact negative cannot distribute the pressure evenly over the entire pressing surface, which often results in faulty bonding and predetermined breaking points. Another gluing option is using a vacuum press, which only requires the lower part of the mould but the pressure is often too low. A lower and upper template ensures the best possible functionality.

A challenge that arises when producing the upper negative template is the intersecting edge between the rounding of the drop and the concave. On the first side of the lower mould, this was a protruding edge that could simply be sanded round. Now there would be a recessed edge that would be difficult to finish. A quick solution is to simply cut it

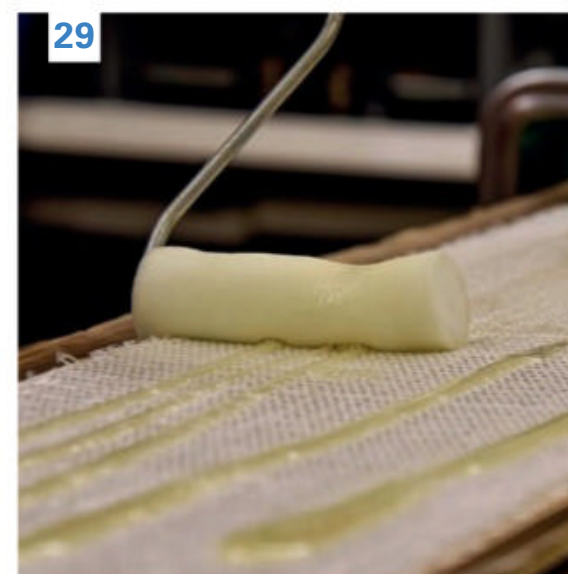


out generously with a groove cutter to the depth of the finished concave (**photos 15, 16**).

This results in a clear separation between the drop rounding lengthwise and the concave. This can then be worked on without any problems, starting with the drop. I also like to use a router with a template here and work my way forward step by step (**photos 17, 18**). What cannot be reached by the router is reworked by hand (**photos 19, 20**).

For me, the beauty of using only hand tools is the direct contact with the workpiece and the feeling of having constant control over every step of the process. Although stationary, digital machines and CNC-supported machining processes speed up a lot of work, increasingly they also take away intellectual work.

At this point, the procedure is identical to the previous one and the concave is shaped with the guide template. I also adjusted the radius of the guide rails to match the thickness of the finished longboard (**photos 21, 22**). The temporary grooves on the cut edge between the drop and concave are closed with a two-part filler and sanded flush (**photo 23**).





31



32



33

- 31. Apply clamping pressure from the centre out.
- 32. Opening the mould after 48 hours.
- 33. Find centre and align longboard template.
- 34. Rough trimming with offset to the template.
- 35. Flush routing.
- 36. Sanded longboard with finished edge.

- 37. Fibreglass on top protects surfaces.
- 38. Trimming the overlapping material.
- 39. Cutting the truck mounting slot.
- 40. Mounting the tracks and wheels.
- 41. Applying the grip-tape in a kumiko pattern.



34



35

To cover small imperfections, 1mm thick cork can be applied to the inner surfaces of the templates. A board is attached to both template parts so the pressure of the clamps is well distributed later. The templates are now finished (**photos 24, 25**).

Determining the thickness

After countless attempts to calculate the material thickness, I arrived at this method: just give it a try! Get

some commercially available veneer plywood boards in thicknesses of 9, 12 and 15mm. Cut these roughly to the finished longboard dimensions. Place them on blocks that are the same distance apart as the trucks will be later. Now you can stand on the board and simulate the skating movements by bouncing lightly. The thickness of the board, which provides the right amount of strength, serves as a reference for the later thickness of the board.

Arranging the layers

When building up the layers the underside must be tensile; the middle section should not twist easily and the top should be able to be compressed as little as possible. This resulted in a 10mm thick core for my board, which is to be made from a long-fibre wood. Here I used maple (**photo 26**).

To achieve the best possible stiffness, the central veneer layer is rotated 90°. To do this, the veneer must be glued in width to achieve the required size.

Longboards may be made entirely of wood, but I prefer to add fibreglass. I use 700g/m² thick fibreglass fabric top and bottom with a few layers of 0.6mm thick maple veneer in lengthwise orientation. The top seen veneer layers here are smoked pear wood. In the middle, cross and lengthwise layers of maple veneer alternate. A further layer of glass fibre is glued in there.

Prepare for glue-up

For all further work on the board, I use thin gloves, safety glasses and, if necessary, a face mask, as the fine glass fibres are highly irritating to the skin. To prevent the threads from coming



Above: From a small workshop with basic equipment, Florian Meigel shows how to mould your own plywood for a high performance longboard.



loose when cutting the fibreglass, I fix them with adhesive tape (**photo 27**).

All surfaces must be clean and free of dust and grease, otherwise the individual layers will separate from each other.

You can now get everything ready for gluing (**photo 28**). The layers are sorted in advance, clamps prepared and their positions are marked on the template. This will ensure a well-structured glue-up and even pressure.

I use a two-part epoxy multi-purpose system with a processing time of 25 minutes and follow the manufacturer's instructions (**photo 29**). Cling film on the mould surfaces prevents the resin from sticking (**photo 30**).

Since the actual 'curve length' of the longboard is longer than the template, the individual layers will pull back into the template with increasing pressure. It is therefore important to apply clamps first in the middle and then evenly outwards (**photo 31**).

If possible, leave the resin to harden for two days before the exciting moment of opening (**photo 32**). The

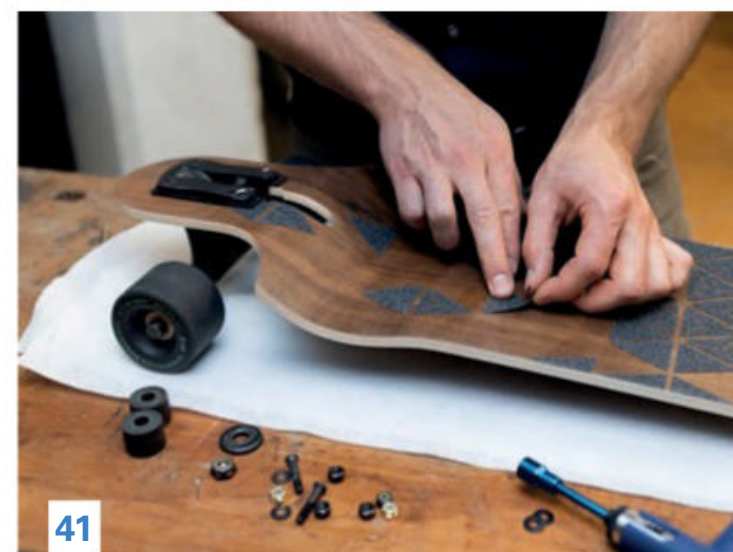
workpiece should now be handled with care, as some of the resin-soaked fibreglass edges are very sharp.

Post-processing

Use the gluing template to find the centre of the board. As for the first template parts, I now sand a template in the shape of the longboard. This is then screwed onto the board. The holes used for this are later used later to mount the trucks (**photo 33**). Now the rough overhang is cut off a little oversize and then routed flush along the template (**photos 34, 35, 36**).

A final protective layer of thin fibreglass fabric is applied to the board and trimmed (**photo 37, 38**). At this point, the surfaces are pre-sanded. The resin for this has a very short curing time and adheres directly to the surface. After the resin has hardened, the rougher feel of the fibreglass and the natural structure of the pear veneer remain. Before finishing the surface with an elastic boat varnish, I cut the slot for the selected truck mounting (**photo 39**).

All that's missing now is the finishing touch that makes the longboard unique. Using sandpaper-like



griptape, there are no limits to the design of the pattern that can now be applied and will also give a good grip (**photos 40, 41**).

About a week later, the longboard is finally ready and looking forward to its first test ride. No matter how many of these I build, the first ride is always something very special.

Photos and diagram: Florian Meigel

Florian Meigel's Chaise Longue Brilliance with Wall Lamp was the winning World category entry for 2023 Maker of the Year awards. Florian @_meigel lives in Germany and works as an object and interior designer while maintaining his woodworking and sporting pursuits.

In Her Own Voice

Chi Ling Tabart's carved works are often coupled with words that further express her inner feelings and imaginings. Story by Carol Russell.



When I first saw the work of Chi Ling Tabart I was enthralled by her whimsical pieces which were coupled with a narrative in the form of a poem or prose. There is something slightly miraculous about her work. Its fragility makes you stop and gaze. You instinctively lean in to hear the voice behind it all, and Chi Ling has something to say.

Chi Ling and I were both featured in the *Making Space* exhibition at Queen Victoria Museum and Art Gallery in Launceston late last year. I had the opportunity to meet her and speak to her about her work and was intrigued to know more.

Born in Taiwan, Chi Ling was drawn to an artistic life. She studied traditional painting but knew the difficulties of making a living solely from art, so she trained and worked as a graphic designer. This enabled her to use her artistic abilities whilst having income security.

She moved to Adelaide and then onto Hobart with her husband Nick to be close to her father-in-law Bill, who was a woodworker with a workshop and plenty of tools. He and Nick encouraged Chi Ling to experiment with wood and sculpture. She soon found herself drawn in by the material and how the grain and even the faults in wood can influence the design and outcome of a piece.

Chi Ling was using mainly scrap material that was readily available from places like the local tip shop. Her first piece was carved from timber out of an old bed frame. I was in awe of her Baltic pine pieces and the tenacity it must've taken to get such fine results with a wood not known for carving.

Chi Ling began by using a few basic hand tools, a coping saw and some palm chisels. Later she started using a rotary tool to reduce the stress on her hands, although this can still cause problems over long hours of use. She now removes larger sections using a bandsaw and meticulous sanding follows. It's laborious work and very focussed, however the end result is captivating.

She began carving in 2012. In the early days Bill could see that Chi Ling had a special skill and an artistic eye, he began sharing some of the very special Huon pine he had stored for more than 40 years from his time working in Queenstown.

Chi Ling told me that without the enormous support and encouragement from her husband and father-in-law and other family members, she wouldn't have been able to make her art. It clearly means a lot to her that they had such belief in her abilities.



Opposite: *Mirror*, 2022, Huon pine, 220 x 100 x 80mm.
Photo: Peter Whyte

Left: Chi Ling Tabart in her Hobart, Tas studio.
Photo: Chi Ling Tabart

Below: *Drought*, 2022, radiata pine, Huon pine, resin. 280 x 180 x 120mm

*This is hot, this is dry,
I stare into the sky,
search for a sign,
Heat is rising and my
heart is pounding,
My mouth is so dry,
there are no tears to
cry, I have run out of
faith this time.*

Photo: Peter Whyte

When she began carving she wasn't bound by the rules of working with wood, and learned as she went along. Pieces would break, and it would serve as a lesson to know where the boundaries were. She kept all those pieces and strived to create the images she had in her mind with steely determination. She thrives on carving meticulously detailed sculptures and is driven to create the very best work possible.

In her 2018 work *There's Plenty of Fish in the Sea*, she told me that the 30mm crabs were a challenge. 'I broke a lot of crabs during the process. I spent a lot of time sanding those tiny legs with sandpaper. Working on small objects needs patience, concentration and not being afraid to fail many times over. Everything is possible, if you are patient.'

Although a fine artist, Chi Ling doesn't start a sculpture with detailed drawings, but rather with sketches that capture creative thoughts and written notes, perhaps based on things she's seen or read. Often she will make a paper or





Above: *Love you in this way*, 2019, Huon pine, radiata pine, acrylic, 24 carat gold leaf.

Below: *There's plenty of fish in the sea*, 2018, Huon pine and resin, 390 x 175 x 200mm



clay model to get an understanding of the basic form. This gives her a starting point, but she is inclined to allow the characteristics of the timber to guide the work, changing the detail to fit the grain and any faults that might be there. In her works *Drought* and *Mercy Killings*, she chose Baltic pine, where the strong lineal grain flows around the curves of the fish giving life and movement.

'I like using broken or aging wood which is charming but also a challenge to use. Some aging wood has hidden cracks – it's hard to see them from outside. I use resin to seal the cracks before carving. I'm always excited to find out what surprises those natural markings will bring to my sculptures.'

I was interested in Chi Ling's artistic influences and she explained that she loves different types of two and three-dimensional art that are often delicate, detailed playful and bizarre. All these aspects can be seen in her own work. She mentioned Fiona Hall and her aluminium sculptures, *Untitled* and *Paradisus Terestris Series* and Christian Verginer's sculptures. Also work by MC Escher, (his detailed realistic prints have inspired her work *A Knot in My Heart and Toughen Up*) and also cites Shaun Tan and Hideo Takeda.

'Japanese manga has played a big part in my childhood – works like *GeGeGe no Kitaro* and *Doraemon* which are full of dreams, imagination and fun for kids. They continue to have an impact on my work. My sculptures are not realistic and often cartoon-like.'

Chi Ling's work is made in response to something she feels strongly about. There is often an accompanying



Left: *Every word of advice*, 2019, radiata pine, 190 x 190 x 90mm

Below: *False awakenings*, Huon pine, 190 x 80 x 180mm, process and finished images by Chi Ling Tabart.



poem that expresses her thoughts and feelings. The destruction of the environment and the impact we have on other species is a theme she often visits. Her 2022 work *Drought* is a case in point.

Long before she started sculpting, Chi Ling would write poetry to match her drawings. She says she doesn't enjoy writing artist statements to explain her work, she believes the pieces are easy to understand and really need no explanation.

'Poetry is fun, no grammar required. I studied old and classical poetry when I was in primary school. I still remember those sounds and words which are beautiful and simple like a song.'

To view Chi Ling Tabarts work is to go on a journey with her whimsical characters – their imagined lives tantalise you and draw you to places you've never been. They tell you things you may not want to hear about love and loss and the fragility of our world. I was deeply moved to see this work and by Chi Ling herself. Woodworking is becoming a very exciting space to be in at the moment.

See more of Chi Ling's work at chilingtabart.com



Carol Russell is a woodcarver currently living and teaching in Melbourne. She is a regular contributor to Australian Wood Review magazine.



Fall of Light

Turned, textured and burnt, Andrew Potocnik's wall light creates a dramatic centrepiece with a central gold leaf embellishment.

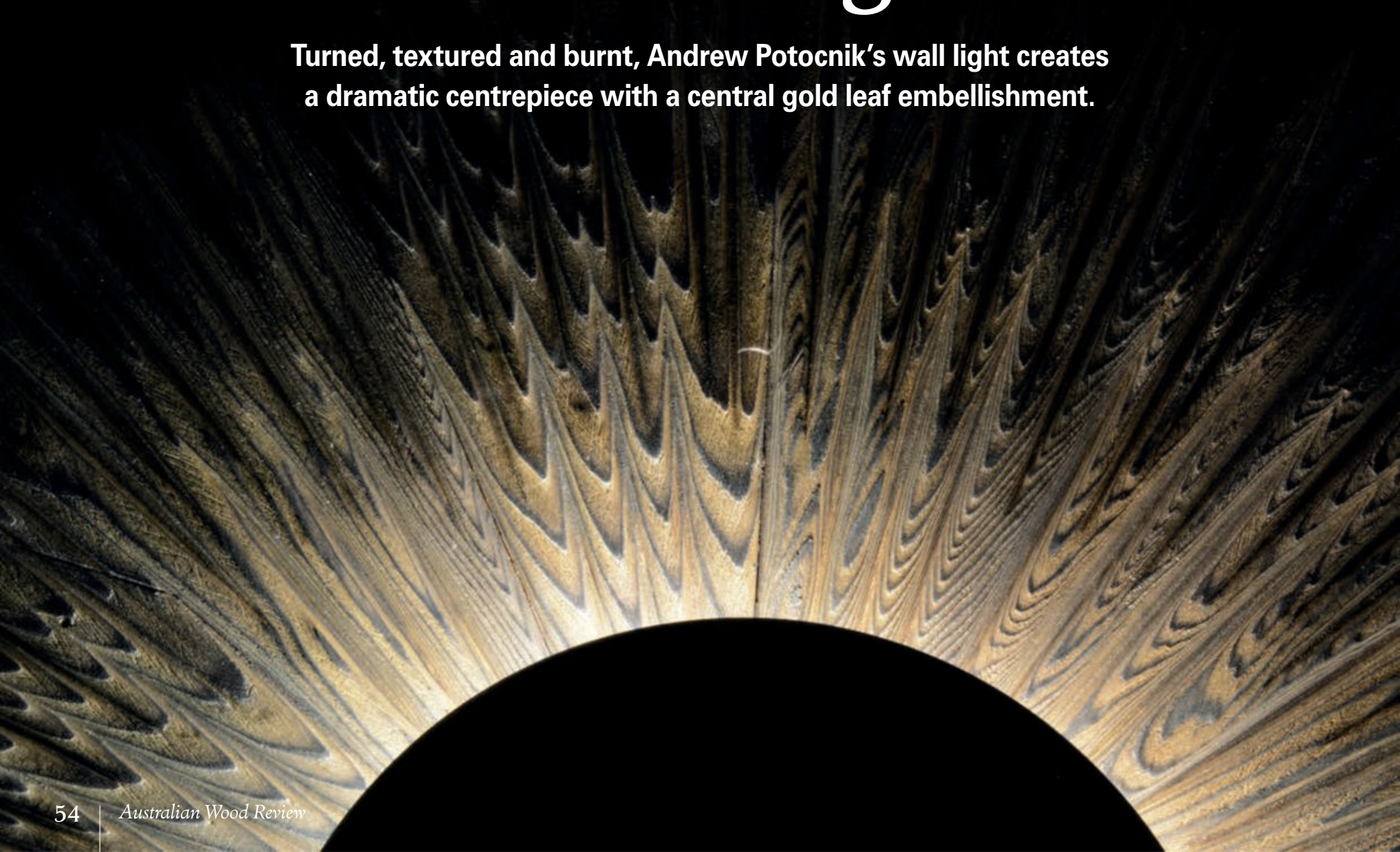
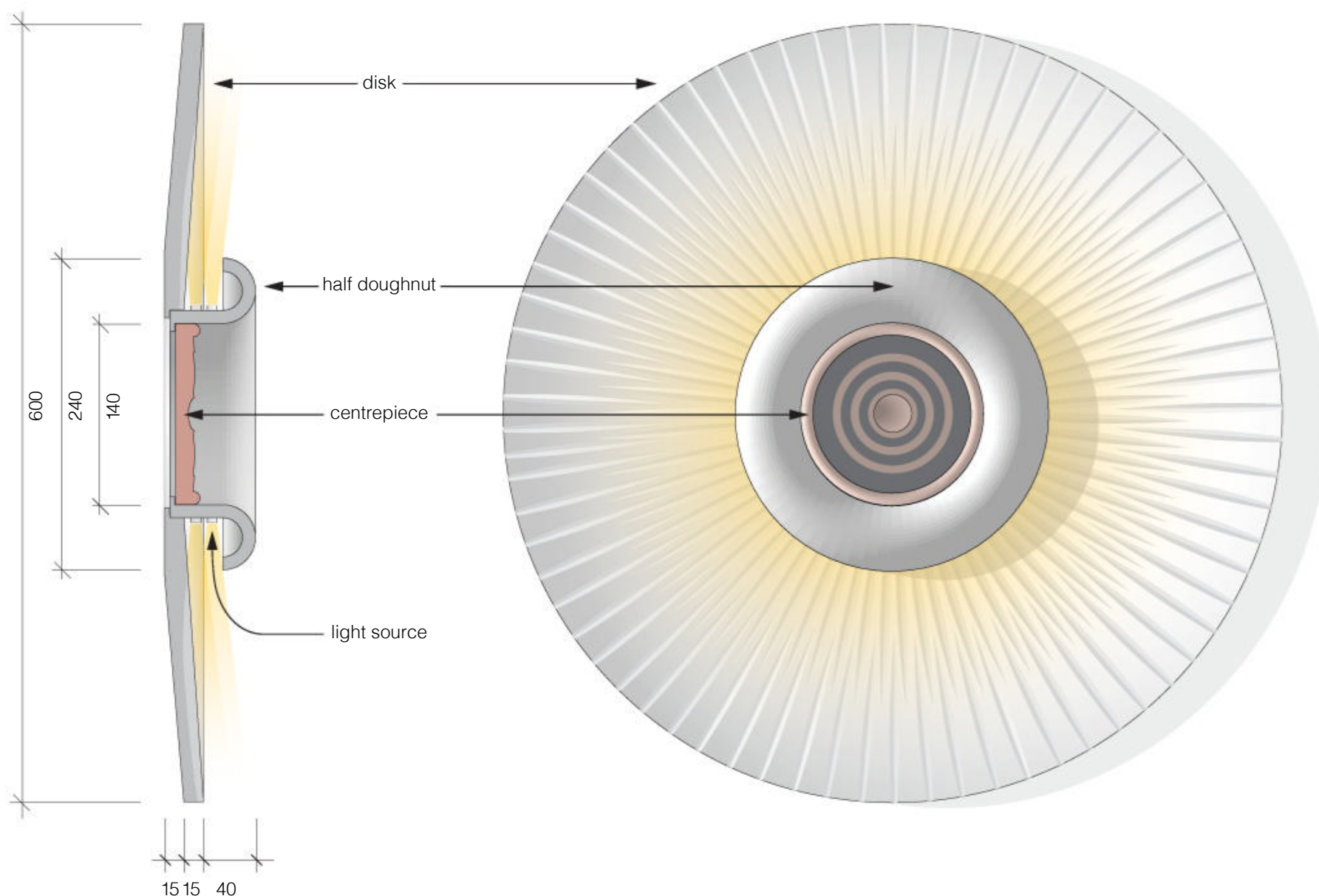


Fig.1 Cross section and front elevation (mm), not to scale

Many of the pieces I make rely on the fall of light and how forms and the texture inherent to wood can be highlighted. Receiving a prompt to make a light finally hit a trigger to get the ball rolling.

A few simple sketches and notes were enough to keep my mind ticking over a number of days, maybe weeks. Then, as the idea evolved, I needed to source suitable material and arrange it to create the base, and then work out how to apply the texture which was to be integral to the overall effect of the piece.

All of this sounds fancy, but as a maker of one-off pieces who is not reliant on constant income derived from production work, I have the freedom to explore ideas, and in turn write about what I learn as I make. After all, I spent most of my working life teaching wood in a secondary school environment where problem solving was part of the day-to-day aspect of helping students achieve success in the projects they conjured up...or stuffed up!

So where to begin? Material! Searching through my stash of bits and pieces I cannot bear to throw out, along with bits I pick up as something of a bowerbird, I realised the oregon stair treads I'd scored from a neighbouring nature strip would tick all boxes – size, grain, available and free!

I first drew a full size sketch (**fig.1**) on some packing cardboard, something I don't often do, but in this case in order to establish the overall dimensions my lathe could handle, and to ensure I had suitable material on hand. Fortunately, a couple of trial



Main: Recycled stair treads were sectioned, joined and textured with a central decorative feature for this wall-mounted LED light. With its distinctive grain markings, the oregon wood used lent itself to bold texturing.

1. Test segments were cut and cleaned up to gauge if there was sufficient material.
2. Segments for the base were glued with epoxy.



3. The segments were joined and bandsawn to a circle and attached to a carrier then screwed to a faceplate for turning.
4. On the lathe, the edge was trued and then the front surface tapered inwards to a thickness of 15mm.
5. Checking regularly with a steel rule ensured the taper was straight.
6. A small rebate was cut with a beading tool – this would accept a central doughnut form.
7. For the half doughnut, a disc of oregon was mounted to the lathe and turned down, leaving a central stub. A pencil line marked the top and middle of the curve.
8. The curve was further refined and then sanded smooth.
9. Showing the doughnut form reversed on the central tenon.
10. The tenon was mounted in a scroll chuck and tested fitted to the oregon disc.

cut pieces showed that when machined clean, there would be enough for this project (**photo 1**).

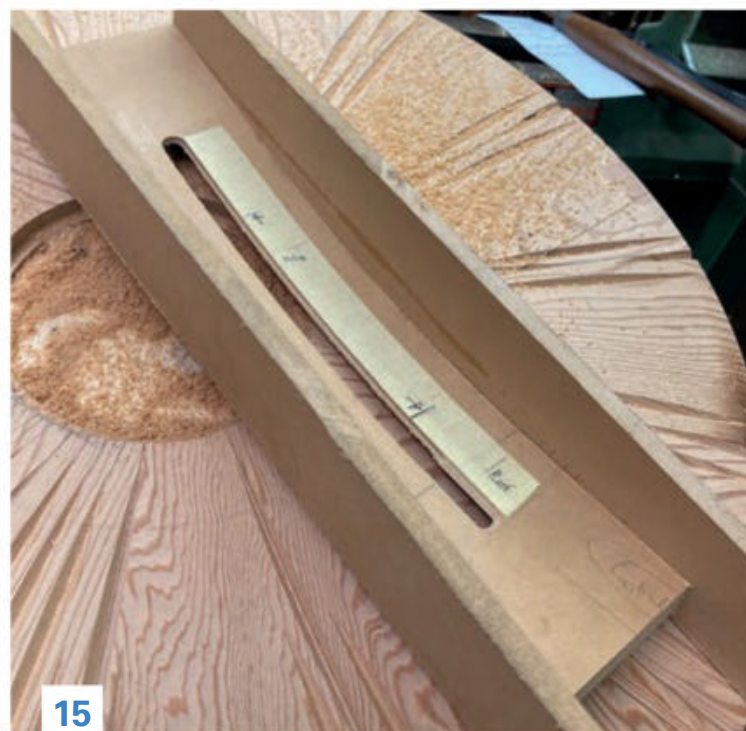
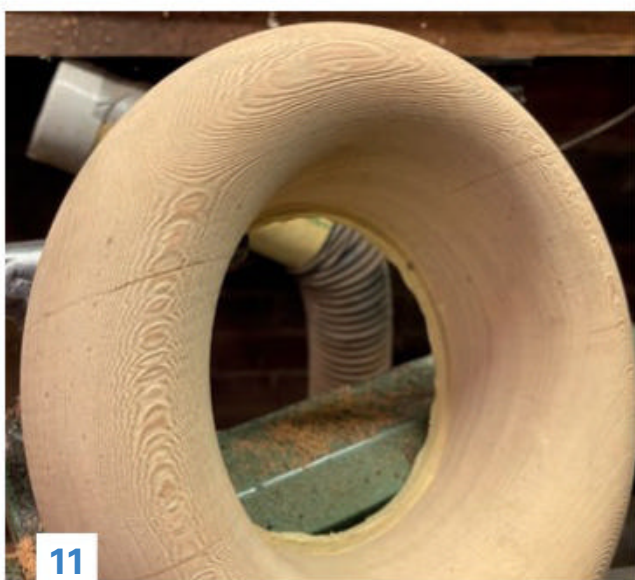
I cut a series of wedge-shaped pieces which were planed straight and smooth along their edges, then glued together with two-part epoxy glue using a simple rub joint (**photo 2**). I was conscious of the fact that my machining wasn't perfect, so the glue would act as a gap filler, and knowing that these joints would be subjected to heat later in the making, I couldn't use thermo setting glue, which could loosen and de-laminate.

Once assembled, I cut the disc to a circle on the bandsaw, and attached it

to a carrier fitted to a faceplate (**photo 3**), which would be fitted to my lathe. Turning a disc of about 750mm requires a solid base so the relatively thin 35mm disc had ample support so it doesn't flex as it's turned.

Fitted to the lathe, the outside edge of the disc was trimmed to a true circle, the face flattened and then trimmed down to an interior thickness of about 15mm (**photo 4**). To achieve the final textured surface I was after, I made sure this tapered area was as flat as possible, so I checked it regularly with a steel rule (**photo 5**).

The centre of the disc needed an opening with straight sides to accept a



half doughnut shape form, so a beading tool was used to leave a small shoulder at the base of the cut (**photo 6**).

To begin the half doughnut, a 75mm thick x 270mm diameter x disc of oregon was mounted to my lathe and turned down, leaving the centre stub in place. The pencil line you can see in **photo 7** shows the top and middle of the curve, which was gradually refined and sanded smooth (**photo 8**). You can also see that the centre area was trimmed to become a tenon that enabled me to reverse the form (**photo 9**), and mount it in a scroll chuck so I could shape the underside of what is really just a hollow sleeve.

Once the base was trimmed to size, it was time to test how well it fitted into the oregon disc (**photo 10**), before the sleeve was parted free of the carrier and its exterior surface sand blasted to make the wood's growth rings stand out (**photo 11**).

A couple of coats of Black Japan were applied to darken the exterior (**photo 12**), while white paint was applied to the inner portion to help reflect light out onto what would be the textured surface of the oregon disc.

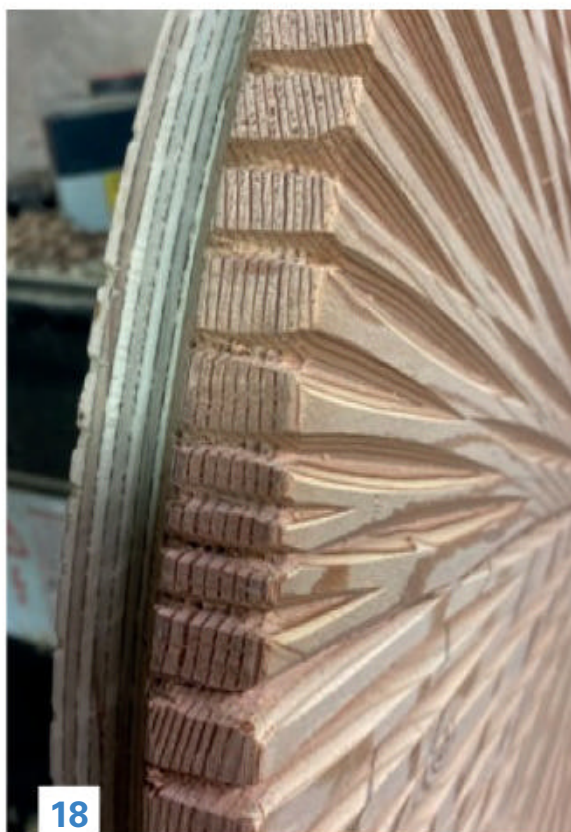
As I'm not a licensed electrician, I used a strip of LED lights which can be bought as a complete set-up with a power pack and all wiring ready to plug in. The meter long strip allowed me to wrap it around the sleeve twice (**photo 13**). The black socket plugs into a wire that travels to a transformer which is then plugged into a power point. Too easy.

To begin routing the face of the oregon disc, I first needed to make a sled which would allow a small laminate trimmer to travel in a sweeping motion (**photo 14**). A V-shaped cutter would then create a groove that starts as a narrow point, gradually entering the wood deeper end making the groove broader,

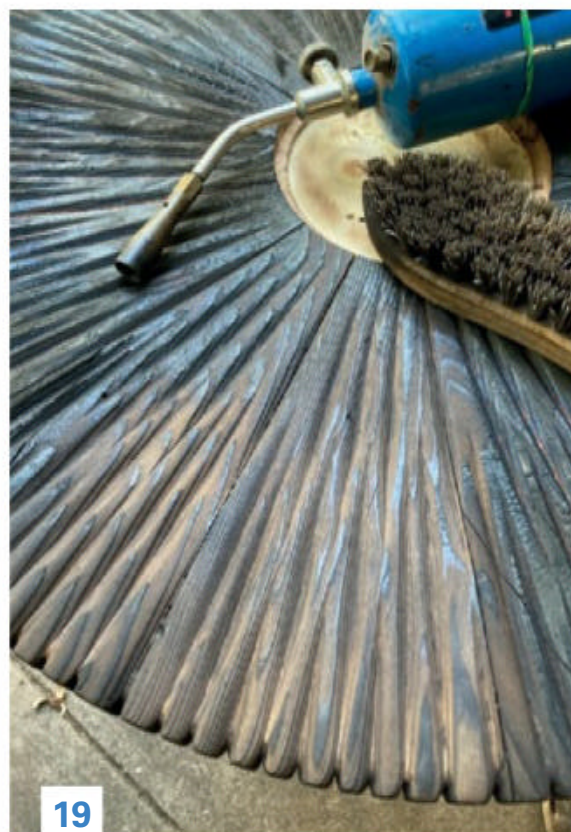
11. The surface of the doughnut was sandblasted to make the growth rings stand out.
12. Two coats of black stain were next applied to the outside.
13. A strip of LED lights was wrapped twice around the doughnut interior.
14. A simple MDF router sled was made and used cut radiating grooves with a trimmer.
15. Using a V-shaped cutter on the tapered disc creates narrow grooves that widen as the trimmer exits outwards.
16. Moving, clamping and routing with the jig produced the series of radiating grooves shown.



17



18



19



20



20

- 17. A series of cuts softened the circular look of the disc edge.
- 18. Each cut was opened out and rounded somewhat with a rasp.
- 19. The oregon disc was then scorched and brushed back to expose the grain and growth rings.
- 20. A 19mm thick piece of jarrah was turned to fit the central opening.
- 21. Rebates and beads were turned, stained and embellished with gold leaf.

before narrowing and exiting the board (**photo 15**). The sled consists of two 12mm thick pieces of MDF, with a 3mm thick section glued in between. A centre line and a couple of extra marks on a strip of masking tape enable accurate positioning of the sled on the board.

After what seemed an eternity of positioning, clamping, routing, and then repeating the process over and over again, I had numerous grooves radiating out from the centre of the board to give some interesting grain patterns (**photo 16**). To reduce the strong circular appearance of the disc, I cut a series of lines a small distance in from the edge on my bandsaw (**photo 17**).

Returning the assembly to the lathe, each of the cuts was widened and

rounded to run into the routed grooves using a rasp (**photo 18**). This portion didn't need to be smooth as the next step was to scorch the edges and face of the disc. Using a butane gas torch, the wood was burnt but I didn't apply too much heat so the disc would not buckle, or the glue soften and delaminate.

The scorched surface was then brushed back with a stiff bristled nylon brush to expose the now highlighted grain and growth rings (**photo 19**). I didn't want this surface to darken, so it was left bare without a finish.

The final component of the light was a disc that was to fit into the middle of the doughnut sleeve. A piece of 19mm thick jarrah was mounted on the lathe and turned to match the

opening in the sleeve. Vernier calipers ensured an accurate fit (**photo 20**), before creating some beads, flats and a couple of rebates, which were filled with gold leaf and cyanoacrylate glue (**photo 21**).

Two coats of oil finish were applied before removing the disc from its carrier. The three components were then assembled with a hook added to the back, and the project was complete. Now to connect the wiring, turn on the switch and see what happens... And I was a happy vegemite!

Photos: Andrew Potocnik

Illustration: Graham Sands



Andrew Potocnik is a Melbourne wood artist, teacher, author and regular contributor. See www.andrewpotocnik.com

Wood Diary

For more events and news sign up to AWR fortnightly newsletters at:



www.woodreview.com.au

Diary listings are free. **Email to:** linda@woodreview.com.au

Note: Listings are correct at time of publication but may be subject to change. It is advisable to check details with the organiser before visiting.

1 AUGUST–30 OCTOBER

Indian Ocean Craft Triennial (IOTA) 24

Codes in Parallel: exhibitions, conference and events in Perth, Western Australia
<https://indianoceancrafttriennial.com/>

10 AUGUST–27 OCTOBER

MAKE Award and Australian Design Centre

The 2023 biennial Make Award exhibition tours to Geelong Gallery, Victoria
<https://makeaward.au/>

19–25 AUGUST

National Skills Week

Showcasing skills, vocational learning and career opportunities.
www.nationalskillsweek.com.au

1–30 SEPTEMBER 2024

Homo Faber

Celebration contemporary craft: 50 countries, 300+ talented artisans in Venice, Italy
<https://2024.homofaber.com>

3–6 SEPTEMBER

Futuring Craft 24: The Value of Craft

International conference 'contemplates the various languages inherent in contemporary crafts' held within Indian Ocean Craft Triennial (IOTA24).
<https://indianoceancrafttriennial.com/>

4 SEPTEMBER

Maker of the Year, presented by Carbatec

Entries close 11:59pm AEDT for Wood Review's awards for fine woodworkers and wood artists.
www.woodreview.com.au/moty

7 SEPTEMBER–24 NOVEMBER

Design Fringe

Melbourne Fringe's annual contemporary design exhibition with workshops, talks and events.
Hosted by Linden New Art gallery
<https://melbournefringe.com.au/design-fringe>

28 OCTOBER–2 NOVEMBER

London International Woodworking Festival

Hand tool woodworking event with short courses, seminars and tool bazaar
<https://londoniwwf.co.uk/>

1–31 OCTOBER

Craft + Design Canberra Festival exhibition

The 2024 Festival advocates for design thinking, collaboration and making by hand to support problem solving providing hope for our future.
<https://craftanddesigncanberra.org/>

5–6 OCTOBER, 2024

Carving group open weekend

Woodcraft Manningham Woodwork Club
Templestowe Leisure Centre,
Corner Anderson and Parker Streets,
Templestowe, Victoria
www.woodcraft-manningham.org.au

11–20 OCTOBER

Sydney Craft Week Festival 2024

Annual city-wide festival presenting contemporary craft and skills workshops. Led by the Australian Design Centre
<https://sydneycraftweek.com>

11–12 OCTOBER

Cooroora Woodcraft Show 2024

Memorial Hall, Maple St, Cooroy, Qld
www.cooroorawoodworkersclub.com

19–20 OCTOBER

Woodfest 2024

Workshops and makers market
Bulli Showground, NSW
www.woodfest.com.au

26–27 OCTOBER

Goulburn Valley Woodworkers Wood Show

Includes National Biannual Scrollsaw Competition, trade stands, demonstrations, milled timber
Multipurpose Pavillion, Shepparton Showgrounds, Victoria
www.gvwoodworkers.com.au

27 OCTOBER

Antique & Collectable Hand Tool Market

Hand Tool Preservation Assoc Australia
164 Neerim Rd, Corner Neerim & Grange Rds, Caulfield East, Victoria
9:30–12:30pm, \$5 entry
www.htpaa.org.au

9 NOVEMBER 2024

Tools & Trades Day conference

Hand Tool Preservation Assoc Australia
St Anthony's Parish Hall,
164 Neerim Rd, Caulfield East, Victoria
www.htpaa.org.au

9–10 NOVEMBER

Eltham & District Woodworkers Club Annual Exhibition

Demonstrations and sales with free hands-on workshop for children.
Eltham Community Centre, Cnr Pitt Street and Main Road Eltham, Victoria
www.elthamwoodworkers.org.au

9–10 NOVEMBER

Out of The Woods

Competition and exhibition, Fine Woodwork Association WA
Celebrating fine woodwork. Students, novices, and seasoned professionals showcase their passion, creativity, and craftsmanship.
Pattern Shop, Midland Railway Workshops, WA
Email: ootw@fwwa.org.au

16 NOVEMBER–1 DECEMBER 2024

Graduating Exhibition

Sturt School for Wood
Cnr Range Road & Waverley Parade, Mittagong, NSW
www.sturt.nsw.edu.au



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The Struggle is Real

Angharad Summers writes about the morality of making furniture in today's world of 'too much stuff'.



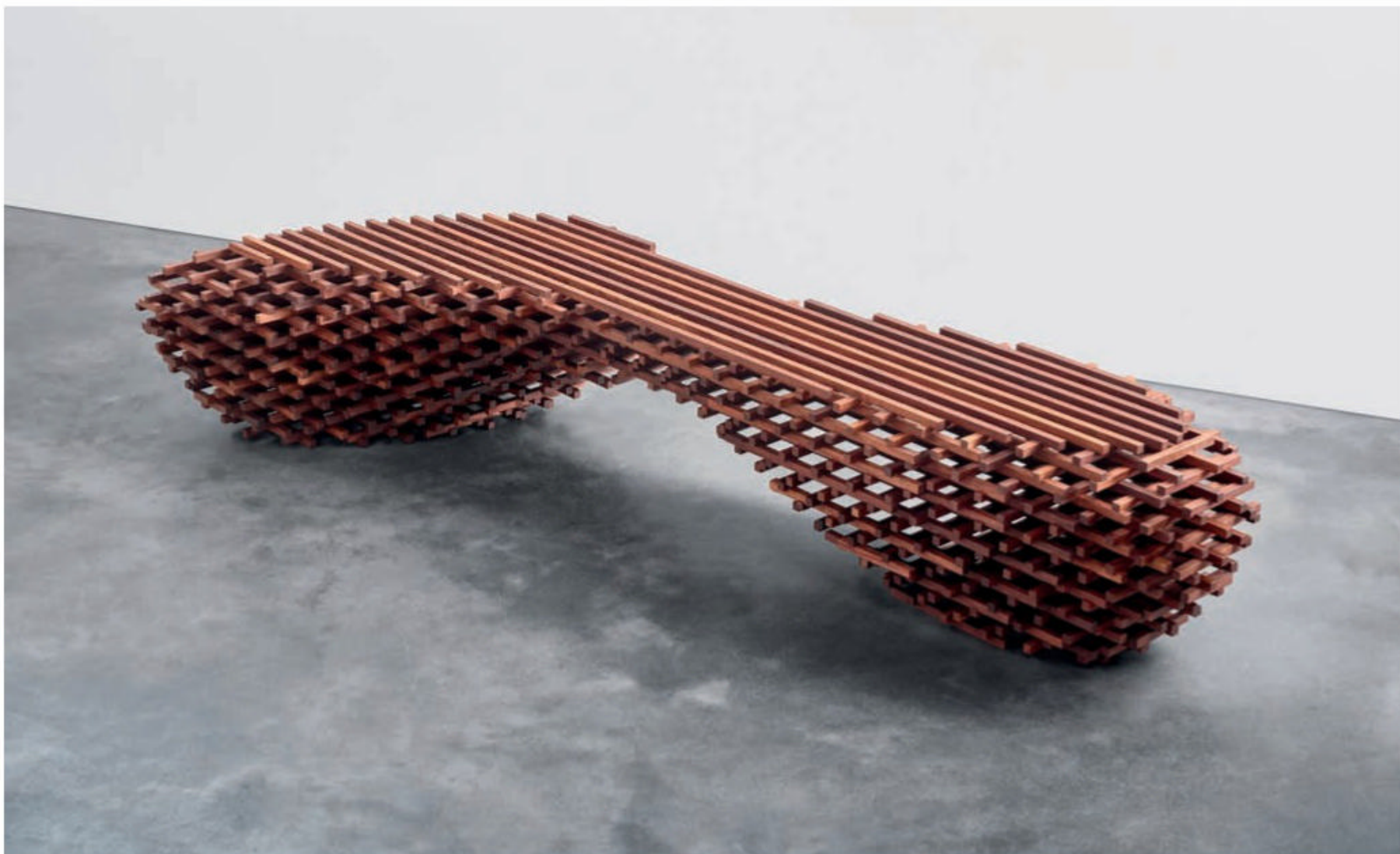
When I decided to study furniture design I knew I wasn't picking something that would lead straight to a graduate job at a good company with reasonable pay. But I knew that I loved it and that I would make it work. After all, I come from a family of strong-willed and resourceful people that are quite determined to persevere.

I enjoyed my time at university, learnt a lot and our lecturers made us feel excited and dangerously optimistic about the future. Skipping forward took me to the post-degree era where I worked a job I hated and tried to focus on design projects after work. I started to think more and more about what the hell I was doing. It may have been prompted by a harsh friend remarking, 'the world doesn't need more f#@king chairs', when I said that I still wanted to be a furniture designer. But I thought I had an argument and as I reflected more on what he said, I started to doubt myself and wonder if he was right.

There is already too much stuff in this world – unnecessary stuff, cheap stuff, bad quality stuff and various versions of the same thing. What do I have to contribute that is new, yet necessary? Or at the very least not using brand-new materials that are simply contributing to the never-ending consumer (waste) cycle.

There are designers that create beautiful things – but at what cost? I can't justify this indulgence to myself. There are designers like Hella Jongerius who agree there is too much 'useless' design, and instead focus on textiles because that is a more sustainable way of reviving an already existing furniture piece.

I would like to find this sweet middle spot where I can make beautiful and functional furniture pieces without feeling guilty that I'm part of the wider problem our world has.



Non-egocentric or ecocentric design

I decided to look into non-egocentric design, or what one could also call ecocentric design. That is, design which is selfless and altruistic, design which puts the needs of nature before those of the designer and consumer. The best way of achieving this is to start with focussing on material use. You can buy secondhand timber, find old pallets and other 'rubbish' on the side of the road, use offcuts from other projects, use an old furniture piece to create a new one and so on.

One example of this is *Edge*, a side table made from various rolls of discarded veneer edge banding, an offcut of solid timber and old decking planks. The world may not need another table but if I would like to make one, I can do so from such materials without harming the environment anymore. Ashley Eriksmoen's AFDA winning chaise lounge *The Dream, or: the view from here is both bleak and resplendent* also illustrates this point. With discarded timber furniture she aims to critique the vicious cycle of producing, consuming and throwing away.

Another example is London-based, Australian designer Brodie Neill's *Recoil*, a table made from over three kilometres of veneer offcuts or *Longitude*, a bench made from timber floorboards salvaged from a renovated hospital. These furniture pieces raise the bar for upcycled design, showing how fine it really can look when taken seriously. This is a huge leap from the DIY pallet furniture people tend to picture when they hear the word upcycled.



Opposite: Ashley Eriksmoen, *The Dream, or the view from here is both bleak and resplendent*, winner of Australian Furniture Design Award 2022. Photo: David Paterson, Dorian Photographics

Above: Brodie Neill, *Longitude* (2022), reclaimed Rhodesian mahogany from floorboards. Photo: Angela Moore

Left: Angharad Summers, *Edge table*, repurposed factory discards and offcuts. Photo by the maker

Another way of achieving ecocentric design is to focus on the furniture piece conveying an important message. It may just be 'another chair' at a first glance, but if the chair has a story to tell and provokes a conversation between people about an important issue then it is doing more than just fulfilling its function.

When you look at South African artist Porky Hefer's work you may think at first that it's a designer's giant



Left: Ashley Eriksmoen, *Fell* (2023), a sculptural statement made from salvaged domestic furniture parts. Commissioned by the National Gallery of Victoria, Melbourne and displayed at the 2023 NGV Triennial. *Photo by the artist*

Below: Designed and built by Revival Projects, *The Melbourne shoe-box* was made from one large piece of timber salvaged from a roof structure in South Melbourne – the site of Revival's first Zero Footprint Repurposing hub. *Photo: Tom Graham*



egotistical project, made just for fun and probably wasting virgin materials; however, it is quite the opposite. Hefer's *Endangered* collection is a set of seating spaces in the form of endangered species and are made of eco-friendly and recycled materials.

The question is – is it possible to sustain this design practice one hundred percent of the time? And will people pay for it? Found materials are generally cheaper but the work time is longer due to having to source, machine the timber more, remove nails etc.

And if you make something from found materials, should you still charge the customer for what the material would have cost new? I would say not. It feels morally wrong, although talking to an experienced furniture design business owner they thought the opposite.

If you need to make more than one piece and don't have enough existing material you will have to buy new material and you can't suddenly charge different prices for the same thing. It is a good point but deep inside I struggle to think in this purely business sense. Do I have to change or does the system have to change?

I do believe that a different future is entirely doable for us. Revival Projects is a Melbourne based organisation led by Robbie Neville that rescues existing materials and repurposes them for new building and furniture projects. They offer material consulting services for the construction industry, an app where people can access free, rescued materials to use for their own projects, a

furniture range and commission-based service and various initiatives and workshops to involve more people in the local community. The manifesto on their website is straight to the point and you can see they're getting stuck into the difficult yet important work that needs to be done. The more people that get on board with this, the more it will become the new normal.

In 2023, Maryam Moghadam, Carl Broesen and myself organised *Pop 'round: one person's junk is another person's chair** for Melbourne Design Week. The exhibition featured 17 works from 13 designers. All the pieces were made from recycled, repurposed or reclaimed materials, excluding only fastenings and hardware. This year Tait hosted an exhibition for Melbourne Design Week whereby students from Hester Hornbrook Academy used scrap materials from Tait's factory to create furniture pieces. It's encouraging to see the theme continuing.

There are a lot of unanswered questions but I am left feeling optimistic and motivated to continue working in this vein, confident that it is the path to a better future for us all. I hope I've convinced at least some of you to lean more towards eco than ego.

* *The exhibition 'Pop 'round: one person's junk is another person's chair' was featured in AWR#121, December 2023.*



Angharad Summers @angharad_summers_design is a product and furniture designer from New Zealand currently based in Berlin and Melbourne.

More From Your Shooting Board

A shooting board is the ultimate accessory for precision work, fine details and more.
Story by Charles Mak.

If you spot a shooting board in a woodworker's workshop, it is reasonable to conclude that they care about precision and quality in their work. If you have never heard of a shooting board before or yours has been collecting dust for some time in the shop, this article is for you. Here we'll look at how you can make the most out of this indispensable shop fixture.

A shooting board has three parts: An upper board for the work to be placed on (the ledge), a lower board for the shooting plane (the runway), and a stop, mounted at a desired angle – usually at 90° – to the ledge (**photo 1**). You can make a shooting board or buy a commercial one, and for either option, the techniques shared in this article will work.

The shooting jig is mostly commonly used for squaring the end of a workpiece. In each pass, only a tiny amount of material is shaved off, avoiding overcutting, which can happen with a power tool. But the shooting jig also excels in handling thin materials. With the thin board placed on the ledge, the plane – laid on its side – trims on the wood's edge with ease and precision (**photo 2**).

The shooting plane

You use a plane with the shooting board. Some use a dedicated hefty shooting plane, but you can use any low-angle bench plane as a shooting



Right: There are several ways you can make the most out of this indispensable shop fixture.



1. This shooting board has dual runways to shoot with either the right or left hand.
2. The shooting board is ideal for trimming thin work by hand.
3. Any low-angle plane can be used as a shooting plane.
4. Set the blade to make fine to very fine cuts.
5. Start with holding the workpiece against both the stop and the toe of the plane.
6. Stop planing when you see a full-width shaving.
7. Line up your dominant arm and torso with the runway before you begin.

board plane (**photo 3**). Use a sharp blade with a 25° bevel, ground straight across with no camber on the cutting edge, and set the plane for making fine cuts (**photo 4**). With the plane now properly set up, you are ready to learn the shooting techniques.

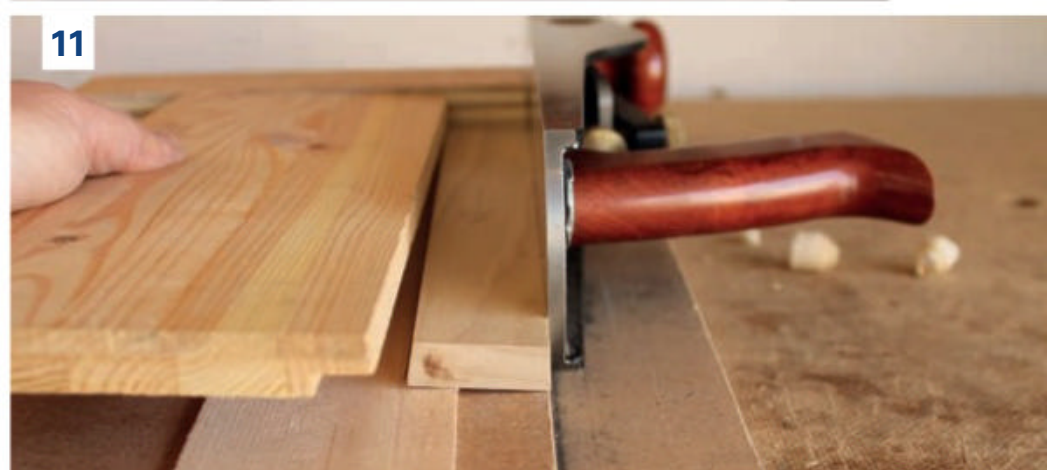
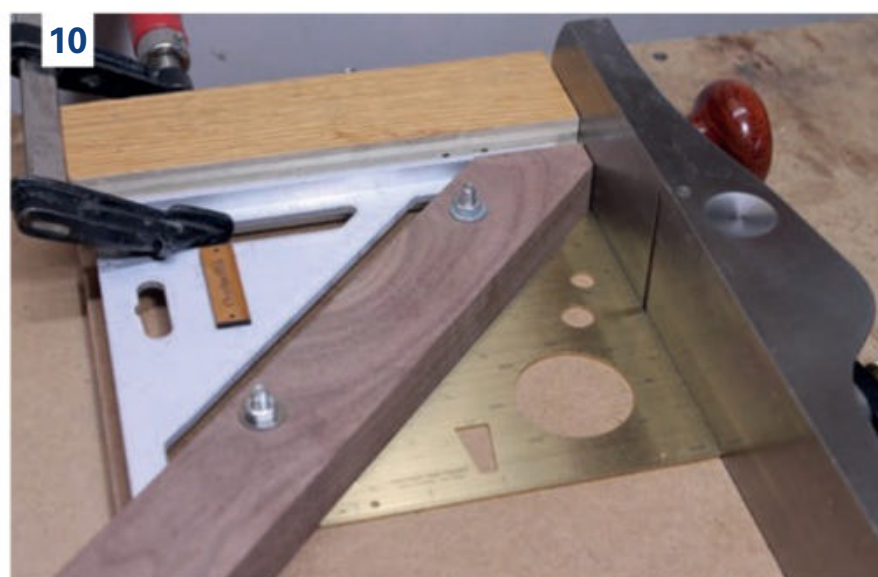
Squaring cuts

By virtue of the stop being square to the edge of the ledge, the plane trims work perfectly square every time. To shoot, place the plane on the runway, and butt the workpiece against the stop as well as the plane's toe, i.e. the sole ahead of the blade as shown in

photo 5. Slide the plane away from the work and trim the wood with push strokes, keeping the plane to the ledge (**photo 7**). A full-width shaving will show the cut is done (**photo 6**). If you find it hard to hold and push the plane by the side, you could attach a small C-clamp to the plane as a handle for gripping (**photo 8**).

Mitring work

The shooting board can be seen as a building block for other precision jigs. You can, for example, add a 45° stop to shoot mitres. To make a mitre stop, I adopted the rafter square idea of American woodworker Sean



Montague, by attaching a strip to the longest side of an aluminium speed square (**photo 9**). Simply clamp the modified speed square to the shooting board stop, and you can shoot accurate mitres all day long (**photo 10**).

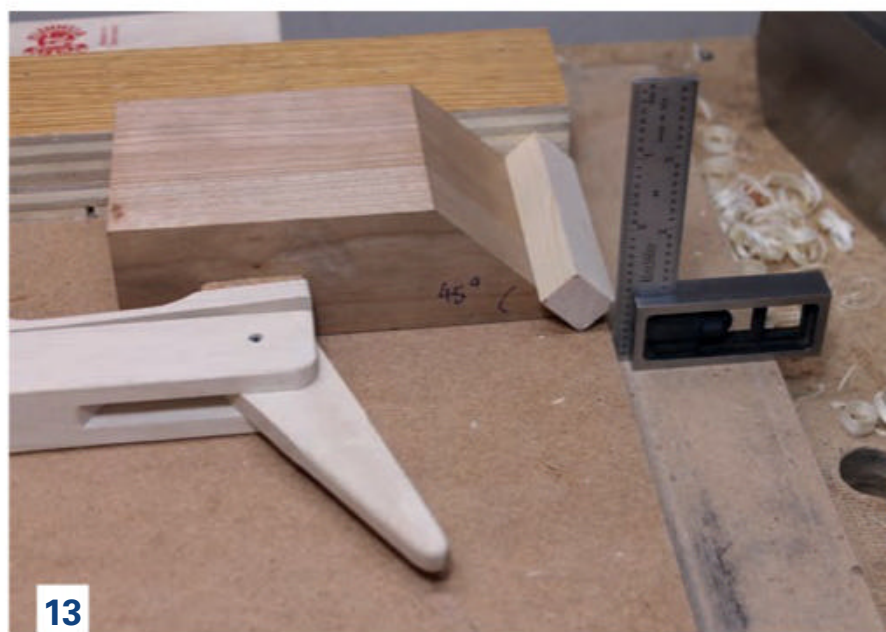
Beveling edges

The shooting board can be used not only for truing but also for bevelling. To trim an edge at an angle, raise the piece by placing a shim underneath it (**photo 11**). This technique allowed me to make, for example, staves for coopered lids (**photo 12**).

8. For extra grip, mount a C-clamp to the body of the plane as a handle.
9. Bolt a grooved wooden strip to the hypotenuse of a rafter square as a mitre stop.
10. Retract the blade of your plane, and use a trusted square to check the mitre stop for 45°.
11. A shim taped to the ledge raises the work while a rebated board is used as a holder-down clamp.



12



13



14

Chamfering edges

Chamfers are used in furniture pieces to soften the look and protect the edges. Derek Jones, a British woodworker and teacher, came up with a clever way of chamfering small work using the shooting board:

1. Position the work on the ledge for the desired amount of chamfer with an angled block (**photo 13**).
2. Clamp the angled block to the stop and hold the work against the stop to cut the first edge of one face.
3. Rotate the work to shave the opposite edge (**photos 14, 15**).
4. Re-position the work to set the proper overhang and follow the same steps above to cut the chamfers on the opposite face (**photo 16**).

Similarly, ends can be chamfered by standing the piece at an angle and shooting the edges on the end (**photos 17, 18**).

Rounding ends

Derek Jones also uses the shooting jig to round ends by hand. Here is how to do it:

1. Start by drawing the desired round profile on the end.
2. Hold the work against the stop at an angle so you can shave off one facet of the round (**photo 19**).
3. Trim one flat close to the line, then slightly alter the work to trim the next flat along the line (**photo 20**).
4. Continue the series of cuts to make flats along the line until you remove the ridges and form a round profile on the piece (**photo 21**).

Shooting large work

A typical shooting board can handle small to medium sized pieces. For a large piece such as a door or a long board, you may turn to a shooting benchtop for truing. A shooting benchtop can just be your workbench

or an assembly table as long as it is flat and large enough to support the work to be trued.

To shoot a credenza door, as an example, I placed a couple of identical strips on the workbench and rested the door on the strips (**photo 22**). After securing the door on the bench with holdfasts, I planed the edge using a low angle jack with its side riding on the bench (**photo 23**).

The shooting board is a versatile fixture, and it is quite a joy to use, giving instant feedback and consistent results. It may just be the missing link between good work and best work for some of your future endeavours.

Photos: Charles Mak

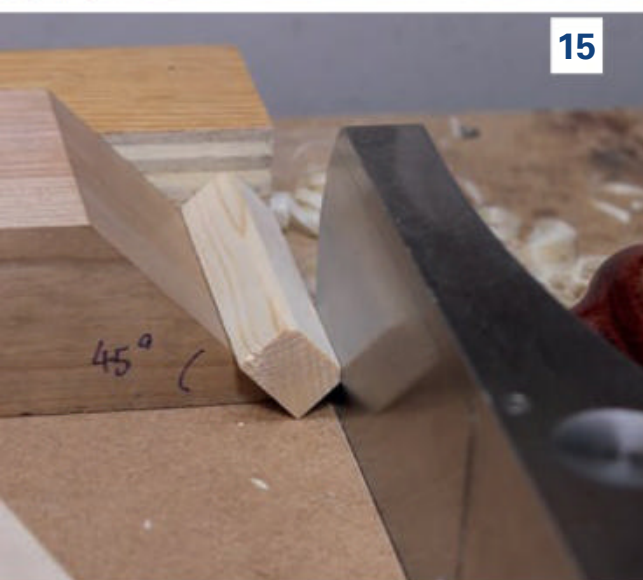
*Charles Mak enjoys writing articles, authoring tricks of the trade, and teaching workshops. He published *Woodworking Tips and Tricks* (Algrove Publishing) in 2022, a collection of some of his unorthodox shop wisdom.*



16



17



15



18



19

12. Coopering by hand can produce results as good as those done with a machine – but without the dust and noise.

13. Clamp an angled block to the stop and overhang the work on the ledge by the desired size of the chamfer.

14. For small pieces, rubber fingertips will give you a good grip of the work.

15. After the first chamfer cut, rotate the work around to trim the other edge.

16. Reposition the block for a proper overhang before chamfering the opposite face.

17. Ends can be chamfered in a similar manner.

18. The shooting board is a safe way of chamfering small pieces without any risk of over-cutting or kickback.

19. Start rounding the profile by cutting a small flat on the corner with the work held at a slight angle.

20. Alter the angle of the work incrementally after each stroke to shave off the waste.

21. In the final strokes, plane the profile to the pencil line.

22. Clamp the door to the benchtop.

23. Keep planing the edge until you see a full-width shaving.



20



21



22



23



Small-Scale Work – Bigtime Passion

After a career as a builder and renovator, Tim Major has developed a passion for working wood on a small scale and exploring the expressive possibilities of Japanese netsuke. We asked him why.

What is it about netsuke or carving in miniature that interests you?

I've always found items in miniature fascinating, so as I set out on my woodcarving journey I found that I was naturally drawn toward carving smaller objects. Then I discovered netsuke.

What defines a netsuke and where does this artform come from?

Netsuke (pronounced 'netske' with a silent u) are a toggle, developed during 1600s in Japan as a functional as well as decorative item. They allowed

Japanese men to carry various utility items such as *inro*, tobacco cases or a purse, as the male kimono had shorter sleeves which were unsuitable for use as pockets. The utility items were attached through string holes, or *himotoshi*, to the netsuke via a cord, usually silk.

The netsuke was then passed up under the *obe*, which is the wide satin or silk sash which secures the kimono around the waste. The netsuke sits over the top edge of the *obe* to secure the utility item. As the kimono has no pockets, the *inro*, usually worn at the rear of the hip, provides carrying

facility for smaller items such as currency or medication.

Japanese netsuke carvers would invariably serve an apprenticeship of around seven to eight years followed by four to five years as assistant to the master netsuke carver before attaining the right to carve in their own name.

Can you tell us a little about your background?

I am happily retired having enjoyed working in the construction industry for around 47 years building and renovating client's homes. My

business also carried out the majority of cabinet work for my projects.

I've always enjoyed working with wood, particularly beautiful timbers. In retirement as a self-taught luthier, I've enjoyed producing some quite nice tenor ukuleles. Boxmaking followed, then the Japanese art of kumiko and now woodcarving, particularly netsuke carving. I've enjoyed carving netsuke for a relatively short time now – I've a long way to go but I'm thoroughly enjoying the journey.

Where do you get your ideas from?

The first book I purchased was *Carving Japanese Netsuke for Beginners* by Robert Jubb which contains a wealth of both information and inspiration. *The Art of Netsuke Carving* by Masatoshi is a prized possession and an extraordinary read containing further rich inspiration.

When looking for a netsuke subject I'll search my netsuke books for inspiration, or the internet for photographs of a animal or bird that I feel is workable in wood and within the required parameters of netsuke carving. These are that the finished netsuke must not have substantial protrusions that would catch on clothing, must be tactile and include the himotoshi cord holes or a natural opening, and the finished piece should generally be between 25mm and 50mm in length.

Do you have any tips for choosing woods to suit certain subjects?

Not necessarily for specific subjects but I would recommend jelutong or basswood as the first timbers for any carver to start with as they are tight grained, easily carved and relatively inexpensive. Australian white or brown beech, Huon pine, King William pine, tiger myrtle, and iroko (African teak) are my favoured species for netsuke carving. I use agate beads for eyes.



These pages show the stages of carving a tiger and two cats from tiger myrtle. Tim Major recommends use a cut-resistant glove for the non-dominant hand.





Showing the initial layout and later stages for Tim's *Preening Duck* netsuke in Huon pine. The holes (*himotoshi*) in the base are for threading cord through.



Some of your pieces have been carved 'two-at-a-time' – why is this?

Based on advice from the first book purchased on the subject, I have found this method to work well for carving netsuke. As netsuke are traditionally quite small, to have a block long enough to carve two netsuke with some mid-space allows the carver good purchase during the process.

What are your best tips for would-be netsuke carvers? How do you get started on a piece?

Purchase that publication, it's a worthwhile investment in gaining an understanding of tools and technique. Choose your netsuke subject, either from a publication or imagination. Cut a suitably sized block of your preferred wood bearing in mind the grain direction, the grain should ideally run the length of the piece. Draw your subjects on the block, both in plan and elevation. If you have access to a fine-bladed bandsaw carefully cut away some of the waste to your chosen shape.

After fitting an essential cut resistant glove to your non-dominant hand start to carve into the shape using a sharp sloyd knife. Don't be discouraged, anything worthwhile takes time and practice. After the sloyd rough-out finer carving tools may be required depending on the required level of detail.

Another tip is to carve a spoon or spoons first. I did and firmly believe it to be the best kick-off to any form of woodcarving.

Small-scale work doesn't necessarily mean small inputs of time...how long can it take to carve a miniature?

The time required to carve anything depends primarily on the carver's skill level along with the anticipated level of detail to the piece. Start with a subject that you feel is easily manageable otherwise despondency with surely follow.



The time invested in a carved piece usually runs from 10 to 30 hours depending on the level of detail and associated sanding difficulty. I come back to my work for an hour or two at a time but a few enjoyable hours can easily slip by.

Master netsuke carvers would often spend weeks or months to complete a piece, particularly when working in ivory, antler or bone.

Do you need lots of tools?

What would the essential ones be?

Apart from access to a small bandsaw (not essential, but pretty handy), a carver clearly needs a knife. The woodcarver's knife is called a sloyd knife which is the essential carvers tool. A good sloyd will start at around \$60 for a Mora but can run to around \$300 for handmade knives. The other carving tools that I find invaluable for netsuke carving are the Pfeil lino/woodcutting range and Dockyard tools

for fine detail work. The use of a cut-resistant glove on the non-dominant hand cannot be underestimated.

What do you love most about carving netsuke?

Finding the initial inspiration either through research on previously carved netsuke or through pure imagination based on the prerequisites pertaining to Netsuke. I also enjoy the quiet focus netsuke carving requires along with the sense of achievement experienced when a carving looks right on completion. A netsuke carving does not need to be anatomically accurate but should look correct, balanced to the eye and feel good in the hand.

Photos: Tim Major



Tim Major lives in Sydney and is a long-time woodworker and member of the Woodworkers Association of NSW. See more of his work via Instagram @paddo_ukes

Above: These hares were carved from Huon pine with agate used for the eyes.

Below: Showing two Japanese *inros* made from NSW scented mahogany with inset Japanese mother of pearl tokens and braided silk cord.





Learning and Living the Craft

An interview with Julien Hardy on why he became a furniture maker and why he only makes one-offs.

How did you come to be a custom furniture maker?

I've only been a woodworker for the past 15 years. Before that, I was an art director in advertising living in Montreal. I went to an evening class and wondered at the fact that an idea took life in realtime, became a real thing. The virus was caught. But I soon realised all these machines couldn't fit in my apartment, so I started learning hand tool

woodworking from books as classes were not available at the time. I remained almost machineless until 2020, when I got my first jointer.

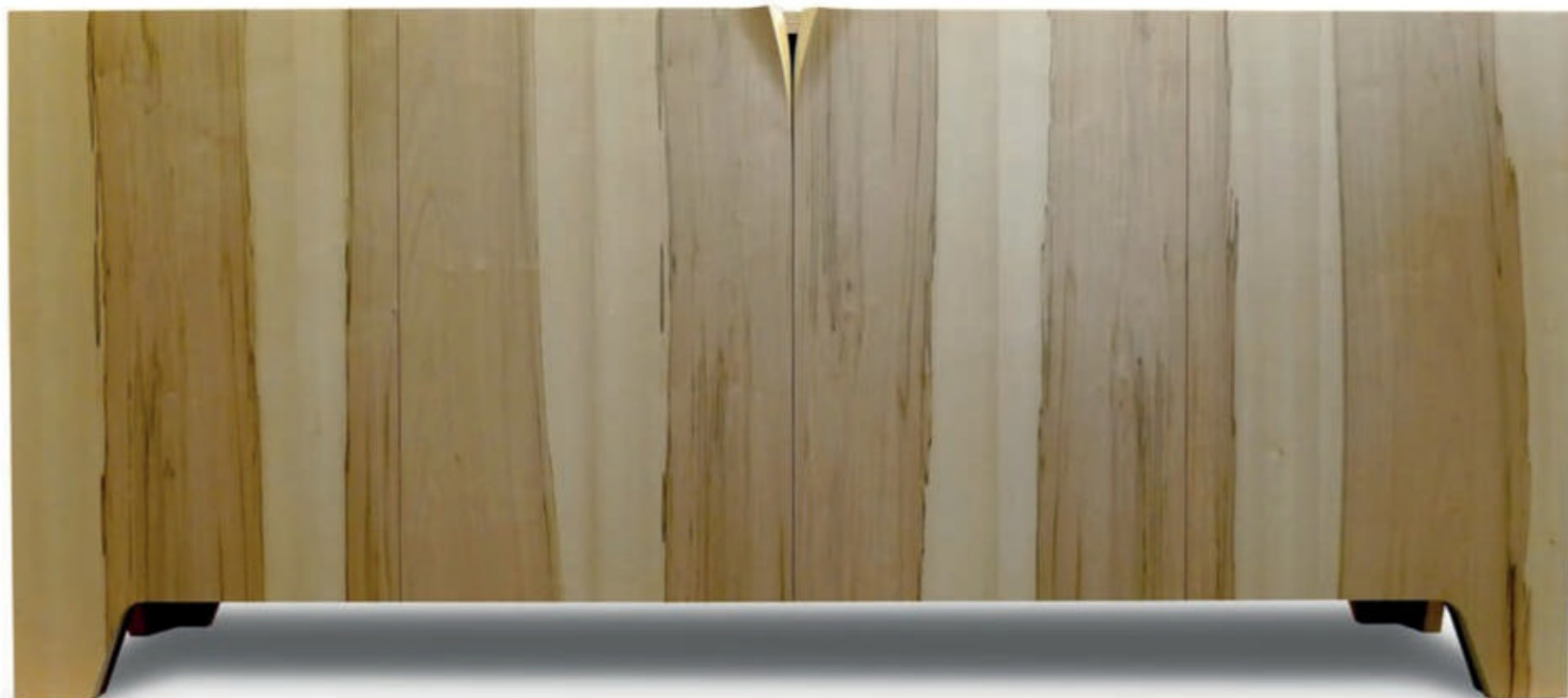
Where do you live and what is your workshop like?

I live and work in a small village in the hills of the south of France. So, there isn't much to take the focus off my work. My workshop is a mix of two eras. Machines share space

with tools from the 1870s. As I'm a hybrid woodworker, I rely a lot on hand tools for joints and finessing. Machines content themselves with the grunt work. So it's a curious half-and-half between industrial and bucolic.

What's important to you as a maker?

Technique is only a tool. The best aspects for me are the ideation, and the final reveal. But the process



in between both has its perks. I particularly enjoy the 'meditation' of using hand tools, taking the time to do things right rather than fast, crunching my wheels on a complex joint, arranging the wood's grain and colours the best way possible, and always keeping the doors open for as long as possible to adjust or change an aspect of the piece as I go along. That's why I rarely draw precise plans. And finally, it's how people react to my pieces, I admit.

How would you describe your style?

I'm not sure I have a style. I mean, yes, I have this thing with apparent and/or through joints that, to me, bring depth, quality and meaning to a piece, and I also have a thing for simple streamlined lines, almost austere. But in terms of style, I have the feeling that I prefer to explore various influences to learn more, rather than build a catalogue or collection. That's why I only do one-offs, and sometimes pair two pieces stylistically. It might not be the best commercial idea, but it is my way to keep the passion alive and well.

What are you working on now?

Building a showroom for my non-commissioned work. And wondering what the next piece will look like.



What is the best thing about woodworking and the lifestyle you have chosen?

Doing what I love. Creativity. Freedom. It has a price, but I'm glad to pay it.

Photos: Julien Hardy

Learn more about Julien Hardy
@ebenisteriedebbranchee at
www.julienhardyebeniste.fr

Opposite: Julien Hardy in his studio in France.

Above: *Sideboard at Will*, solid oak, 'sculpted' doors veneered in maple.

Left: *'Neon'* is halfway between a display cabinet and showpiece, a frame for collectibles that brings together modern lines and traditional joinery. Solid white oak, gilded back panel.'

Below: *nature against Nature*, Liquor cabinet in solid oak and cherry from my village.





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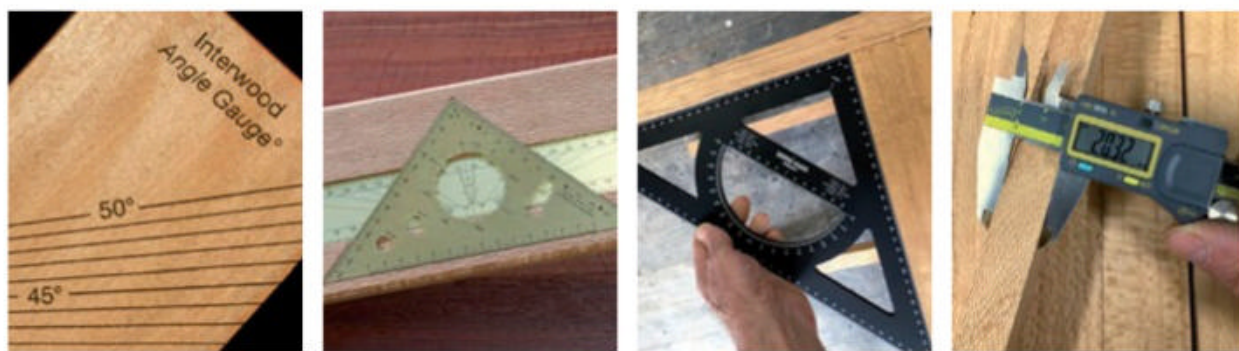
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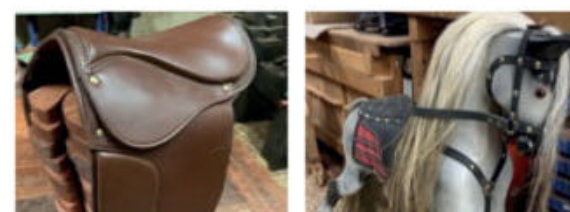
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Expressions in Wood

An exhibition of work titled 'Grain' by the North West Woodcraft Guild highlighted the diversity of techniques which woodworkers can use to explore the ideas and forms that inspire them. Review by Stephen Oram.



The town of Ulverstone, where the Leven River flows into Bass Strait in North West Tasmania, is home to a building called 'Hive'. Hive houses the visitor information centre and gift shop, a café, Ulverstone Museum and Gallery, Tasmanian Science Centre and Planetarium, and community arts and crafts studios, namely those of Leven Regional Arts and the North West Woodcraft Guild.

As part of Hive's autumn program of events, the Woodcraft Guild recently held a rather poignant exhibition entitled 'Grain'. The 114 pieces produced by 39 members reflected the history of the guild with the inclusion of works by seven deceased members, all of which were given a place of great esteem.

At the entry point to the gallery, one's attention was drawn to Sue Pitchford's *Mythical Dragon*, a wall mounted piece made of Huon pine with blue sapphires. Immediately opposite was a *Quilt* of 72 squares displaying the wide variety of timbers available to woodworkers throughout the world.

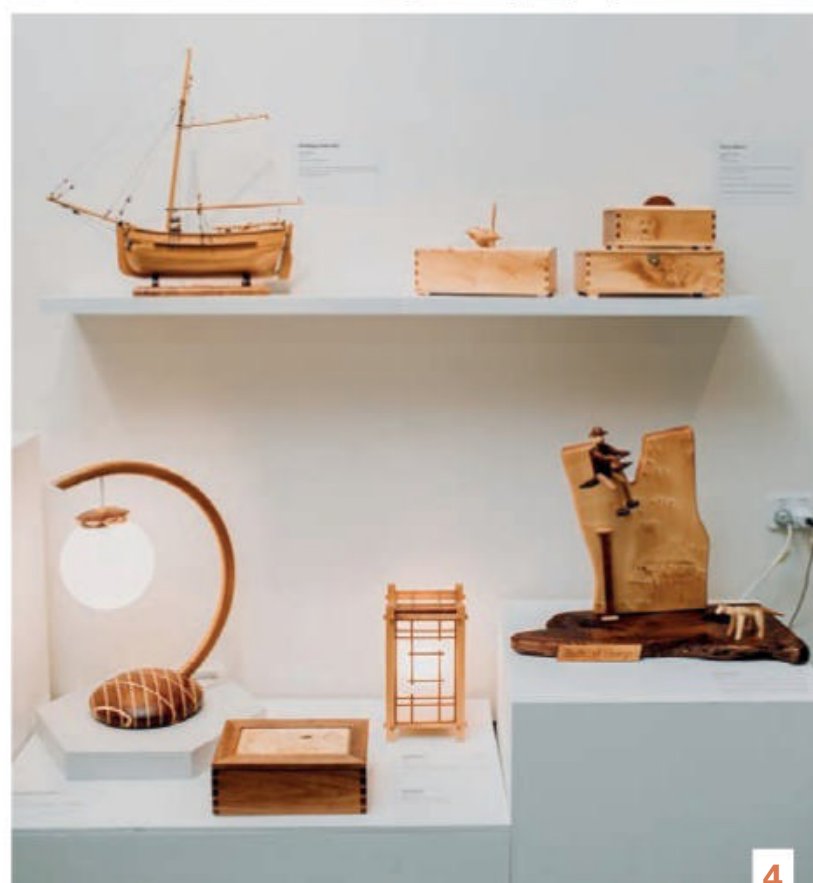
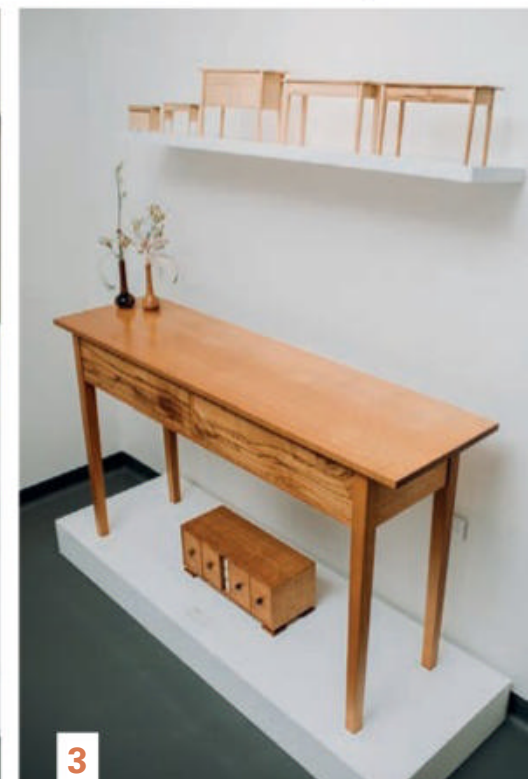
The squares also depict some of the techniques makers use to express ideas and interests. To this end, the quilt shows examples of intarsia, chip and relief carving, turning, pyrography, veneering and marquetry, scrollsaw work, and joinery (as extolled by Anne Williams, curator of the quilt, in her kumiko squares).

It is not within the scope of this article to give a blow-by-blow description of every piece in the exhibition. Suffice it to say that pretty well every aspect of woodcraft, including tree felling and milling, was represented. And in a sense the quilt is representative of the exhibition itself, as it shows the range of skills, abilities, and ideas of beginners through to accomplished craftspeople. In fact, the quilt is now on permanent display at Hive.

There were no prizes and no prices in this exhibition, as the main aim was to showcase guild members and their activities. According to Leanne Midgley, president of the guild, the exhibition also marked a transition from the past through the present and to the future. This reflects the physical reality of the guild moving to new, purpose-built premises in Hive.

Main: Kit Wareham-Norfolk, *Clock*, made with the aid of CD and CNC.
Photo: Dylan Proctor

1. A *Quilt* of 72 squares curated by Anne Williams depicts the variety of timbers and techniques available to woodworkers.
Photo: Stephen Oram
2. J.Gardiner, *Sewn Together*. Photo: Dylan Proctor
3. Jane Lemon, *Bothwell side table* with developmental maquettes.
4. *Model of the Norfolk* by Phil Midgley, boxes by Pat Hawkins, lamp by Leanne Midgley and Laurie Milburn, jewellery box by Geoff White, shoji lamp by Pat Hawkins and *Path of Change* by Werner Warsing. Photo: Dylan Proctor





Different approaches may be taken towards the making of an object, whether it is to be functional or otherwise. Usually we start with an idea of what the object will be, then move on to details such as materials, ergonomics, dimensions, appearance and style.

Often this involves drawings. Sometimes drawings lead to scale models, a good way to anticipate and resolve 'problems' and to see the design three-dimensionally. This part of the process was shown very nicely by Jane Lemon with her side table entitled *Bothwell* (a town in Tassie). On a wall-mounted shelf were a number of maquettes, progressing from MDF through to solid timber, detailing the changes in design along the way, with the final full-scale outcome below.

Other pieces come about by a sort-of-suggestion from the material-to-the-maker, as exemplified by Sue Pitchford's *Snake*, made from a sinuous branchlet of *Casuarina* and embellished with pyrography and carving, and David West's *Mother and Baby Bird* which is composed of a stylised carving of an adult bird with its chick, nestled in a dead Huon pine 'bonsai'. Patricia Charlton's driftwood collage *Raw Imagination – Boundaries are Imaginary* says it all – not only is the piece a product of the maker's imagination, but also of the viewer's perception!

Then there is the increasingly popular method of re-purposing and re-configuring, as seen in J.Gardiner's *Sewn Together*.



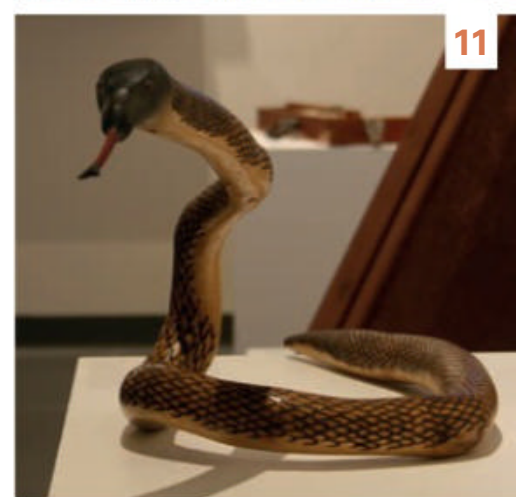
Mostly though, we plan things out and generally work to the plan, especially when CAD and CNC enter the picture, as they did in Kit Wareham-Norfolk's *Clock*.

Pat Hawkins' *Useless Box* has a retro metal switch on the front, and the sign on the wall dares viewers to use it. Upon activation the hinged lid slowly opens to reveal a fluffy pink wide-eyed creature. Pat's other offering is a *Trick Box* which to all appearances is fully sealed off from the world. We are invited to open it but after ten minutes I gave up, scared of breaking it. Definitely the results of planning.

My interest in lighting was piqued by some free-standing lamps. A collaborative effort by Leanne Midgley and Laurie Milburn (one of the guild's long-term mentors) uses curved laminating and a number of turning techniques, resulting in a correspondingly elegant curvilinear form.

Once again, Pat Hawkins *Shoji Lantern* shows us that boxes take many forms. Here there is a delicacy of construction which complements that which the box holds and disseminates – light.

James Bradley (featured in the very first issue of this magazine) presented a pair of standard lamps. *The Two of Us* has small, blue, mercury reduced fluorescent globes set in black metal 'halos' atop rectilinear myrtle columns



attached to triangular, quasi-pyramidal bases of myrtle burr veneer. Perhaps the style of this work could be said to be Art Deco, or Bauhaus, maybe even Biedermeier. When asked, James described it as new work, while acknowledging that it derives influence from each style. Certainly the results of planning.

Stringed musical instruments comprised a large section of the orchestra...oops, exhibition. Acoustic and electric; fretless and headless, ukes, guitars (including a cigarbox), dulcimers and sticks. More than an octave, with a medley of materials: tiger myrtle, Huon, blackheart sassy, King Billy, celery, blackwood (fiddle of course), jarrah, sheoak, maple, spruce, and euc(alyptus). I loved them all, along with their support staff – music stands, instrument holders and cases. Note that a large number of the instruments are the results of participation in courses by Peter Winskill, of which more are planned.

There were many more pieces shown which included wonderful examples of turning, intarsia, marquetry, carving and scrollsaw work. In all of these areas talent abounded.

From the artists' statements one gained a sense of the overarching reverence for learning, particularly through mentoring, that is the 'raison d'être' of the North West Woodcraft Guild. Hence the lack of prizes – everyone is

5. Musical instruments were well represented in the exhibition. Shown here a dulcimer, cigarbox guitar and mandolin made by students at one of guild member Peter Winskill's courses. *Photo: Dylan Proctor*
6. Pat Hawkins, *Shoji Lantern*. *Photo: Dylan Proctor*
7. *Mythical Dragon*, Huon pine, blue sapphires. *Photo: Stephen Oram*
8. Peter Winskill, *Guitar and music stand*. *Photo: Dylan Proctor*
9. James Bradley, *The Two of Us*, solid and veneered myrtle, fluorescent globes. *Photo: Dylan Proctor*
10. David West, *Mother and Baby Bird* – a stylised carving of a bird with its chick nestles in a branch. *Photo: Stephen Oram*.
11. Sue Pitchford, *Snake*, Casuarina embellished with pyrography and carving. *Photo: Stephen Oram*

encouraged to 'have a go, and learn from mistakes'. This recognises how we all work to different personal standards, hopefully striving to improve our skills along the way.

The exhibition titled Grain ran from March 23 to May 26, 2024 at Hive, 50 Main St, Ulverstone, Tasmania. Learn more about the North West Woodcraft Guild at www.hivetasmania.com.au/northwest-woodcraft-guild

Stephen Oram lives in Somerset, Tasmania and in the course of 35 years has designed and made cabinetry, boxes and sculpture. Since 2002 he has specialised in the making of Celtic folk harps.

Paying it Forward

'If you ask me what kept me in India I would say first labour, then labour of love, and then love', says French-born cabinetmaker Bram Rouws.

We asked Bram Rouws about his traditional French guild training and the journeyman's travels that led him to establish a furniture making business and a woodcraft school in Mysore, India.

Can you tell us about your background?

I hail from Limoges, France, where I initially began my journey in patisserie alongside my father. Subsequently, I embarked on a new path by enrolling in the Compagnon du Tour de France system at the age of 18 as a joiner and later cabinetmaker through an apprenticeship within the Tour-de-France system.

Compagnon is a guild and a brotherhood where we are vetted through a masterpiece. Following the completion of my masterpiece, I became affiliated with the title of 'Limousin la fraternité'. This transformative

journey spanned over ten years, from being an apprentice to being vetted alongside two years of service.

So what took or drew you to India?

As part of my journey as a Compagnon, I arrived in Kolkata, India, where I worked with Terra Indica. Their mission was centred on providing vocational and skill training and placement in carpentry to children from orphanages. This collaboration marked the inception of my company later on in Mysore, laying the foundation for its establishment and growth.

My motivation was rooted in the concept of social giveback. During this time, we had responsibilities such as managing the hostel and conducting evening classes. My aspiration was to seek the most conducive route to excellence.

Today, I take pride in being a part of this guild and as a representative. This system is free and is based on volunteerism and service, where we make it through an arduous journey and eventually take it as our duty to teach and ensure it remains perennial.

Further if you ask me what kept me in India I would say first labour, then labour of love and then love.





Opposite page: Bram Rouws with the *Ellipse* table in American walnut, initially designed to showcase the potential of a 5 axis CNC machine. *Photo: Govind Vishwanath*

Left: A milestone moment – Bram Rouws (centre) receives formal guild recognition as a Compagnon.

Below: A more recent milestone as Bram Rouws stands literally at the helm of Bram Woodcrafting School during the week it opened.

Bottom: *Ergos* stool/stand, American cherry. Designed to provide support and comfort while standing or working at a high workstation. *Photo: Govind Vishwanath*

What was the scene for commercial furniture makers like when you arrived in 2017?

BWS initially aimed to penetrate the interiors market. However, we started by focusing on furniture production. Collaborating with architects and interior designers, we crafted unique, artisanal furniture pieces, distinguishing ourselves as a mom-and-pop workshop dedicated to quality craftsmanship. In our recruitment, we hired architects as furniture designers, and as the trend shifted towards furniture products, we were privileged. That changed the way we do it, see it, and think about it.

Did you have backing to set up a business? How did you find your way through the necessary legal and commercial red tape?

It has indeed been a challenging journey, yet I found myself driven to understand the intricacies of rules and regulations. I personally funded the initial set-up costs. In our first year, we secured a significant contract for brand development and design, which enabled us to expand our team. This helped me to continue pushing forward.

The structure of the company needed to be reconsidered to ensure coherence in terms of skills, vision, capabilities, human resources, opportunities, and so on. This ultimately led us to a standardised size for the company. The final step involved partnering with the well established Vagh Group.

Currently, we seek to determine the optimal balance between the company's vision, process, market, and system, and the needs of the team as we pursue organic growth.





Left: The factory floor at BWS, a company now comprised of 120 people who work in various capacities. Traditional woodworking machine and hand skills still feature in factory production that also extend to digital design and manufacturing processes.

Below: Corinthian chair, *Ratio* collection – designs based on classical proportions and with hand carved detailing.



How many staff do you have? What do you make and who is your clientele?

Today, we stand as a company of 120 individuals, encompassing various departments beyond our furniture division. Our departments cover and include interior design, wooden cabin construction, and the production of doors and windows.

Additionally, we've recently launched an initiative to incubate a woodcrafting school, which commenced operations just this month. Our core focus remains on serving both B2B and discerning individual customers seeking bespoke products and tailored interior solutions, along with entering the retail market.

What's your machinery and equipment set-up like?

We are well-equipped with both classical and advanced woodworking machines, including a 3-axis CNC machine. Our future aim is to invest in mass manufacturing equipment and a 5-axis CNC.

Bram, do you still work on the tools, or are you mostly tied up with management/training?

Unfortunately, it is rare that I feel the satisfaction of finishing an item or ouvrage. In addition to my management responsibilities, I enjoy playing a role in providing technical advice and solutions for all our projects. My overarching goal is to empower the team to become self-sufficient, ultimately aiming to transition to a teaching role at our recently established woodcrafting school. As a new step towards this goal, I have taken on teaching responsibilities at the WCFA architecture school in Mysore.

What are your (personal) favourite furniture making jobs and tasks?

While my inclination has always been towards teaching and management, it's amusing, but I find pleasure in the precision of striking dowels, sawing tenons, and chiseling.

What is the best thing about your work?

I enjoy verifying concepts, and I'm happy when they are developed in a manner that aligns with the constraints of time, space, excellence, craftsmanship, geometry finishing, and proportions, and when my team collaboratively achieves this balance within our company.

What's your ultimate goal for the business?

Our aim to ensure sustainability in our business practices, and to foster happiness and satisfaction among both our team and clients. We strive to become pioneers or a reference point in India's woodworking industry, elevating India's recognition on the international stage.

We're committed to teaching and incubating other businesses through training initiatives. Our base principles can be summarised as innovation, conservation, sustainable development and education.

Learn more about Bram Rouws and Bram Woodcrafting Studio at <https://www.woodcrafting.in/>



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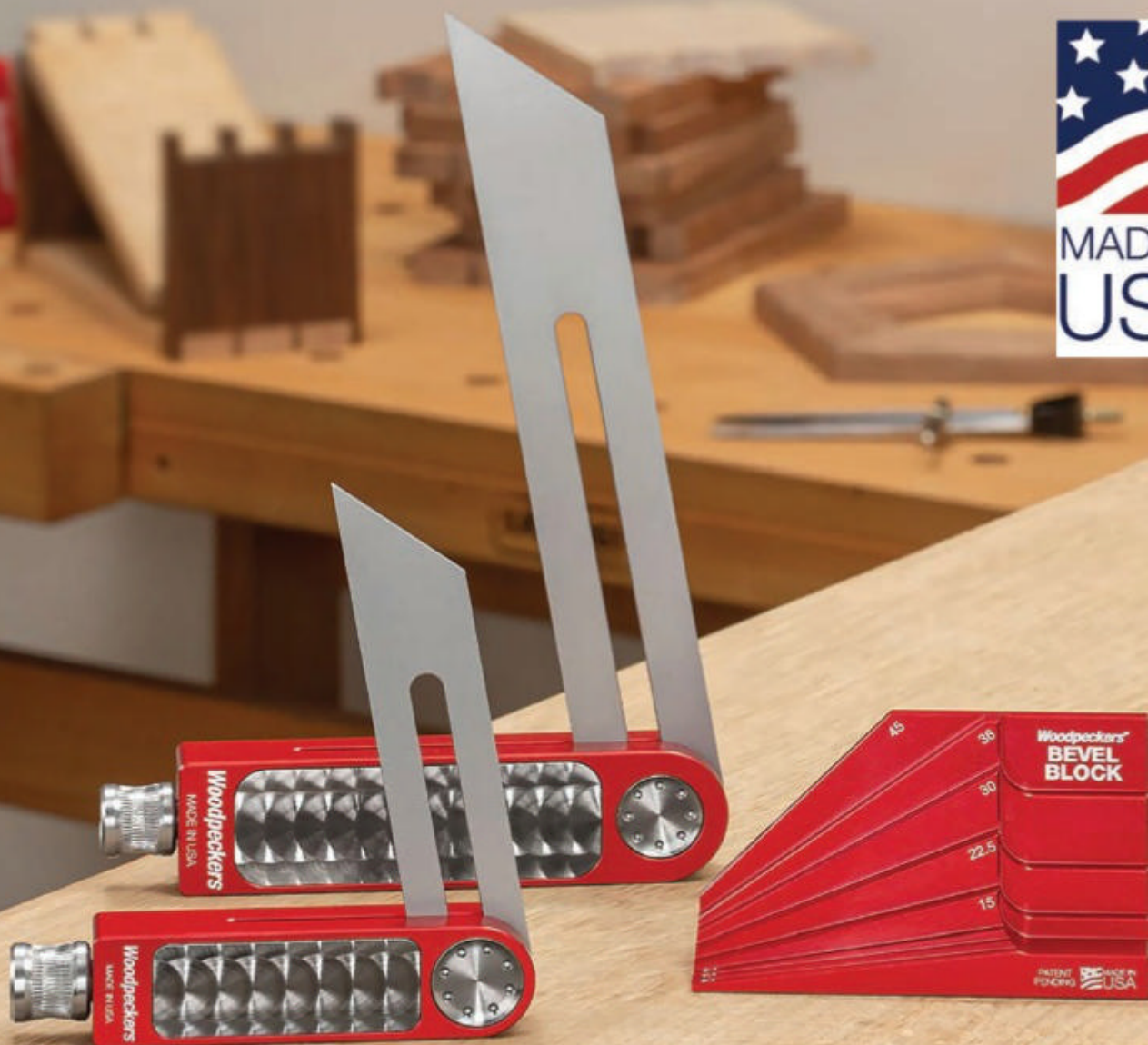


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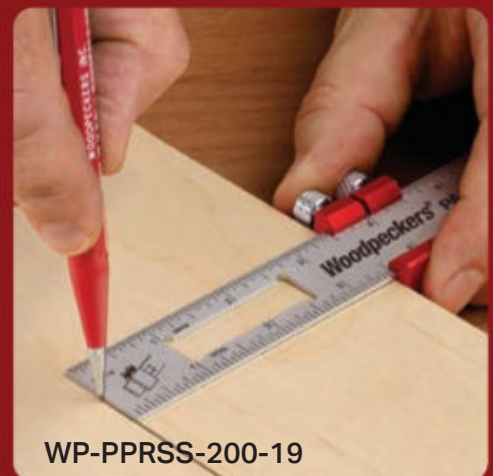


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