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The body and sides are accurately milled jatoba. The assembled plane has a 38mm / 1 1/2" blade bedded at 45° and is about 292mm / 11 1/2" long by 57mm / 2 1/4" square.

** Timber species for planes may vary due to availability*



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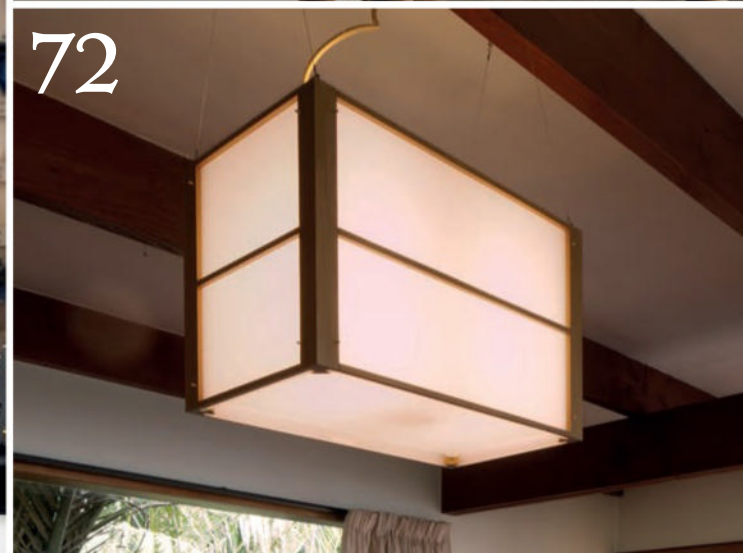
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Editor's Letter

I've mostly kept my private life out of the magazine, basically because I figured it wasn't really that interesting for other people. But now worlds have collided, so to speak, because I must report on the sudden death of my husband. Many of you know Raf Nathan personally and many readers will have read the reviews and articles he wrote for the magazine over the last 30 years.

Together, Raf and I founded and produced Australian Wood Review until it was sold to Yaffa Media in 2013. Before that, at the outset, we split the tasks and called ourselves editor and publisher, even though we didn't then really understand the entirety of those roles. Neither of us likes being told what to do, so in those days we basically just did everything, and cleaned up and put the rubbish out.

You will understand that I am totally devastated by this, as is our beautiful family. I didn't have the wherewithal to put a feature together on Raf for this issue, however the September issue will contain one. He can't say no to that now, and he was influential in our wood world.

When you talk of industry contributions, these are not things your kids will or should ever thank you for. Even writing that underscores how overblown that can sound. That is not to negate a life that was, in the main, steered by simple values and which did make a difference. I have received many expressions of condolence and I really do appreciate that, thank you.

In this issue

We've all heard of mistakes being called 'design opportunities'. Putting a positive spin on your stuff-ups is a way to move forward when things go wrong. Dan Spielman goes further and sees meeting challenges as evidence of his own progress. The cabinet he won a Maker of the Year award for last year is a case in point. Made over a good period of time from recycled timbers there were obstacles, however it was an eventual triumph, see p.52.

Many woodworkers I've met have a past – meaning an earlier career or lifestyle. Woodworking is usually a vocation of choice, never driven by a desire for social or economic advancement. Dom Grasso traded the suit-and-tie life of a litigator for that of the workshop and talks about that on a personal level in his article for this issue. He also explains some of the practical elements of steambending components for his *Volta* chair, the design of which symbolises his about-turn in the world.

Another example is Ben Adams who has traded a good deal of time spent on the stage for the workshop. Making chairs, he needed extra tools so he made them – and now he also produces tools as well as furniture to sell. Perhaps the challenge is to sometimes let life take the lead.

Maker of the Year Awards

You still have time to enter this year's Maker of the Year, presented by Hare & Forbes. Now in its 7th year, Maker of the Year is an exciting global platform for the best in fine woodworking and we invite you to include your work. This year there are six categories, noting that you can enter the same piece in more than one if you wish. For all information and to enter, please see www.makeroftheyear.com.au.

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Kate Stehr in her workshop in the Illawarra, NSW.

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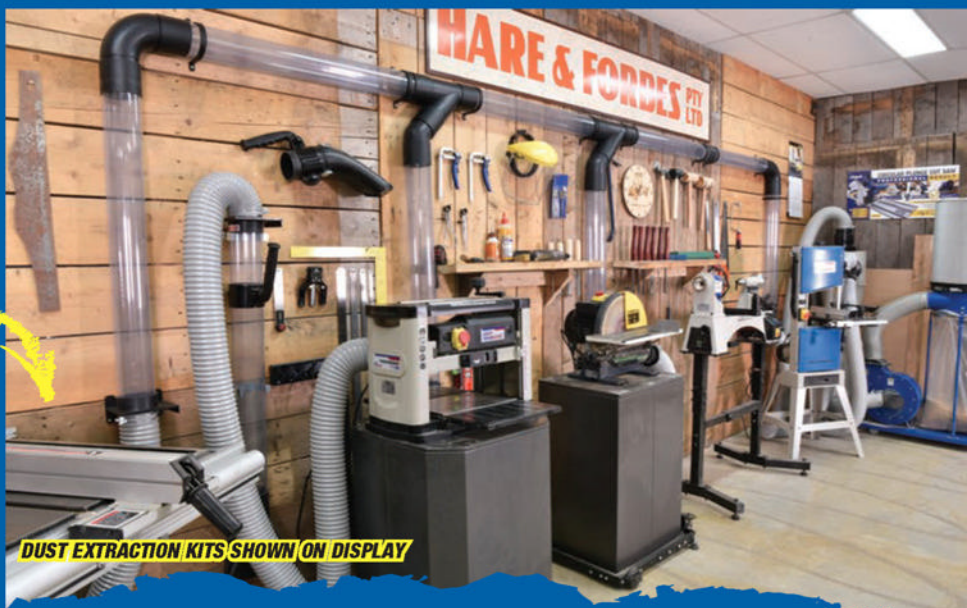
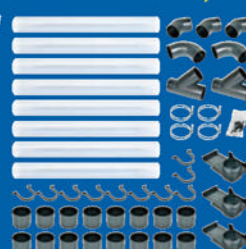
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Hock Plane Kit

Reviewed by Robert Howard

What is it reasonable to expect when you buy a kit like this? If you are like me your answer will probably depend on whose name is on it. In this case, it is the well known Hock brand, long associated with quality plane blades.

Searching the small type on the box shows that it is distributed by another well known name, Veritas Tools. That makes sense, because a while back Ron Hock retired, and his company was purchased by Lee Valley Tools, which has Veritas Tools as its manufacturing arm. The kit is made in Canada, home of Lee Valley, but the blade is made in France.

I think most woodworkers, given these names, would expect the kit to be of a high standard, capable of being assembled from the parts supplied, to get a quality plane as a result.

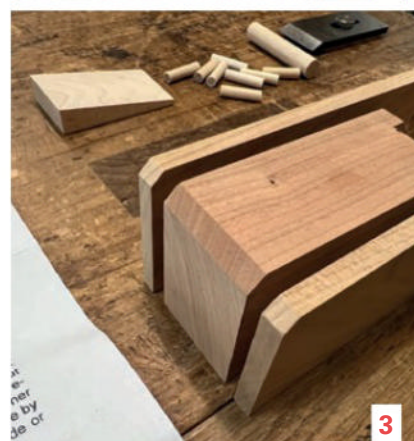
Now there is no question that you can get such a plane, and I did, but it might not be that straightforward.

When you open up the box, you need to check every part – for squareness in particular. We are a long way from Canada, with a very different climate. As a result, not all the edges were square,

and needed to be adjusted with a plane. In particular, the slope that was to support the blade had to be square to both sides.

The next thing I checked was how the pieces aligned with the cross pin in place. My reasoning was that the cross pin needed to be square across the body so that it was parallel to the slope that supported the blade. However, when I inserted the cross pin into the two sides, the sides did not align on any of their edges. They could be forced to align without much trouble, but what would this mean for the squareness of the pin across the body?

It did occur to me a bit later, after I had planed and docked the pieces so that they did align, that maybe they were meant to be out of alignment, because when I went to fit the wedge I found it was not only wedge shaped from top to bottom, but also from side to side. Who knows – maybe it would have been a neat fit if I had left everything alone. Once again I had to plane the part to its required shape. At this point it is a good idea to check that when the body is assembled there is enough room between the cross pin and the rear body piece to allow the blade assembly and the wedge to be fitted in place.



1. The plane kit arrives packaged with instructions. Below the box is my proposed shape for the plane. One of many possibilities.
2. The components come with small dowels that are used to align parts when gluing up. After dry clamping in position (no glue), holes were drilled, top and bottom, on both sides at each end to take the dowels.
3. Lining up the plane body parts.

With all this done, I glued the body together and turned my attention to the blade. This is a typical Hock type, with a thick blade (5mm) and a fitted chip breaker. I was very pleased to find that the chipbreaker was made with a slight curve, so that it sat on its front and rear edges and tightened down nicely with no gap under the front.

The blade, however, was another story. Some kind hearted soul in the factory had decided to make it a bit sharper, but in doing so they rounded over what was, until then, a beautifully flat back surface. I took the less difficult way to correct this, and ground the bevel to remove about 1mm off the length of the blade, which successfully removed the round-over. Then I could sharpen it.



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4. The ends of the sides did not align when the cross pin was in place.
5. The set-up for gluing. Two chipboard strips were used to apply even pressure. They were cut short each end where the location dowels were to avoid the glue squeeze-out. The dowels were cut off later when the plane was reduced to its final size.
6. The finished plane. I would leave it roughly finished like this, and allow it to develop a natural patina through use.



Once the glue had set, I set about fitting the blade assembly to the body. If all has gone to plan, the mouth needs to be filed or cut open to allow the blade to protrude. With care, you can make the mouth as fine as you wish.

The final step was to shape the body to my liking. Being a carver, this was the fun part for me. In doing so, I cut the top of the wedge down so that it did not sit higher than the end of the blade, which would have made it harder to tap the blade sideways when necessary to get a shaving of even thickness across its width.

One final comment I want to make is about the wood. The northern hemisphere is simply not endowed with hard wood. I have bought travishers and spokeshaves made from wood like hard maple, but they wear very quickly.

Species supplied will vary. This plane body is American cherry with a Janka hardness of 4.0–4.2kN, which means it is softer than the maple (6.4–7.3kN). This puts the cherry around camphor laurel or sassafras, but softer than Qld maple or celery top pine. If you want your plane to last, it would probably be a good idea to insert a plate of something like gidgee in front of the mouth to prevent excess wear there.

As with everything in woodwork, adjusting and using wooden planes is a skill that you have to learn, but if you have any doubt about what these planes are capable of, google and watch any of the planing competitions that take place in Japan. If that doesn't blow your mind, I don't know what will. It might also encourage you to have a go at building this one.

Hock Plane kit supplied by and available from Professional Woodworkers Supplies, see www.woodworksupplies.com.au

Robert Howard teaches woodworking and woodcarving from his Brisbane workshop, roberthoward.com.au

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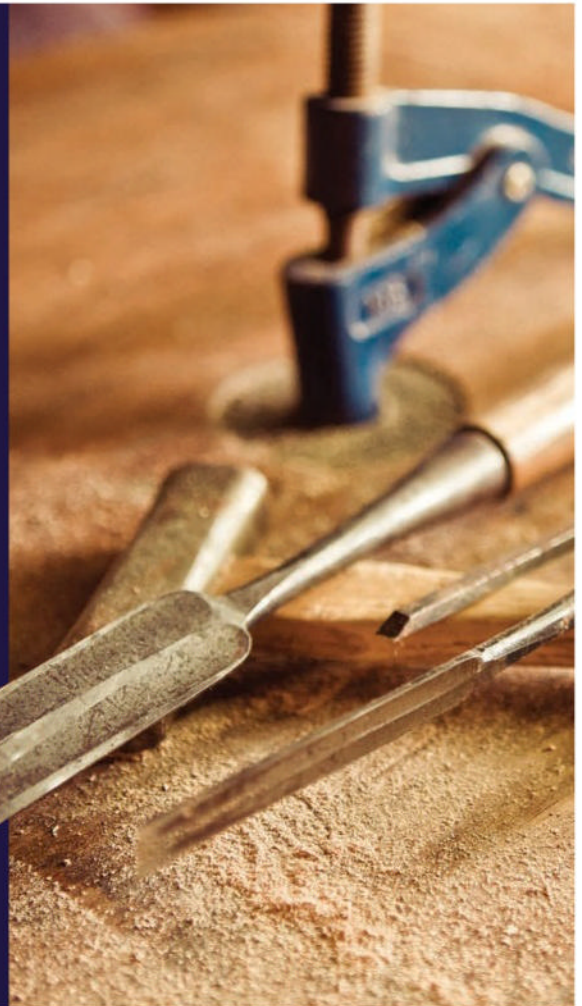
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Suizan Saws

Reviewed by Raf Nathan

These saws are made in Japan in Tsubame-Sanjo, an area known for its deeply interconnected community of artisans and factories. In this case partners Suizan and Nakaya make these saws with a mix of modern machinery and traditional care at all stages of production.

Amongst all the processes of making a saw, the one valued here the most is *metate* — the delicate art of tooth shaping and sharpening. Even a slight difference in angle can completely change cutting performance.

Flush Cut SFL-004

This is a very handy saw and although called a flush cut it will still rip and crosscut with ease. One edge is 17 teeth per inch (tpi) and marked for hardwood and rip, while the other edge is 25tpi and marked for soft wood and crosscut.

The saw is 310mm long overall and the simple wood handle is comfortable in the hand. The thin

flexible blade is 0.3mm thick so it is easy to flex down for flushcutting.

I trialled it trimming some Tasmanian myrtle tenons and the results were good. The softwood edge is definitely the easiest and best to use. This saw achieved flush sawing quickly without leaving any saw scratches on the wood surface. Given the price I thought it good value.

Dozuki Dovetail D-001

Newly released is this fine saw which has 25 teeth per inch. The handle is a basic poplar or similar wood and the blade has a steel spine.

This is a great little saw. It cuts very fast leaving a very good, but not polished, sawn face. The balance and feel are good and I used it a lot practising kumiko style work.

With a 240mm long blade it is overall 550mm long and has a 0.3mm thick blade. Replacement blades are available as the hardened teeth, although long lasting, are not easily re-sharpened.

1. Suizan dovetail and flush cut saws.
- 2, 3. Close-ups of dozuki and flush cut teeth.
4. In use, the flush cut saw was highly effective.

Available from the Amazon links on the Suizan website, see www.suizan.net

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Carbatec Vice Hardware

Reviewed by Raf Nathan

On a budget? A vice is critical for your work, and for the price, this budget vice kit that bolts to the front edge of a workbench is a great option.

For this you will need to make up a wood front face which only requires a bit of drilling and fitting. My bench has a lower rail which I had to work around for fitment, but normally a 90mm wide wood face will be sufficient.

You will also need a handle and this can be shopmade or purchase the handle kit for \$23. This dowelled handle comes ready to fit and includes two turned wood end caps that screw on.

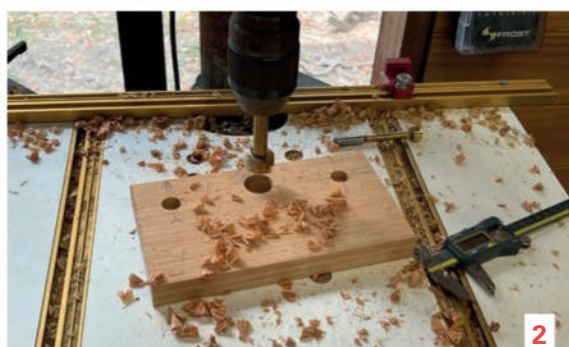
At 180mm wide, the vice is a good size for most work and the 14mm guide bars and 25mm threaded centre rod are solid and quite strong.

For the money it's a good buy. Even with the handle kit added on its still only \$81 all up for a very useable bench vice which performs quite well.

Available from Carbatec at www.carbatec.com.au



1



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3

1. Showing the CT-FV-R vice as purchased.
2. Making the front face for the vice is simple.
3. Installed with shopmade front face and supplied handle.



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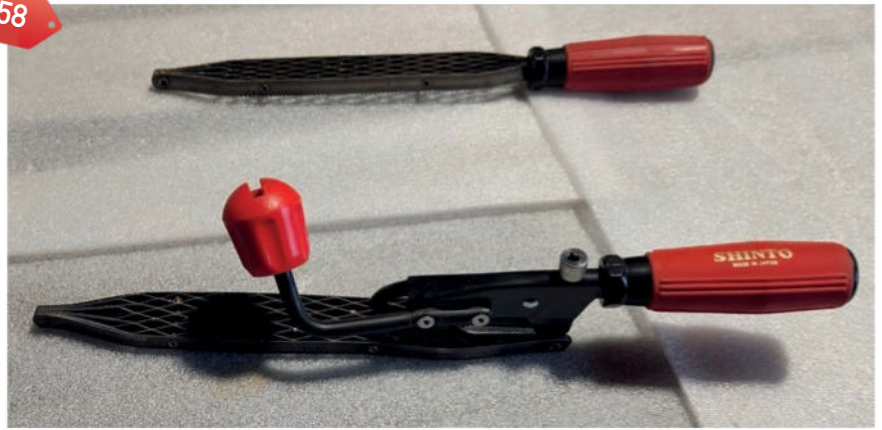
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Shinto Saw Rasps

\$58

Reviewed by John McBratney

I have struggled for years in finish-fitting endgrain, cleaning off ends of old joints and bulk removal that is too small for a machine saw and a long job by sandpaper. I noticed the Shinto rasp online as it looked interesting and bought one. What a revelation! It is a magic tool.



The rasp has what appear to be double-sided (with teeth on both sides) hack saw blades. The teeth are coarse (12tpi) on one side and fine (22tpi) on the other. Each blade is bent at 30° every 10mm left and right resulting in a zig-zag shaped double sided blade 200mm long. Eight of these blades are welded together with two straight edge blades to make a flat bottomed rasp surface on each side.

The open structure doesn't clog and is easily cleaned by tapping or using an air gun. In use it removes material very efficiently leaving a flat surface, as long

as you are careful and hold it straight and steady. Be careful also to avoid contact with the skin, the teeth are very sharp.

The one slight draw-back of the file like version is the inability to use it on large flat surfaces, for example when cleaning up after edge gluing several planks for a tabletop. Here, the handle gets in the way.

Shinto have very effectively solved his problem with a second version that has an extremely clever handle that sits

above the blade, thus allowing it to be used across a large flat surface. The handle can be attached to either the fine or the coarse side.

The rasps cost \$49 for the 210mm flat version and \$58 for the one with a handle. Worth every cent, I love them.

Available from Japan Tools Australia, see www.japanesetools.com.au. John McBratney is retired electronics engineer and woodworker in Victoria. Email: mcbratneyjohn@gmail.com



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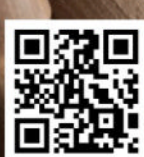
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Zen-Wu Palm Blade

Reviewed by Raf Nathan

Knives have always held a special place in human history and are often considered great works of art. With the advent of CNC becoming common-place, the engineering capacity for making woodwork tools has increased exponentially. Witness this neat palm knife with its obviously high degree of engineering, all used to create the designer's dream. You could say this particular piece of art also doubles as a workshop marking knife.

The blade is a white steel milled to slide onto the brass body via a dovetailed way. The brass then tapers out and up with multiple sweeping cuts as decoration with the brass given some sort of colour treatment. A nice rosewood handle is fixed to the brass making the tool 140mm long overall.

The base of the 20mm wide blade is perfectly flat and lets the tool work as a chisel plane. As the blade is short you can't bear down too much however I trialled it and it was pretty good for this sort of work.

As a marking knife of course it is excellent, as are all my marking knives. This one though has a good sized comfortable

handle and looks better than all the other knives combined.

The build quality is pretty well perfect with the laminated blade tip nicely ground to the centre as the highlight. The knife comes in a substantial fitted leather holder that can be belt worn to keep it handy. The price reflects the fact that it is a very special tool of heirloom quality.

*Review tool from
zenwutoolworks.com*



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Seat of Learning

Ben Adams shows how to make his carved and turned bar stool, and explains how it spawned another direction in his business as a bespoke maker.

Ben Adams' bar stool in Victorian ash.
Photo: Bryony Dux

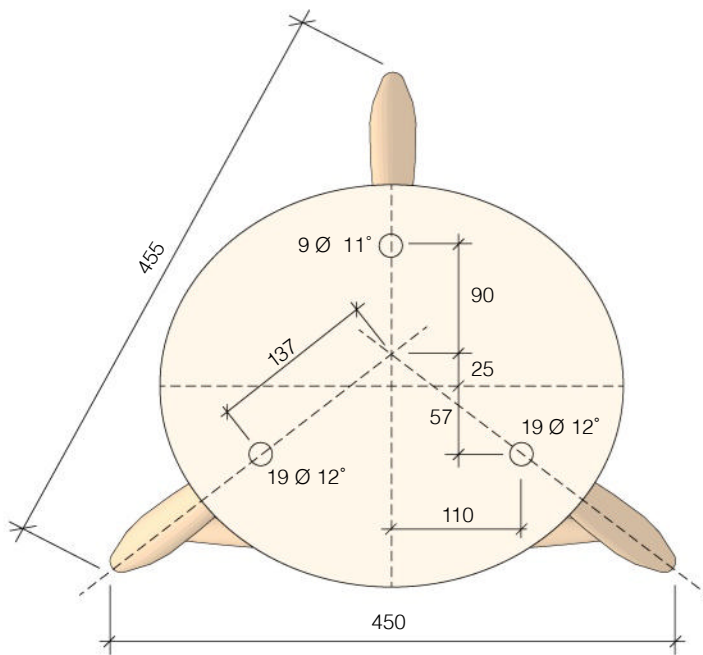


Fig. 1 Dimensions: top view (mm)

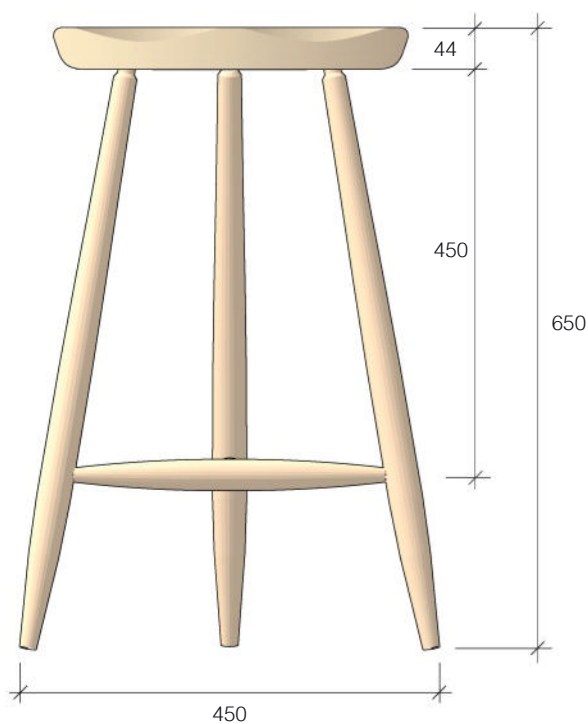


Fig. 2 Dimensions: front elevation (mm)

CUTTING LIST				
PART	QTY	LENGTH	WIDTH	THICKNESS
Top	1	380	330	45
Legs	3	750	40	40
Stretchers	1	400	36	36
	1	350	36	36
Wedges	3	45	19	4
	4	35	16	3

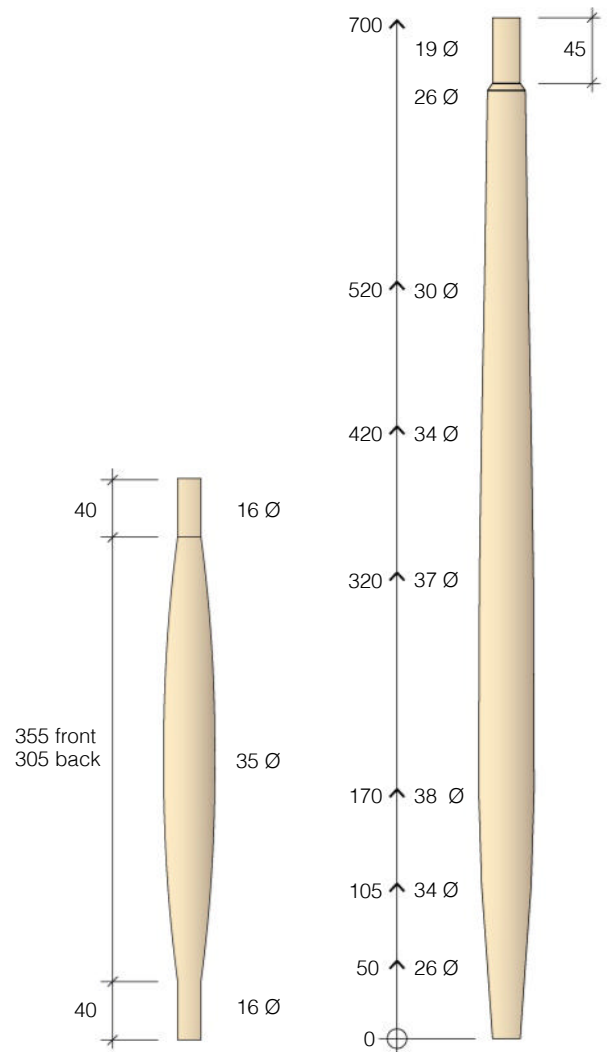
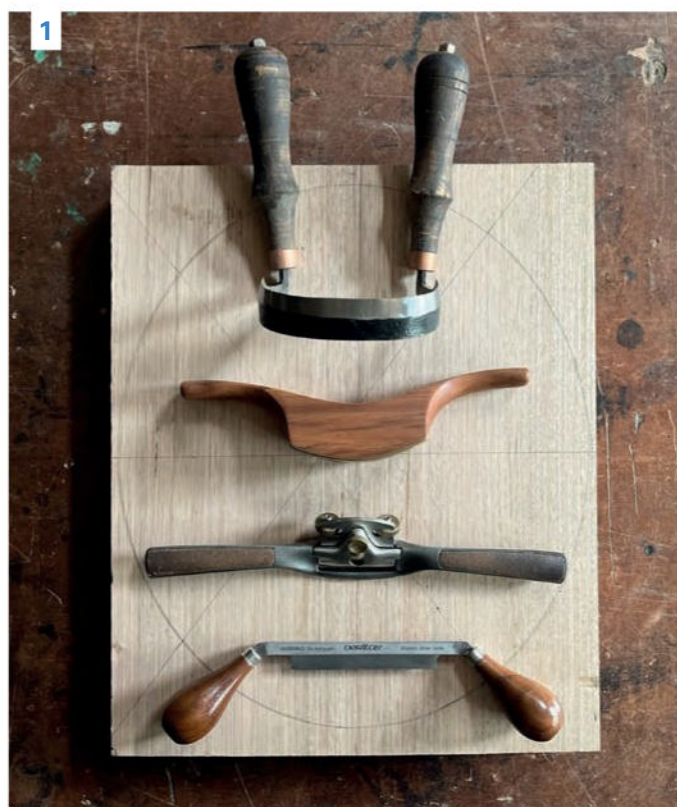


Fig. 3 Dimensions: stretchers and legs (mm)

From its inception as a client commission to its evolution into a repeatable product, this bar stool design represents a culmination of everything I'd learned on my furniture-making journey up to that point. It also nudged my business in a new and unexpected direction – though not in the way you might think. Let me explain.

A significant leap in my furniture making practice came in late 2023 when I took a chairmaking class with Bern Chandley. That experience completely transformed my relationship with hand tools. Among the many techniques I learned were how to properly use a spokeshave, what a scraper actually does, and – most appropriately – how to carve a chair seat.

I had clumsily carved a seat-like depression into one of my three-legged milking stools once before, using a gouge and an angle grinder. You can imagine how that looked. Learning a better way to carve smooth, sweeping curves was a completely different story. Shaping a seat with a tool designed specifically for the task was immensely



satisfying. This was my first introduction to the travisher.

Fast forward to January 2025, when a client brief arrived that provided the perfect excuse to make a stool with a carved seat. The initial inspiration came from perch stools like the ones Jon Grant teaches, along with the many modern interpretations floating around online. My task was to adapt that form into a bar stool with a footrest.

The challenge was to use what I'd learned over a year earlier to shape a seat that felt modern and practical, while still referencing the traditions of the Windsor chairmakers of old. There was just one problem: I didn't own a travisher.

The prototype seat was carved using a rusty old scorp and a scraper, and by the end of it I was growing impatient. I knew I wanted to make more than a couple of these stools, so one morning I woke up and defiantly declared, 'Today I'm going to make a travisher.' How hard could it be?

As it turns out – quite hard. But by the end of the day, I had two stunningly ugly travishers that were perfectly usable. Since then, I've refined that design and now make and sell travishers. This stool is incredibly fun to make and, like the perch stool, serves as an excellent introduction to Windsor chairmaking techniques.

Seat material and preparation

Ideally, I choose clear, straight-grained timber for the seat. I typically use Victorian ash, as it's easy to work and often comes quartersawn. I usually glue up two 175mm wide boards, paying close attention to matching the grain orientation to ensure smooth hand tool work. It's worth mentioning that I don't use biscuits or dominos, as there's always a risk of exposing them while carving the seat impression.

Laid out in **photo 1** are all the tools I use to shape the seat. After thicknessing the seat blank slightly oversize, I mark out the perimeter and all drilling lines on the top surface.



Call me a cheater, but I use a laser level set to the correct angle to help guide the drill bit – a technique originated by US chairmaker Greg Pennington. This guarantees the legs end up splayed exactly where I want them. Using a long drill-bit extension further improves accuracy, though it does mean you'll need to stand on a chair if you're working at bench height. Luckily, you're a chairmaker, so you should have one handy (**photo 2**).

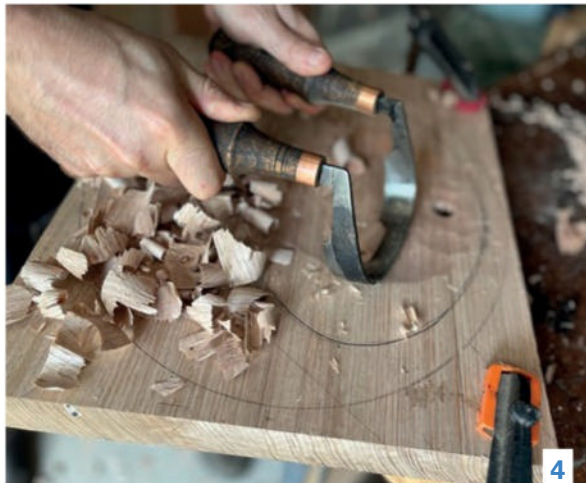
I set one laser at the desired resultant angle and a second laser perfectly vertical at 90° to the first. By keeping the drill bit aligned to both laser lines, accuracy is almost guaranteed (**photo 3**). A sharp brad-point or auger bit works best here, and a sacrificial sheet of plywood underneath prevents blow-out, or drilling into your beloved workbench for the twenty-third time.

Carving the seat

Now comes the fun part (**photo 4**). A scorp is essentially a drawknife that's been run over by a car: a curved blade with handles at either end. It takes



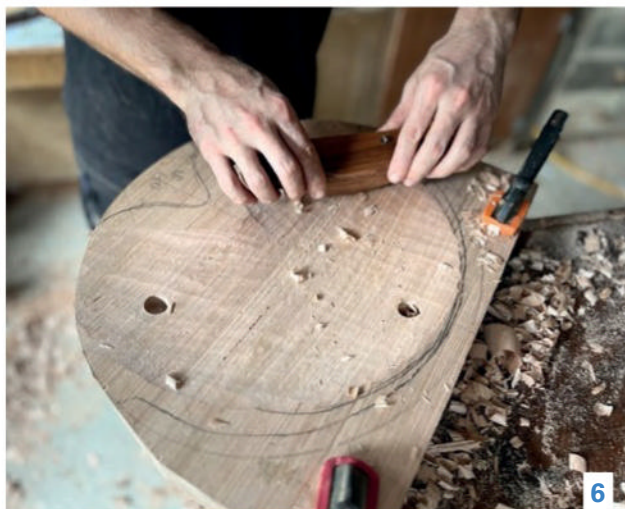
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1. Hand tools for chairmaking – from top to bottom: scorp, travisher, spokeshave and drawknife.
2. Holes in the seat for the legs are drilled in at an angle before shaping. A drill bit extension helps with accuracy.
3. Laser lines mark the spot – use a sharp brad-point or auger bit.
4. Using a scorp to initially remove bulk material from the seat.
5. The travisher is next used for shaping. The back edge is left flat until later.
6. The seat contours are progressively marked and shaped.
7. A template for profiling edge includes foolproof instructions.
8. The drawknife and spokeshave are used to shape the edge of the seat.

some getting used to, but once you find the sweet spot – where the blade slices cleanly into the fibres and exits the cut with a slight wrist roll – it becomes incredibly efficient.

Skewing the blade and cutting perpendicular to the grain helps prevent tear-out. If things start to go wrong, skew the blade in the opposite direction. This tool removes bulk material quickly, albeit somewhat roughly.

I begin by forming a concave oval at the deepest part of the seat – directly under the sitter's ischial tuberosities, or 'sit bones'. I carve down to about 10mm from the top surface at the deepest point. Drilling two small, 10mm deep reference holes roughly 50mm apart in the centre of the oval helps gauge depth.

I avoid carving within about 15mm of the back edge of the seat, leaving that area flat (**photo 5**). This will become important later.

From here on, the travisher becomes the hero. It can take fine, controlled



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cuts or remove large amounts of waste with thick, curling shavings. Once the reference holes disappear, you know you're deep enough.

Next, I carve the area where the sitter's legs will rest, blending it smoothly into the central bowl (**photo 6**). This is also a good time to cut the front perimeter of the seat in preparation for later steps. The area between the sitter's legs remains untouched for now. Like a tractor seat, the front rise should be the highest point, so I leave it until last.

Defining the front profile

Next, I carve away material to allow the sitter's legs to pass comfortably through the front of the seat. While this can be done by eye, I prefer using a simple template to mark symmetrical curves on both sides

of the centreline. (Note the highly sophisticated template I use in **photo 7**). Flipping the template ensures perfect symmetry.

Most of this waste is removed with a drawknife and refined with a spokeshave (**photo 8**). I aim for this curve to dip down to about 20mm from the bottom edge of the seat.

Switching between tools, I then blend all the shapes together, fairing the curves until I'm happy with the form (**photo 9**). It's easy to lose hours at this stage chasing perfection, but don't get carried away, as final shaping happens after the legs are attached.

After cutting the seat outline to final shape on the bandsaw and planing the underside to thickness, I mark a line roughly 22mm in from the perimeter on the underside using a

simple finger gauge (**photo 10**). This line indicates where the underside curve should begin.

Using a drawknife and spokeshave, I round over the underside (**photo 11**). That flat area left at the back now becomes invaluable as a clamping surface in the vice. Once the underside is complete, the flat can be bevelled at a slight angle with a spokeshave (**photo 12**).

Turning the legs and stretchers

Attention now turns to the legs. **Photo 13** shows three legs at different stages of completion. On the lathe, I mark all major diameter changes using calipers and a parting tool, cutting grooves to the required depths (**photo 14**). The remaining waste is removed with a roughing gouge or spindle gouge, using the grooves as reference points. Those



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with nerves of steel may choose to use a skew chisel.

The tenon is the only critical dimension, so I work slowly and check the fit frequently. This design uses cylindrical tenons simply because I haven't yet made myself a reamer (yet). If you have one and want to taper the tenons and mortises, go for gold.

I sand the legs on the lathe from 120 through to 400 grit, raising the grain with a light mist of water between grits. The stretchers are made in exactly the same way.

Assembly and glue-up

The stretcher mortises must be drilled at precise angles. Rather than measuring, I dry-fit the legs into the seat and drill the stretcher holes while everything is assembled. As long as the holes are drilled

horizontally and aimed toward the centre of the corresponding leg, everything lines up nicely.

I tightly wrap tape around the legs to prevent tear-out and use a sharp brad-point bit at high speed with light pressure. Once again, the laser level comes out to maintain a perfectly horizontal drilling line 450mm below the seat (**photo 15**).

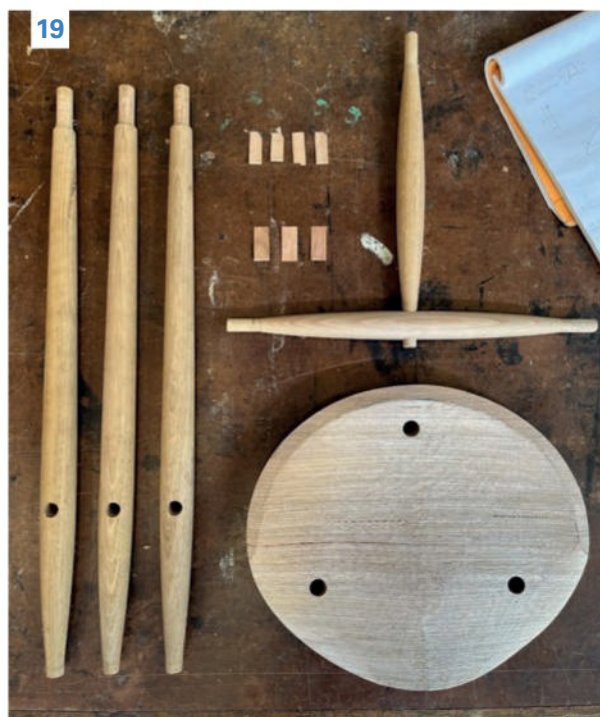
The front stretcher passes through both front legs, so I simply aim the bit at the opposing leg and let the drill do the work (**photo 16**). The same approach is used to drill through the back leg toward the centre point of the front stretcher. It feels like you're flying blind but just be brave and trust the process. You can do this.

The front (long) stretcher requires a perfectly 90° hole, and even half a



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9. With curves faired and blended, shaping the top of the seat is now complete.
10. After bandsawing the outline, the bottom of the seat is planed and marked out.
11. A drawknife and spokeshave are used to round over the underside.
12. The flat area on top can now be bevelled with a spokeshave.
13. Showing three legs at different stages of completion.
14. Calipers and a parting tool are used to mark and cut grooves to mark diameter changes.
15. Using a laser to help drill the stretcher hole at 90°.
16. Aim the drill at the opposing leg to drill the other front stretcher hole.



17. Using a jig on the drill press to accurately drill a hole in the front stretcher.
18. Another simple jig is used to split and pare the wedges.
19. Pre-assembly shot of completed components for the stool.
20. Final assembly before wedging the seat tenons.

degree off is noticeable. I find drilling this hole in a jig on the drill press ensures accuracy (**photo 17**).

Each tenon receives a wedge to lock the joint together, so with all holes drilled, I dry-fit the stool, mark the wedge locations, and cut slots into the tenons. The wedges are split and pared using a simple jig: a scrap of wood with a shelf cut into it and held in the vice (**photo 18**). The wedge sits on the shelf, and body weight drives the chisel to create a consistent taper. **Photo 19** shows all the parts laid out for assembly.

For glue-up, I first glue the two stretchers together. Final assembly involves gently persuading all the tenons home and driving wedges into

each joint (**photo 20**). The tenons are cut flush and sanded.

Final shaping of the seat is done using the travisher, scrapers, and sandpaper. I finish the stool with a couple of coats of an oil finish, or if you're feeling bold, a black Japan stain to really impress your friends.

*Process photos: Ben Adams
Illustrations: Graham Sands*



Ben Adams is a furniture maker and toolmaker who works as an advocate in his local area of the Sunshine

Coast to promote woodworking and other handmade crafts. Learn more at www.benadams.studio and Instagram @benadamsfurniture

A Journey of Reinvention



Dominic Grasso writes about his life change from the courtroom to the workshop and about making the chair that symbolised his journey.

The Volta Chair in ash.



Growing up in the Blue Mountains, my childhood was defined by the urge to create. My afternoons were spent outdoors, building forts in the backyard, making wooden swords, constructing bike jumps, and exploring nature with my siblings and neighbours. My grandfather, a skilled maker who could figure out how anything worked given enough time, was a significant influence. I recall fond memories working with him on projects around the house including building my treehouse complete with deck and sandpit.

I did not realise it at the time, but those early experiences were the initial sparks of creativity that would eventually lead me to a career in furniture design. However, somewhere during high school, I lost that passion. I followed a more traditional path, completing an undergraduate degree in business followed by a postgraduate law degree.

The legal chapter

I worked in the law for a decade and practised as a commercial disputes lawyer trading the great outdoors for the courtroom. On my first day as a paralegal, a senior lawyer offered advice that stuck with me: 'Law is 99% sweat and 1% creativity.' While I don't

fully agree – law requires its own kind of ingenuity – he wasn't far off the mark. The legal world is process-driven and can often stifle the creative spirit.

Coincidentally, during this time, I needed an entryway bench, a place to change shoes between work and home. Realising nothing within my budget fit the space, a thought occurred to me: Why don't I make one myself? Looking back I don't know why I decided to make the bench myself, I didn't have any tools and it had been years since I had picked up a saw.

Undeterred, I borrowed basic equipment from a local tool library and built a Nelson Bench with ebonised legs. Just like that, a switch flicked. I was hooked. I loved every aspect of making the bench, from sourcing the right timber all the way to the sense of achievement I felt when I applied the first coat of finish.

Woodworking became my meditation. It forces you to be present; if you lose focus, you risk making mistakes or worse an injury. The ability to step into the workshop and leave the stress of the legal world behind was nothing short of therapeutic. A career as a litigator is not always compatible with this hobby. As my legal career progressed, my time in the workshop

dwindled, leaving me longing to be back in the workshop. I could never summon the courage to take the plunge to try woodworking as a full-time career, I found all sorts of reasons not to do so.

Catalyst for change

In late 2023, my wife received a three-year job offer in Scotland. We packed our bags (and two cats) and moved to the UK in 2024. Relocating was the catalyst I needed to evaluate what was truly important. It forced me to recognise my unfulfilled need to rediscover my early creativity and pursue a more tactile path. Starting a new career feels less daunting when you are already starting a new life on the other side of the world.

Last year I completed professional training in furniture design, making, and restoration at the Chippendale International School of Furniture near Edinburgh. The course was intense, but I loved every minute of it and it proved the perfect environment to rekindle my creative spark. Set amidst the Scottish countryside, its rolling fields and beautiful coastlines allowed me to reset my mind and reconnect with nature. I was even fortunate enough to see the Northern Lights during my second week – an experience I will carry with me forever.



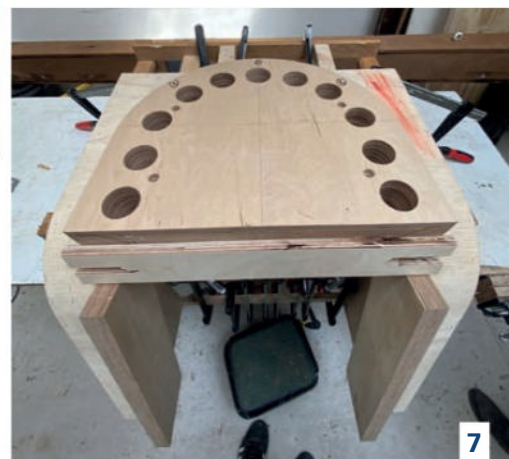
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Authenticity in design

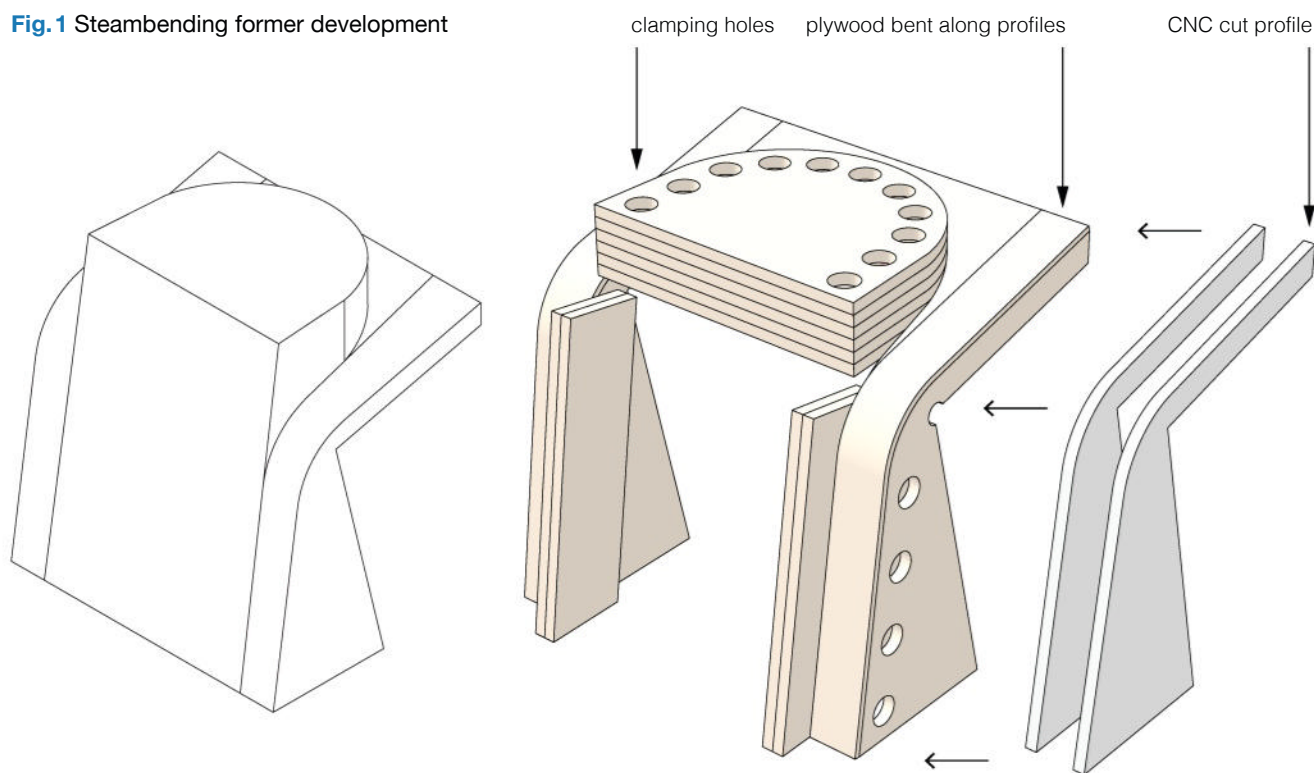
Near the end of the course, designing and making my own pieces of furniture was the most daunting challenge and one of the many doubts that held me back from taking the plunge. Whilst I felt I had a strong background in making, the designing process of translating ideas or concepts to fully realised pieces never felt like my strong point, I had not flexed my creative muscles in a very long time.

For these reasons, I wanted the work I designed to both push my abilities but also to be authentic to me. By this I mean I wanted my work to be a reflection of myself and my unique background that has influenced me as a furniture designer maker.

I have always enjoyed the way modern and contemporary design is able to express larger concepts whilst utilising very simple shapes or minimalist forms, it was these principles that drove my design process. To anyone out there that finds it difficult to start when designing a new piece I would say find something that excites you, it could be anything, your favourite building or piece of architecture or something you've observed from nature, it could even be light or shadow, start there to build a concept and you'd be surprised how quickly the ideas begin to flow.

1. Ash logs in a sawmill near Glasgow.
2. Preparing stock for steam bending starts with machining stock.
3. A basic steam box made from a wallpaper steamer and polythene tubing.
4. Quarter-scale models were made to finalise the design.
5. Plywood was cut and machined to make the formers.
- 6, 7. Showing the completed formers.
8. Do some practice runs before your first attempt and enlist some helpers.
9. After steaming and bending, attach fixings that allow greater airflow to all the surfaces whilst retaining the desired shape.

Fig.1 Steambending former development



CAD model provides data for CNC and bandsawing

plywood construction concept

10. A batch of steambent Volta components in drying racks.
11. Router jigs with guide bushings were used to cut the seat mortises.
- 12, 13. Showing the joinery for the front leg in progress.
14. A router sled was used for the initial shaping of the seat.
15. The shaped seat with joinery cut.



The final piece I designed whilst at Chippendale was the Volta dining chair and was easily the most challenging. Chair design is inherently difficult as you must consider all aspects of good furniture design equally including ergonomics, strength, durability and aesthetics. No one wants to sit in a chair that is not comfortable, but equally it has to look good from every angle.

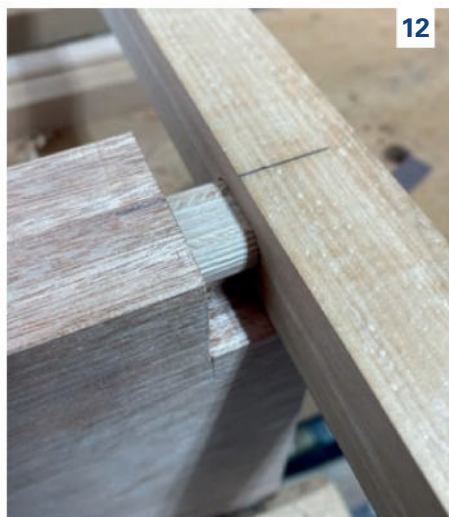
The *Volta Chair* speaks to my own personal journey and references a change in direction or perspective, as seen in the twist in the steam bent component of the chair and the most striking aspect of the design.

Lessons in steambending

Attending an earlier steambending course with the masterful designer maker Isabelle Moore was invaluable. It opened a door to possibilities I had never imagined were achievable with wood and I knew I wanted to incorporate steam bending into a piece. Most of the Volta design was consumed with achieving the steam bent element.



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Steam bending can be a very economical way of incorporating bent wood elements in furniture as it often involves less waste or use of adhesives as compared to bent lamination.

Drawing upon both my personal experience and the accumulated wisdom imparted by those wiser than me, there are fundamentals that will invariably yield optimal results and minimise failures when attempting even the most complex bends.

1. Wood selection. Not all species of wood are equal. In the UK oak, elm, walnut and cherry are the woods of choice but ash is often preferred for its coarse grain structure providing greater elasticity. Australia has a lot of hardwoods that are suitable for steambending including mountain ash (Tasmanian oak), spotted gum, jarrah, blackwood, Queensland maple.

Green or air dried timber felled less than a year is optimal. The higher the moisture content the better, anywhere between 20–40%. If you can't find suitable timber it is possible to pre-soak wood for 24–48 hours per inch of thickness prior to bending.

Select stock with straight grain that is parallel to the bending direction with minimal runout, the general rule is less than 25mm runout over a 300mm distance. I recently visited a sawmill local to me where I was fortunate enough to hand pick green logs (**photo 1**).

For the *Volta Chair* I used locally sourced Scottish ash. Ash has naturally straight grain, which prevents breakout. It also has exceptional flexibility, toughness, and shock resistance, allowing it to bend to tight radii and hold its curved form. This makes it the perfect material for the complex bends including the

twist that occurs when the backrest transitions bending planes.

2. Preparation of stock. All machining and surface preparation must be done before steambending (apart from joinery) as it will be much harder to do this afterwards. For components it does not matter that the stock is dead flat, rather that all faces are square and surfaces are prepped, therefore my process starts at the thicknesser to clean up both sides (**photo 2**). I then square off the edges and dimension to final size using the bandsaw, top planer and thicknesser.

3. Steam boxes. Take the time to get your bending formers and drying racks right, ensure they are robust enough to withstand multiple uses. A simple or makeshift steam box (**photo 3**) can be made from a wallpaper steamer and heavy duty polythene tubing. This was my



- 16. The seat stock starts at 50mm thick but is reduced to around 30mm thick after shaping.
- 17. Hand tools were used to complete the seat shaping.
- 18. Rasps and spokeshaves were used to round over the edges of components.
- 19. The chairs are glued up in stages.
- 20. Dominic Grasso with his *Volta Chair* in ash.

approach as the stock used for the Volta chair was longer than a standard sheet of plywood.

Bending straps are a great way to support the grain as it is bent but it is possible to bend without a strap in situations where the bending radius is greater than seven times the stock thickness (i.e. a radius of 175mm or greater for stock 25mm thick). Given the radius of the bend coupled with the twist, straps were essential to achieve the desired shape for the chair.

4. Bending formers. Making the bending former is arguably one of the most involved steps in the process. For the Volta chair I needed robust formers with plenty of clamping places as the bends required a lot of force to pull the stock around the tight radii.

After finalising the shape of the chair through quarter-scale models (photo

4), I used CAD to design the bending forms that would create that shape (**fig.1**), and a Shaper Origin CNC to cut these out of plywood. I then build up the form using the bandsaw (or a jigsaw) and a router table (photo 5). The finished formers can be seen in **photos 6 and 7**.

5. Steaming the wood. Be sure not to oversteam your stock, the general rule is one hour at 100°C per 25mm of thickness. Steaming for longer has no added benefit and can diminish the integrity of the wood if oversteamed. There was quite a bit of trial and error in getting the thickest stock I could that would bend to the form whilst applying the correct amount of tension on the stock whilst bending. Too much pressure and you'll get compression failures (appearing as crease or wrinkle on the inside surface), not enough and you will inevitably get breakout.

6. Bending the wood. Have a plan for this in place and do some practice runs before your first attempt. Be sure to pick a good team of helpers (photo 8)! When the wood comes out of the steam box you only have 3–5 minutes before the wood cools again and the lignin starts to harden. Wrapping the wood in clingfilm, or polythene tubing can extend this working time. If possible use blocks or cauls to prevent dents in the wood and apply even pressure when clamping.

7. Drying and resetting the wood. You need to allow the wood to dry thoroughly in its new shape, aim for around 7% finished moisture. The process of steaming opens up the cells in the wood which allows moisture to flow freely; air drying generally takes about 4–5 days for 25mm thick stock. Using drying racks or attaching fixings that allow greater

airflow whilst retaining the desired shape and flatness will also speed up the drying process (**photo 9, 10**).

Cutting the joints

While the steambent components are drying, I start work on the joinery for the seat and the back legs. I chose a finger joint for the back leg as it is extremely robust but also allows me to cut into the geometry of the joint whilst carving and shaping the seat and not affect the appearance or strength of the joint. To cut the mortise for this joint accurately and repeatably I use router jigs with guide bushings (**photo 11**).

The front leg joinery is also cut out using a router and templates which allows me to cut an accurate angle for the front leg. I use loose tenons to help with alignment of the joint and adding strength (**photos 12, 13**). After gluing up I drive two screws and plug the holes similar to a Maloof style joint.

Shaping the seat and the back legs

The last process is to shape the seat and the legs to create the organic look I am aiming for. I cut the rough shape of the seat on the bandsaw. Next I remove thickness from the underside with a router and a sled to remove bulk material (**photo 14**). The seat stock starts at 50mm thick but once I am done it is closer to 30mm at the thinnest point (**photos 15, 16**).

To refine the shape and smooth out the curves I use a combination of modern and traditional techniques including an angle grinder with carving discs for fast stock removal and then travishers, spokeshaves and rasps for more precise shaping and fairing curves (**photo 17**).

I also shape the bent component with rasps and spokeshaves, adding a nice round-over to all edges, softening the backrest and adding slight taper to the legs (**photo 18**). Once I am close to the shape I like I glue up the chair in stages, starting with the back



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legs and then the continuous bend component (**photo 19**). After the chair is completely assembled, I do final shaping and sanding to soften the transitions at the joints and to ensure a smooth organic form.

Overall I'm really pleased with the end result, I was aiming for a very organic looking shape and I think I've achieved this (**photo 20**).

I feel the design of my Volta chair is not yet fully realised, and I intend to explore the steam bending technique further, pushing the technical boundaries of tension and form to see just how far I can take the material.

What's next?

Beyond the bench, I am embracing the challenge of building a sustainable business from the ground up, navigating everything that is involved in that process. My aim is to build a studio that produces lasting furniture, that blends traditional craftsmanship with the creative freedom I have found in Scotland.

Photos: Dominic Grasso

Illustrations: Graham Sands

Dom Grasso @domgrassofurnituredesign is an Australian designer maker who currently lives in Glasgow, Scotland. Learn more at domgrassofurniture.com/

The Three-Way Mitre

A combination of machinery and hand tools can make the Chinese triple-tenoned interlocking three-way mitre joint easier than you think, explains Damion Fauser.

I first attempted this joinery in 2012 and have used it quite often since then in my commission pieces. I use it primarily for tables, but you can also create super-strong cabinetry framing with it.

There is physical and literary evidence of this joint in both Chinese and Japanese works, but it is most commonly thought of as being Chinese, originating in the Ming Dynasty. The full name is a mouthful, however the more colloquial term for it is the rice dumpling joint.

It is essentially a three-way mitre joint, allowing three separate components to be joined in the x/y/z axes – hence why I favour it for table frames.

What makes this joint so amazing is the internal structure – each of the three components features a series of carefully designed mortises and tenons that create some serious mechanical advantage and glue surface area inside the joint. When cut correctly, this is a very powerful form of joinery.

It can be cut purely by hand but is best completed with a combination of hand and powered cuts. For those not confident with hand tools, it is possible to cut purely by machine, however this does require a fair degree of creativity at the tablesaw and bandsaw.

Marking out

As I often say to my students, accurate marking out is crucial – it doesn't matter how skilled you are with your cutting tools, if your layout work is messy or inaccurate, you're simply going to cut a mistake. This is especially true with this joint, given there are so many intersecting and mating surfaces. So take your time, be neat and methodical.

There are three primary elements to this joint (**photo 1**), and I'll refer to them as the leg, rail and side rail. This nomenclature suits table construction, but in a cabinetry situation you could simply refer to the leg as the stile.



Above: Two views of Damion Fauser's Brisbane table (2018) in Huon pine and Tasmanian blackwood. *Photo: Naman Briner*

Opposite: Detail of the author's River Table (2013) in American oak with three-way mitre frame construction. Tiny chamfers can create a delicate shadow line that highlights the joinery. *Photo: Frank Pronesti*

Use of reference is utterly critical – you can very quickly find yourself becoming confused with your spatial orientation. I've used both the inside and outside edges as my primary reference points in the past, but in hindsight I believe I would now stick to using the inside edge.

This joint is very easy to scale up or down to make it proportional to your overall design. To make the joint

easier to execute, I always design the layout around a particular tool that I will use to create the deep cuts to create the leg element. This could be a router cutter, drill bit, hollow-chisel mortising tool or slot cutter. This way I can work fast and clean having designed my layout around the reality of the cuts I can make.

I've scaled this joint in the past on three key tooling sizes – 1/4", 3/8" and



1

1/2", but you could easily switch these out for the metric equivalents. And to keep things even easier I design the layout around stacking up five multiples of the chosen tool thickness – for example if I'm using a 3/8" (9.5mm) cutter then my stock will be dressed to 47.5mm, i.e. 5 x 9.5mm.

Approach your marking out with a methodical, process-oriented mindset – mark out the same line on every component that needs it, reset your tools and move on to the next line. This will not only speed up the process, but I'm confident it will reduce your risk of error.

Layout tools

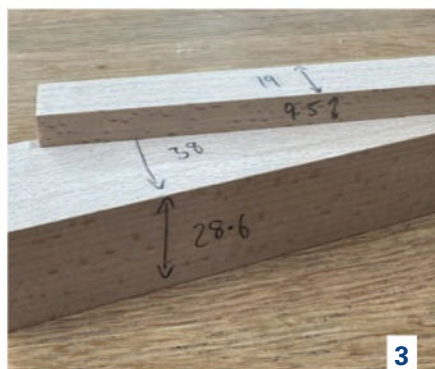
A cutting gauge is absolutely critical to successfully marking out this joint. To accurately set the cutting gauge I like to dress a piece of stock to the desired setting and then use that as a reference block on a flat surface (**photos 2, 3**). If you want to go the extra mile (and trust me this will speed you up, but I totally understand for many this may appear to be over the top), having a set of five gauges that you can set and leave them unchanged will make things a lot easier and faster.

One of the more challenging (and highly visual) aspects of this joint is the meeting of the three mitred knife points once the joint is assembled. The key to success here is that the baseline must be marked from the end at exactly the thickness of the dressed stock, and the mitred layout lines must terminate perfectly at both the outside corner of the workpiece and where the baseline meets the edge of two faces on the stock. A good quality mitre square will greatly assist with this (**photo 4**).

In my view the easiest way to lay out this joint is to refer to some previously cut examples, so my strong recommendation is that the first time you attempt this joint, prepare some spare materials and keep a reference library of each component at various marking out and cutting stages (**photos 5, 6, 7**).



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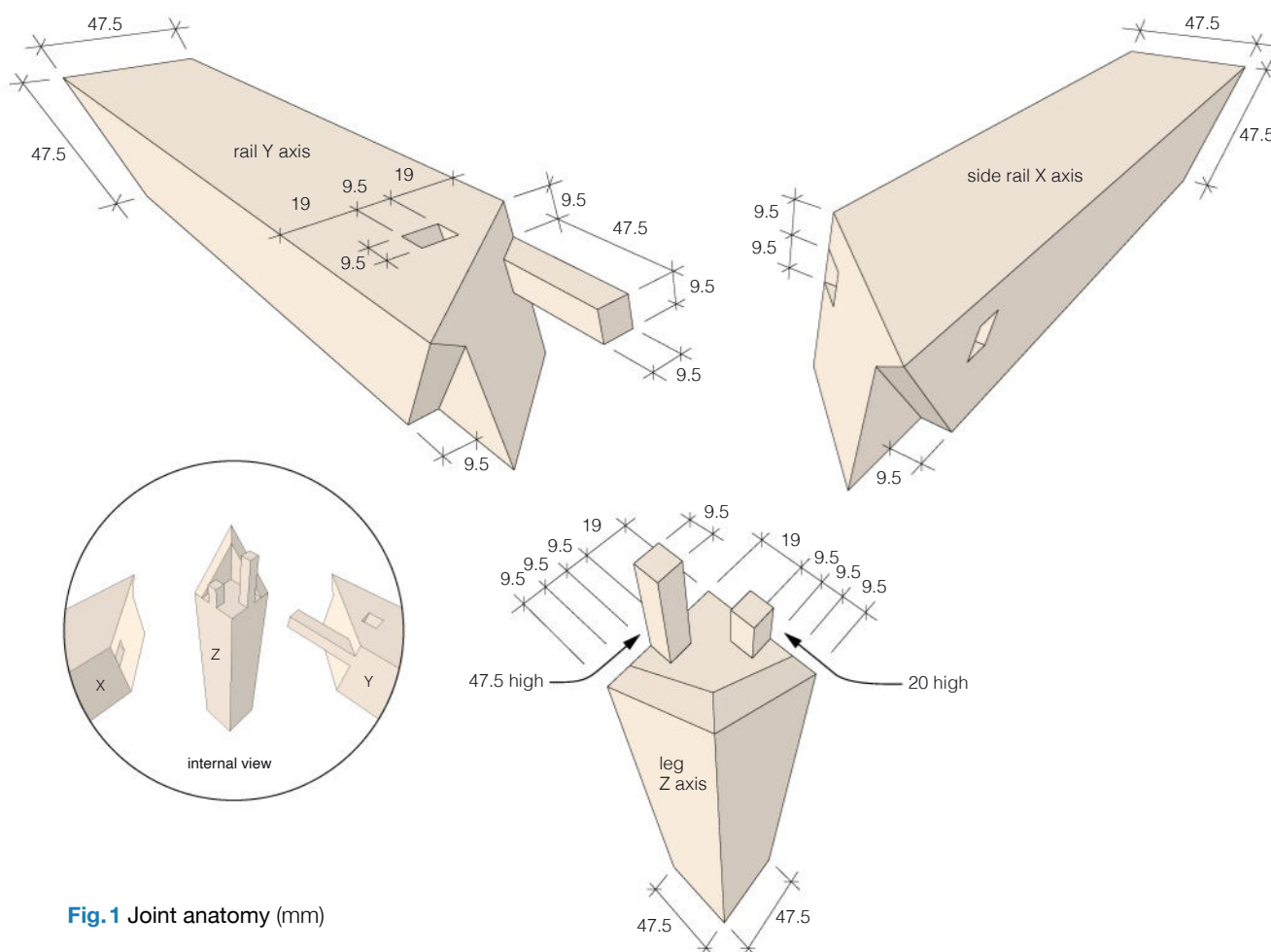


Fig. 1 Joint anatomy (mm)

Once the marking out is complete you can begin your cutting sequences. A few basic workshop aids will assist you with several cuts throughout – a mitred paring guide and a 45° cradle for supporting the square-section components on an edge are examples.

I'll now discuss the cutting of each of the three elements in turn.

Leg (or stile)

I always cut this element first, as the two tenons that get formed set the foundation for the mortises in the other two elements.

Set up to remove the waste areas between and around the two tenons. I've done this at the router table, hollow chisel mortiser and slot mortiser in the past, setting careful stop blocks and using dressed spacers and packers to be able to make all four cuts without needing to reset either the fence or the cutter

(photos 8, 9, 10). You could also use a drill press for this task.

At this stage you'll have a set of four long grain tenons sticking up from the baseline – two of these need to be removed, and to do this I like to set the leg in a 45° cradle at the drill press and use a forstner cutter to drill down through to remove the bulk of the material (photo 11).

When using rotary cutters, you'll be left with a series of curved spurs on the baseline, which are easily removed with some chisel work at the bench.

One of the tenons is then marked and sawn short as this will be a stopped tenon in a shallower mortise in the side rail. Once the tenons are complete you can then proceed with cutting the mitres.

I like to use the tablesaw for this, aiming to cut super-close but not right

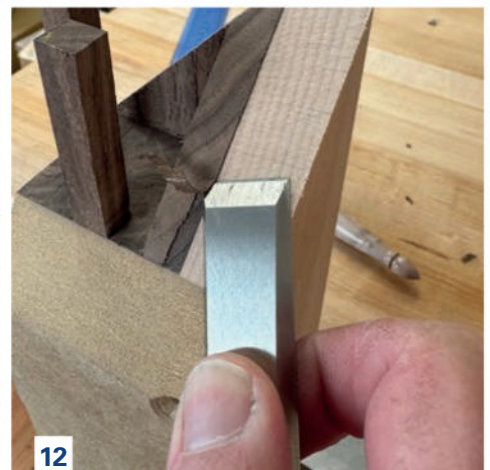
1. The three components to this joint are distinctly unique to each other.
2. Having a set of gauges set on carefully dressed set-up blocks will make layout faster and easier.
3. Accurate layout is the first step to achieving success with this complex joint.
4. A good quality mitre gauge is essential for this joint.
- 5, 6, 7. Each of the three components marked out, alongside a previously-cut sample for reference.



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on the line, and then use a mitred paring guide to quickly and easily dial the cut right to the line (**photo 12**). A sliding tablesaw is distinctly advantageous for cuts like this as you can rotate the fence on the outrigger very accurately to the 45° angle. For those who like to saw by hand, the same principle applies and this is often quicker than setting up the saw.

Rail

This component has three main elements. First is a square-sectioned through mortise that can easily be cut with a hollow-chisel mortiser, or my most-used method is drilling through at the drill press and squaring out with a chisel, ideally a mortise chisel (**photo 13**). Having a dressed piece of stock to test the fit all the way through is a great way to ensure no hiccups at the assembly stage (**photo 14**).

The tenon can then be formed with a series of hand and/or tablesaw cuts. I like to form the shoulders at the sliding tablesaw, remove the bulk with a handsaw and then pare clean at the bench with the mitred paring guide (**photo 15**).

The acute 45° angle where the base of the tenon meets the mitred face is in my view the one aspect of this whole joint that simply must be done by hand, as any rotary cutter cannot get into the acute angle, and any error caused by intersecting two bandsaw cuts for example will be highly visible on the outside of the joint (**photo 16**).

The final element is the outside mitred shoulder. Again, any combination of hand saw or tablesaw will work here, but I do favour cleaning up the shoulder with chisel/paring guide and the cheek surface with a router plane (**photo 17**).

Side rail

The side rail is the easiest in my opinion. One stopped mortise, one through mortise, one mitred face that cut be cut through with no tenons protruding and finally a similar mitred cheek/shoulder as seen on the rail, so this can be cut in exactly the same fashion.

Assembly and clamping

Once all the components are cut you are ready for assembly. This is done in two stages – first the rail and side rail are put together, and then the leg/stile goes on second. Whilst I usually advocate and practise staged, sub-assembly glue-ups, I do recommend this joint be assembled and glued all at once.

For this you'll need to provide clamping pressure in all three axes, and if making a table frame, some spacer



14



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- 8, 9. Cutting the tenons at the slot mortiser – note the stop block and the spacer to allow both cuts to be made without moving the fence or the tooling.
10. Cutting the tenons at the router table.
11. Removing the excess pair of tenons at the drill press using a forstner cutter.
12. Using a 45-degree paring guide to chisel the mitred edges super crisp.
13. Drill and clean out the mortises with a chisel.
14. Keep a dressed test bar to hand to check the fit.
15. A progress shot of the rail, showing the shoulders that were preformed at the tablesaw before removing the bulk with a handsaw.
16. This acute 45° intersection is ideally roughly formed with two bandsaw cuts and pared clean with a chisel and paring guide.
17. A router plane is the ideal tool for cleaning up the cheek surfaces.
18. Careful application of pressure in all three axes and use of spacer bars will assist with accurate assembly.



18

beams at the opposite/unsupported end of the leg components will assist with keeping everything square and parallel (**photo 18**). A variety of clamps can be used, and I've used any and all of parallel-jaw clamps, ratchet straps, band clamps and packing tape for various sizes of project.

Design options

The fundamental structure of this joint allows for various design modifications to be made, depending on your tooling availability and completed aesthetic appearance preferences. The through-tenons can be stopped instead of going through if you'd like to avoid seeing them on the outside of the joint. Likewise, you could further enhance their appearance by extending them further through the opposite face and softening the exposed edges with a small chamfer for example.

The very nature of the three-way mitre means that you can add any subsequent shaping/moulding profile to soften the appearance of the assembled item, and your chosen profile will meet seamlessly at the three-way intersections of the joint. When designing your joint and dressing your stock, make sure you allow enough stock thickness on the outside faces to account for your profile in this case.

Finally, you can highlight the mitred intersections by adding a little chamfer to each mitre, creating a delicate little V-shaped shadow line at the intersections as shown on p.34

Achieving success

Don't get me wrong, this is not your average joinery exercise, but hopefully I've shown you how achievable it can be with basic tooling and skills. Focus on accurate marking out, stick to your reference surfaces and this will create a solid foundation for success. Enjoy!

Process photos: Damion Fauser

Illustrations: Graham Sands



Damion Fauser is a Brisbane designer maker who also teaches woodwork classes from his workshop. Learn more at www.damionfauser.com

Handheld and Hands-free

Shaper Origin bills itself as a world-first handheld CNC machine. With the release of its BenchPilot, a hands-free option also exists. Bryan Cush looks at the latest model Shaper Origin used in conjunction with BenchPilot, comparing its usage to that of the model he first acquired and reviewed seven years ago.

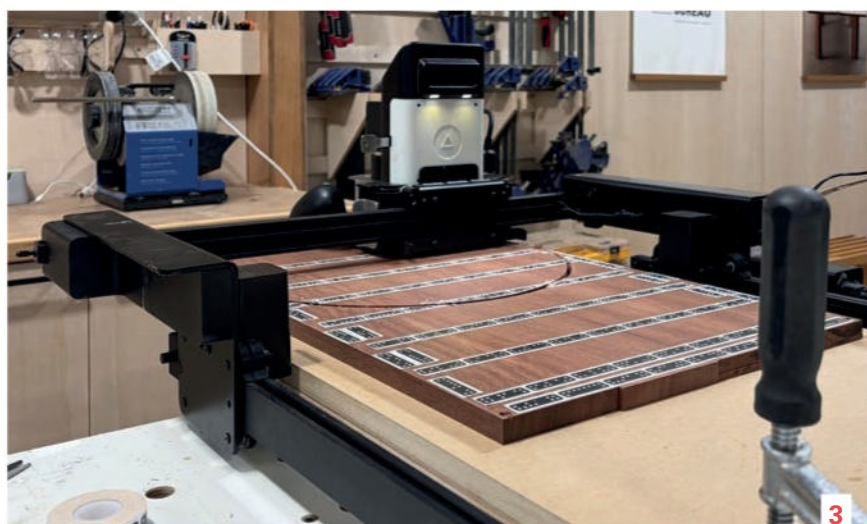
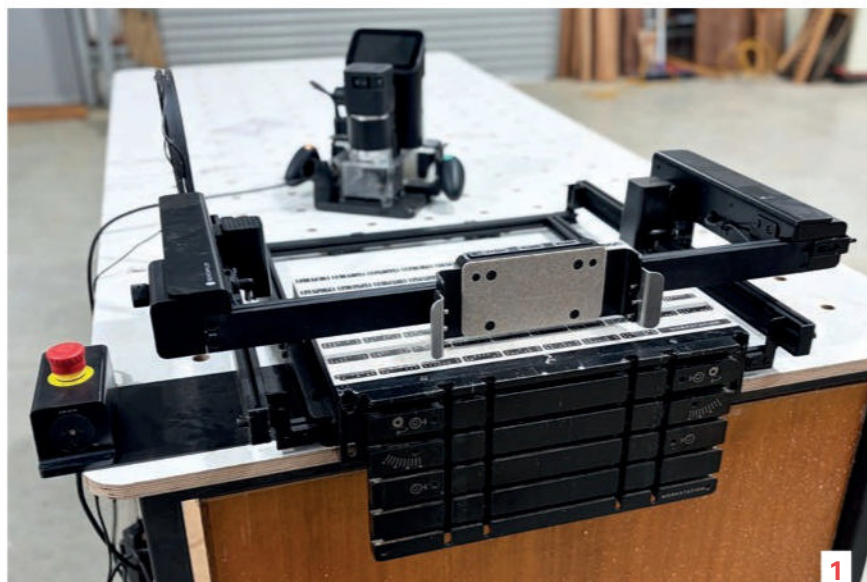


When I first reviewed the Shaper Origin for Wood Review back in 2019, the clearest takeaway was its ability to produce a level of precision that, at the time, felt improbable for something without a fixed gantry. What became equally clear, though, were the trade-offs. That accuracy came at a cost, not in capability, but in terms of power. The relatively small 700 watt Festool router spindle required shallow passes, slower feed rates, and patience. The Origin rewarded restraint. It was never aiming to be a full CNC in sheep's clothing, and that was part of its appeal.

Once you've spent an entire day batching parts on the Origin, a different limitation surfaces. Not in the quality of the cuts, but in the body of the person making them. The process of guiding the tool, holding position, and maintaining pace begins to accumulate. The act of following the on-screen path becomes more about endurance than intent. The tool remains precise, but the user begins to fatigue. This is not a criticism so much as an observation, and it is simply the nature of achieving this level of precision in a handheld unit.

For one-off work, for exploratory making, and for situations where responsiveness matters, that hands-on engagement is all part of the appeal. However, in batch production, where repetition replaces variation, it becomes a limiting factor.

It is into this context that BenchPilot enters the room. At first glance, it looks like a straightforward extension of the system, a mounting XY axis platform that allows the Origin to operate in a more controlled way. In practice, it shifts something more fundamental by removing the need to physically guide the tool, while leaving the familiarity of the Shaper workflow largely intact. Assembly and initial set-up are straightforward. From unboxing to first cuts took approximately 50 minutes, with most of that time spent aligning and familiarising myself with the gantry and mounting process. It is not complex, but it does require a bit of



Main: Used with BenchPilot, Shaper still operates with the same interface and intuition.

1. Unboxing, set up and tuning took less than an hour.

2. The variable feed rate speed knob is a brilliant addition.

3. Handheld CNC is now hands-free as well – BenchPilot working on its own.

4. Close-up of the locking mechanism to engage the BenchPilot.
5. The simplified interface on the Shaper when BenchPilot is in operation.
6. BenchPilot cutting birch ply.
7. Quality of cut straight off the top is a dramatic improvement over hand driven Shaper Origin.



attention to detail to ensure everything is running square and smoothly.

You still define your cuts, prepare your material, and establish reference grids. But once engaged, the movement is no longer yours to manage. The Origin follows the programmed path with a consistency that does not change. The most noticeable difference is not speed, but repeatability. There is no gradual drift in pressure or alignment, and no small corrections creeping in, because the variable of human fatigue has been removed.

Improved consistency is particularly noticeable in pocketing operations. When Origin is driven by hand, pocketing cuts rely on maintaining an even rhythm and overlap. With the BenchPilot, that process becomes fully automated. Origin calculates the toolpath internally, stepping over by half the diameter of the bit and working its way through the material in a consistent pattern down to the finished depth. The result is a noticeably more even surface finish and predictable cutting behaviour. There are no missed sections, no uneven overlaps, and no subtle ridges left from inconsistent movement. It is one of the clearest examples of where automation improves not just efficiency, but also the end result.

The Origin still remains somewhat restricted by its 700 watt spindle motor. Cuts need to be approached conservatively, depths managed in multiple passes, particularly in hardwoods, and feed rates kept within what the spindle can realistically handle. BenchPilot features a variable feed rate speed control knob, which can be adjusted mid-cut, a valuable addition for fine-tuning cut quality. It guides with mechanical consistency, but the cutting power remains that of a handheld router. It is a reminder that the BenchPilot improves how the tool operates, not what it is capable of removing, and expectations need to be managed accordingly.

When the Origin is handheld, control is immediate. You are constantly responding to the cut, adjusting in real time as the tool moves. With the BenchPilot, responsiveness is replaced by advanced planning. Decisions are made before the cut begins, rather than during it. You can observe rather than guide, and work on other projects, however the direct feedback between hand and material is reduced, replaced by a level of trust in the set-up.

During operation, the Origin displays cut time remaining. While it is a useful feature, giving a clear sense of

progress without needing to track each stage manually, there is no option for a more detailed breakdown of which pass is currently running, or the depth or offset of the cut. It's a minor gripe, but advanced users may prefer a more developed interface providing more information to align it more closely with a traditional CNC workflow.

Once all cuts are complete, the spindle lifts clear of the workpiece, but does not automatically shut off. The router continues spinning until the user intervenes. Here BenchPilot feels less like an autonomous machine and more like a workshop aid requiring supervision. Dust and chips may accumulate if extraction is not well managed, whereas when the Shaper is handheld, chip build-up is obvious.

It is also possible to accidentally leave elements from a previous cut active and unknowingly run them with the wrong settings. This means something intended as a light rebate can accidentally become a full-depth cut. In my case, it resulted in plunging straight through the front of a memory box while attempting to cut rebates for locking hardware. A small lapse, but the tool did exactly what it was told to do. It is the type of costly mistake that becomes less frequent with experience, but for all



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its automation, the BenchPilot does not remove human responsibility.

The hybrid nature of the system remains one of its strengths. Origin can be undocked from the BenchPilot at any point and returned to handheld use. Flexibility remains central to the Shaper approach however at the same time, the BenchPilot introduces a physical constraint. Unlike the handheld Origin, it cannot be taken to a finished surface or installed element. For example, you can't cut a floor inlay with the BenchPilot in the same way you might with a user-driven Origin.

When paired with Origin's Workstation, the cutting area is limited to approximately 460mm wide by 280mm deep. Within that zone it performs exceptionally well. Joinery, inlays, and smaller components all sit comfortably inside that footprint. The Workstation makes automation with BenchPilot for batching components with vertical orientation clamping extremely straightforward, something not quite so simple on a standard CNC.

Extending the standard cut area relies on a pass-through approach. This allows long components to be machined in stages, feeding the material through the system while maintaining positional

accuracy. Where it differs from small gantry-style CNC machines is in how that positioning is maintained. Rather than relying on the workpiece being moved a fixed increment, the BenchPilot references directly off the Shaper tape. This removes the need for precise indexing between passes as the Shaper re-orientates its position from the domino tape pattern rather than the material itself.

It is a subtle but meaningful advantage, reducing set-up complexity and one of the more error-prone aspects of working with small-bed CNC systems. However, this flexibility only applies in one direction. The maximum width remains 460mm, as the material must pass between the gantry rails. When used without Workstation, the workpiece must have a support sled to bring it up to meet the underside of the Shaper by approximately 58mm, including the depth of the workpiece. There is a 6mm vertical adjustment in the cradle, which assists with fine-tuning the setup.

Overall conclusion

This is still not a system designed for high-volume production, but for controlled, repeatable work at a considered pace. Cost is another factor. The BenchPilot builds on an already significant investment in the

Shaper ecosystem, and while each component has its place, the combined cost would equate to a basic gantry-style CNC set-up.

Ultimately, the BenchPilot addresses a very specific limitation of the original tool. It removes the physical strain associated with repetitive, precision work while maintaining the flexibility that made the Origin appealing in the first place. It does not expand capability, or fundamentally change what the tool can do. What it changes is how consistently, and how comfortably, you can do it.

Photos: Bryan Cush

Shaper Origin and BenchPilot supplied for review and available from Timbecon at www.timbecon.com.au

You can read Bryan Cush's review 2019 review of the Shaper Origin tool he bought and set up years before it was available locally, see www.woodreview.com.au/news/shaper-origin-handheld-cnc

Bryan Cush @sawdustbureau is a designer maker and architect who works from his Ballarat, Victoria studio. Influenced by Scandinavian and Japanese craft, his bespoke and collaborative works most often highlight native timbers. Learn more at www.sawdustbureau.com



Kate Stehr in her studio in the Illawarra, NSW. She would best describe this space as 'organised chaos' and generally prefers to put everything away at the end of each carving session, so the next one starts with a clean slate.



Thinking Through Making

A world of symbols and mark making are referenced in the sculptural works of Kate Stehr. Her work often explores the absurd, challenging conventional expectations of function and form.

Kate Stehr is an Australian sculptor who works primarily in wood and draws on her own firsthand research and experience to produce a diverse range of highly original works. We asked her to tell us about her work and the things that influence her.

Kate, please tell us about your background? Why sculpture, and why wood?

I studied Fine Arts for seven years and, after an initial introduction to a range of disciplines, found myself drawn to sculpture. I worked across clay, stone and mixed media, but kept returning to wood – particularly found and salvaged timber, and fallen branches with their own histories embedded in them.

Early on I discovered the work of Australian artist Ian Gentle, and was mesmerised by his use of jointed found gum branches and the humour in his forms. An even earlier influence was my grandfather, a carpenter. I have clear memories of sitting on the floor of his workshop, surrounded by timber shavings as he worked – those sensory experiences have stayed with me.

Is wood sculpture your 'day job'? Do you have other creative pursuits or work?

I've practised sculpture for over 20 years, but until recently supported my practice as a Visual Arts teacher and Head Teacher in a high school setting.



Three years ago I made the decision to focus more fully on my own work.

I still work within education – teaching Visual Arts at university and delivering workshops – but my primary focus is now my practice.

I always wanted to be an artist, though I didn't initially see it as a 'real job'. Before returning to study in Fine Arts, I trained as a chef and worked in hospitality and retail. Choosing to pursue art was a risk, but one I'm very glad I took.

You have degrees in fine art, education and creative art research. How has your research informed your practice as an artist?

My research helped clarify the conceptual drive behind my work – particularly the 'why' behind my material and construction choices. After working independently for some time, I had slipped into the kind of artistic silo that can become an echo chamber.

Both the written and practical components of my Masters pushed me to interrogate my process more critically and to move beyond existing boundaries in my practice.

Writing about my work was challenging and at times felt antithetical. As a visual artist, sculpture is my primary language, so translating that into text wasn't always intuitive. But it was an





important step in pushing the work into its next phase.

Some of your vessels defy function and you describe them as ‘deliberately absurd and ludicrous’. What’s the aim here?

I’ve always been interested in making works that invite people to spend time with them. It’s common for viewers to only engage briefly, regardless of how long a piece has taken to create.

I’m drawn to forms that slow that looking down – whether through absurdity, scale, or construction.

I have a firm belief that we need to keep making, even in the face of the issues we’re confronted with. But there’s an inherent absurdity in spending hours carving small timber objects, and that tension often finds its way into the work as humour or awkwardness.



1. *Scribing Tools* are from a hand carved series that reinterprets traditional narratives for contemporary viewers. They imagine the tools that might have been used to reiterate the spoken narratives of old, morphing them into absurdist styluses, brushes and bowls for mark making.
3. *Calanoida I*, timber cane, fishing reel, fibre, found objects, 460 x 60 x 4cm, 2023. This work comes from the *Plankton* series, which came about after a series of dives with humpback whales in Tonga. The series seeks to make the miniscule, visible. By shining a life on the unseen life forms, Kate hopes to reinforce our reliance and interconnectedness with the microscopic world.
3. *Domestic Arsenal* (2025) glazed, hand-built ceramic, carved weeping mulberry branches. This series of works was made during a residency at Burnt Dirt at Clay Wollongong. ‘Perhaps not precious by today’s standards...useful objects would be repaired, handed down and treasured by generations of womenfolk in Australian households in contrast to our current consumer culture.’
4. *Growth Vessels* series (2023), wood, found branches. This series of hand-carved vessels, were made in response to time spent in the Royal National Park, Sydney, NSW and featured in a group show. The vessels reflect the regrowth seen after bush fire and controlled burning.
5. Kate Stehr with in-progress and completed works.
6. *Brush Bowl*, *Scribing Tools* series (2025), jelutong, fibre, 80 x 180 x 95mm. This work deliberately defies usage. The thwarting of purpose is a common theme in Kate’s works, which regularly celebrate the absurd.

7. *If I Lift My Eyes to the Horizon (2025), It's You That I Might Miss.* Timber, paint, natural and plastic fibres, plaster and paper beads, 1000 x 1000 x 90mm. Hand carved during a residency in Finland, these sculptural forms are informed by snow- and moss-covered rock mounds, the undulating terrain, and shifting northern skies.



8. *Regeneration Vessel (2023),* reclaimed timber, found branches, black Japan stain, 280 x 440 x 100mm. A response to time spent in the Royal National Park, NSW.

9. *The Bush Telegraph* series, (2024), wood, antique ceramic inkwells, horsehair, fibre, found branches, thorns. Created in reference to the Australian country term for the informal network of news and gossip through regional and rural Australia. Following on from previous *Scribing Tools* series, they evoke ideas of writing tools, both in the disjointed brush toppers and of course, the inkwells themselves. Again, they are deliberately absurd, defying use.



11. Kate's carving process is very much influenced by 'thinking through making'. Whilst she loves to work in series, and each of these has an overarching concept that she wants to explore, she allows her carvings to shift and change as she makes them. The allowance for the carving process to influence the end work, is one of the wonderful elements that keeps her coming back to the studio.



I like that my work can be slightly disarming. Art can feel intimidating or overly serious, and humour can open up a different kind of engagement.

Can you tell us about your 'Domestic Arsenal' series?

This series references the historical domestic roles of women. I created hand-built ceramic utensils – colanders, oven forks and pastry brushes – and paired them with ungainly handles made from weeping mulberry.

Their construction nods to traditions of 'make do and mend' that defined many women's lives in previous generations. My nan, for example, repaired and repurposed everything – nothing was discarded if it could be reused.

These objects, while not necessarily valued in contemporary terms, were essential to the running of a household and often passed down through generations.

The awkward, bent handles of these utensils deliberately disrupt their function. They reference both the labour embedded in these objects and the relative ease of contemporary life, while



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also pointing to our current culture of consumption and disposability.

How did the Scribing Tools series come about?

The *Scribing Tools* series developed from earlier work exploring how traditional narratives can be translated into contemporary forms. During my *Masters*, I became interested in the idea that myths and folk tales need to evolve in order to remain relevant.

This led me to think about the tools that might have been used by storytellers – objects that sit somewhere between the spoken and the written word.

These imagined tools suggest gesture and movement. They invite the viewer to picture them in use, even though their forms deliberately prevent that. As with earlier works, they retain an element of absurdity that disrupts function.

Your wall sculptures reference natural, ritual and symbolic forms. Where do these ideas come from?

These works are largely inspired by traditional narratives. I grew up listening to stories – particularly

Greek myths – and continue to collect tales from different cultures.

Unlike my freestanding pieces, these works shift away from the figurative towards abstraction. They draw on forms such as Nordic runes or simplified symbolic elements derived from characters and stories.

Where or how did you learn your woodworking skills?

My art study was very hands-on, so I developed my practical skills during that time. Every time I enter the studio, I feel like I learn something new – particularly when beginning a new series.

I've also found Instagram useful, as watching other artists and craftspeople has exposed me to different tools and techniques. Much of my process has also been developed through trial and error. I'm sure I have methods that would make a trained carpenter shudder, and I'm always keen to learn more.

I'd like to undertake a more structured joinery course at some point, as my work has shifted towards more resolved finishes.

What sort of carving tools do you use?

Anything and everything. Each work requires different approaches, so I've built up a broad range of tools. I'm comfortable using power tools, and while many of my recent works have been smaller in scale, I'm keen to return to larger pieces.

I've recently invested in a new chainsaw and larger carving drums for my die grinder in preparation for that shift.

What are your most often used tools?

I couldn't live without my die grinder, rotary tool, carving bits and power file. My bandsaw, chisels and sandpaper are essential too.

Residencies have made me more aware of what's truly necessary, as I've often had to work with a limited toolkit. That said, having a well-equipped studio is always a pleasure.

What are your favourite woods and why?

I've always collected timber – particularly fallen branches with interesting forms. It's probably gotten to the point where I don't need any



11. *Futile Gestures II*, *Scribing Tools* series (2022), jelutong, horsehair, porcupine quills. These final works in the series attempted to push the potential of the chosen timber to its tipping point. Materially, they verge on delicate in regard to structural integrity. Carved from solid, laminated block of jelutong and maple, there were a number of 'failed' attempts.
12. *Regrowth Vessel* (2023), made in response to the Royal National Park, NSW. Reclaimed timber, found branches, black Japan stain, 280 x 440 x 100mm.
13. *Gyre Brush*, *Scribing Tools* series (2022), jelutong, horsehair
14. *Serpentine Brush*, *Scribing Tools* series (2021), jelutong, thorns, horsehair, 530 x 170 x 40mm.



I'm keen to translate some of these ideas into more physically ambitious forms.

I have several upcoming exhibitions in Sydney and am hoping to undertake more residencies, following a particularly valuable month-long residency in Finland.

What's your advice to emerging sculptors?

You find your style through making – and not everything you make will be successful. That process is essential.

My approach has always been 'thinking through making'. The act of making often reveals solutions and new directions.

I'm also interested in challenging the idea that people are either 'good' or 'bad' at art. Like any skill, it develops through practice.

Finding your niche takes time, but also curiosity. Look beyond galleries – social media, conversations and everyday observations all shape your perspective.

My work has evolved over time, but it remains recognisably mine. That comes from sustained practice and a willingness to keep exploring.

*Studio photography: Bernie Fischer
Portraits: Damien Cadwallen*

*Kate Stehr lives in the Illawarra, NSW.
Learn more about Kate Stehr @katestehr
at katestehr.com/*

more, but you never know when a particular shape will be useful.

I'm also given a lot of reclaimed timber, from chair legs to cane furniture. More recently, I've been purchasing timber such as jelutong, Queensland maple, white beech and mahogany. Jelutong is a favourite – it's incredibly satisfying to carve, and I love its pale colour.

What drives your work? Is it financially viable?

I just have to make. The carving process is almost meditative – it clears my mind while also creating space to think.

I've made a living from art, but it's usually supported by a combination of roles. Ideally, my practice would fully sustain me, but there's also a certain freedom in making work that isn't driven purely by financial outcomes.

I'll keep making for as long as I can. When carving is no longer possible, I'll simply find another way to work.

What direction is your work heading in?

I'd like to return to larger-scale works. Recent pieces have naturally become smaller, which has been practical, but

Wood Diary

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13 MAY 2026

Australian Furniture Design Award (AFDA)

Exhibition opens. The AFDA is a biennial award that fosters Australian designers and makers presented by National Gallery of Victoria and Stylecraft.

www.ngv.vic.gov.au/

14–24 MAY 2026

Melbourne Design Week

An 11-day program of talks, tours, exhibitions, launches, installations and workshops across Melbourne with over 450 events and exhibitions, and 100,000 visitors across Melbourne, its suburbs and the regions.

designweek.melbourne/

22–24 MAY

Artists in Residence exhibition

Victorian Woodworkers Association
Wood Design Centre, 5 Tyrone Street,
North Melbourne
vwa.org.au/

UNTIL 27 JUNE 2026

Felled (with Conscious Craft)

Six makers reimagine timber supply sources in contemporary woodworking practice.

The exhibition forms part of Conscious Craft – a Craft Victoria initiative showcasing innovative creations by makers and designers who are actively considering sustainability and ethics in their production methods and use of materials.

Craft, Watson Place (off Flinders Lane), Naarm/
Melbourne

craft.org.au/whats-on/all-events/felled/

26 MAY–4 JULY 2026

Unveiling the Unexpected

Stuart Davidson explores the transformative potential of multi-axis turning.

Vitrine Gallery, Craft Victoria,
Watson Place, Melbourne
craft.org.au/whats-on/all-events/unveiling-the-unexpected/

29–30 MAY 2026

Belmont Wood & Craft Showcase 2026

Woodturners Society Queensland
Sales, exhibition, turning demos, food and drinks,
free parking

Fri 12–4pm, Sat 9am–4pm, Sun 9am–3pm

Belmont Shooting Complex
1485 Old Cleveland Rd, Belmont Qld
www.wsqld.org.au

9–12 JUNE 2026

Xylexpo

Biennial world exhibition for woodworking technologies and components. With Bimu, the biennial exhibition of machine tools, robotics and automation, additive manufacturing, digital and auxiliary technologies.

FieraMilano Rho Fairgrounds, Italy
www.xylexpo.com

11–13 JUNE 2026

Design Show Australia

Interiors, lighting and furniture alongside Archi Build Expo and Kitchen and Bath Show
Melbourne Convention and Exhibition Centre
designshow.com.au/

12–15 JUNE 2026

Q-Turn 2026

A weekend of skill-sharing open to woodturners, scrollers, carvers and burners. Hosted by Ipswich Woodcrafts Club.

The Outlook, 4001 Ipswich-Boonah Road,
Boonah, Qld

Jim Tutin: 0418194184, email jimtutin6@gmail.com
ipswichwoodcraftsclub.org

4 JULY

Hand Tool Event 2026

All-day tools and technique demonstrations with Lie-Nielsen Australia, HNT Gordon, Ironbark Tools, Australian Wood Review, 10am–4pm, free entry
Damion Fauser Workshop, 4/14 Buttonwood Place, Willawong, Qld

www.damionfauser.com/

15–17 JULY 2026

Australian International Furniture Fair

Trade show where brands showcase furniture, lighting and products, industry seminars. Includes Vibrant Visions in Design (VIVID) design awards.

Melbourne Exhibition Centre
www.aiff.net.au

30 JULY–2 AUGUST 2026

Spoonfest

The International celebration of the carved wooden spoon. Workshops in spooncarving and tool usage by numerous well known exponents
Edale, United Kingdom

spoonfest.co.uk/

23 AUGUST 2026

Members and Friends Tool Sale

The Traditional Tools Group
9am–12:30pm, Old Eastwood Town Hall
74 Agincourt Rd, Marsfield, NSW
tttg.org.au/

30 AUGUST

Entries close 11:59pm AEDT

Maker of the Year presented by Hare & Forbes

Wood Review's awards for fine woodworkers and wood artists all over the world.

Information and entry at
www.woodreview.com.au/moty

4–5 SEPTEMBER

Handworks 2026

80 hand tool makers and vendors gather for an unplugged weekend in a timber-frame dairy barn setting in the historic village of Amana, IA, USA

handworks.co/

16–18 SEPTEMBER 2026

Thailand International Woodworking & Furniture Exhibition

IMPACT Exhibition and Convention Centre, Bangkok, Thailand
thailandwoodworking.com/

16–18 OCTOBER 2026

Maleny Wood Expo

Relaunching a 30 year old event organised by Rotary Club of Maleny
Maleny Showgrounds, Sunshine Coast, Qld
malenywoodexpo.com/

21–22 OCTOBER 2026

Goulburn Valley Woodworkers Wood Show

Woodwork sales, trade stands, demonstrations, milled timber, food trucks
Multipurpose Pavillion,
Shepparton Showgrounds, Vic
Email gvwoodworkers.show@gmail.com
www.gvwoodworkers.com.au

7–8 NOVEMBER 2026

Out of The Woods Competition and Exhibition

A celebration of fine woodwork presented by Fine Woodwork Association WA
The Pattern Shop, Midland Railway Workshops,
Blacksmith Lane West, Midland WA
Email ootw@fvwwa.org.au
www.fvwwa.org.au/

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tttg.org.au/

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“This Whittle Waxes Hardwax Oil is a superb product. I've built and finished yacht interiors for many years and only in the past couple of years have I found this hardwax oil. It is number one without question. Just try a small can on something you really care about and you'll be sold.”

– Steve Marshall, Yacht Interior Builder.

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WAXES

www.whittlewaxes.com.au

Meeting Challenges



Patience, persistence and the community of like-minded others have taught Daniel Spielman the skills he applies to his creative work as a designer maker, artist and performer. The story of his award-winning cabinet is an example of his approach.

'Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.' – Samuel Beckett.

I arrived at furniture making in a roundabout way. When I was a teenager, I laboured for a designer/builder team, Dick and Barb Hewitt, who were doing unusual house renovations in and around Melbourne. Between jobs we would go to their rugged block at Avenel and slog away planting and watering trees. My first pay cheque was a hammer, chisel and toolbelt and my

second was a beautiful axe. They extolled proper hard work, a deep appreciation of native flora and a kind of discerning creativity – and although I wasn't much good at any of the work, I cherished my time with them. I found structure in it, and was fascinated by all the terminology, physicality and knowledge.

By the time I left high school, it was pretty clear that I wasn't cut out for institutional learning. Put simply, my interests were too divergent to fit into conventional study or vocational

training. I didn't have a singular focus and I was much more interested in following my nose than choosing one profession. It was at this time I was also discovering a passion for stage and screen acting – also collaborative endeavours brim-full with multi skilled practitioners, and making and performing have come to form the balance in my working life. Though I am still pursuing both careers, I have never undertaken formal training.

Over the past 30 years I have worked in theatre, television,



Main: Daniel Spielman's award-winning *Credenza 2* cabinet was made from reclaimed timbers.

1. Detail view of the cabinet showing the tambour and internal shelving.
2. Portrait of Daniel Spielman by Pier Carthiew



carpentry, fit out and joinery, prop and set building and visual art. In all these settings, I have found people who are not merely focussed on commercial competitiveness or the jargon of prestige, but on provoking thought and taking care, of finding elegant solutions to complex problems and of sharing the values of the endeavour. In a way, the objects I'm making now are dedications to the diversity and generosity of all the conversations I've been having over the years.

I set up my first workshop in Grandma's garage in 2017, and this credenza was the final commission I made in that shop. It was also the most ambitious.

The commission

The commission came from a dear friend, and the quality of the conversation was great from the start. It was enjoyable to talk about the possibilities for the object in many different ways, while at the same time not having to lock down the details. A lot of the most valuable

direction related to abstract thoughts like: what the feeling should be to have this object at the centre of their daily activities; that it could be monumental but should not overstate itself; it should somehow reward the kind of private, quiet consideration that happens when you live with a beloved piece of furniture.

As rare as this type of brief might be, it suits the way I work to discover solutions as I go, rather than the usual way, which is to be governed by efficiency and decisiveness.



3

3. Reclaimed from a demolition house, one board stood out. It was 350mm wide with symmetrical cathedral grain pattern along its entire 3000mm length.

4. Freshly dressed, the figure in the red pine feature board was revealed.

5. The credenza top had the red pine board in the centre, with book matched blackwood borders and stained ramin detail.

6. Showing the completed credenza top.



4



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Obviously, this also has its challenges. To say the least.

Once we had settled on using salvaged red pine, brass and blackwood and the arrangement of tambours and drawers, I was entrusted with a lot of time and autonomy in designing how it all came together. I sent the clients a rendering to indicate basic proportions and a photograph of samples of two timbers side by side to suggest the tone. Otherwise, I was left to my own devices.

The materials

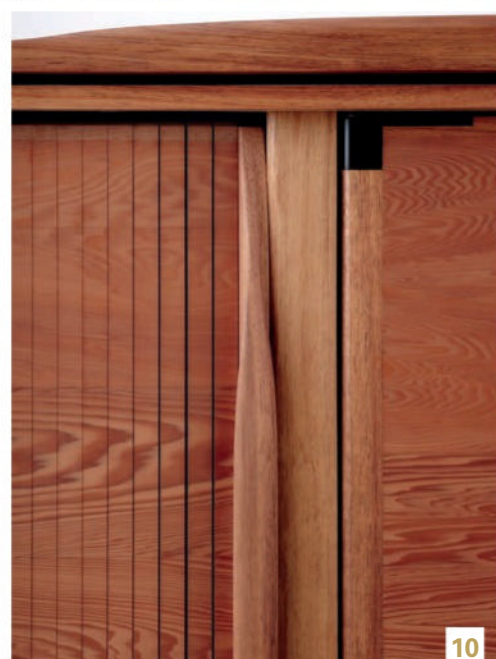
A few years ago, I found the red pine hiding behind coats of thick enamel paint in a house scheduled for demolition. One board in particular was gorgeous – nearly 3m long and 350mm wide with a symmetrical cathedral grain pattern along its entire length. The same house had a large central staircase, and the solid brass carpet runner stays were all still attached.

My friend Nicholas Dunand provided the substantial lengths of heritage ramin – which he acquired 30 years ago from a retiring patternmaker. Once he had given me a box of reclaimed ebony piano keys, and I also had some ebony given to me in a big box of offcuts by one of the guys working at the Maton guitar factory.

The blackwood came from a very mixed pack I bought years ago in an estate auction which was held in a muddy paddock out the back of Colac. Some of it was straight, some unusable, some spalted and figured – and it was all very gnarly and hard.

The beautiful Japanese sen ash veneer board came from retired master joiner George Henderson who had it in stock from when it was popular in the 70s and 80s.

My ambition for the credenza was to use only salvaged or extant heritage material – but I opted for one new



element – which was the Corian of the tambour tracks.

To be honest, most aspects of the piece provided difficulties for me, but the tambours and the shelving were the two primary challenges.

The tambours

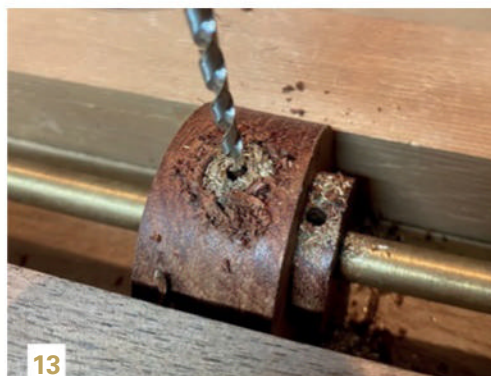
My initial thoughts were about how to ensure the correct alignment of the tracks, top to bottom, because I was unsure what the tolerances would be with regard to friction as the doors moved around the curved track. My solution here was to use CNC to cut the complex mortises for the tracks and rib supports in the carcase panels. Secondly, the

tracks themselves could be made from something dimensionally stable and hard-wearing such as the 'engineered stone' product Corian.

Many of the tambours I looked at succeeded by being lightweight and having grain running with the tambour sticks. I knew I wanted the red pine's grain to flow horizontally and so my concern was how to stabilise the panels when they were going to be cut up into such small pieces.

I also preferred the idea of a reassuring heaviness in the tambour action. The weight could be used to my advantage if I could make the

7. Matching sets of red pine and ramin were resawn for the doors.
8. Vacuum pressing the red pine faces and ramin core for the doors.
9. Showing one of the red pine veneered door panels marked up for drum sanding.
10. Detail of finished tambour and front doors.



tenons and the tracks like enough in hardness to provide minimal friction and wear. I had recent experience with some extremely dense brushbox which I thought could be a smooth and durable option for the tenons.

I decided the doors would be laminated: red pine front and back but with a core of ramin running in the opposite orientation to counteract any distortion. I would use a vacuum press to do the lamination – theoretically providing equal clamping force all over the panel.

I had a finite amount of red pine to use for the four doors, and although I might have liked to make the tambour sticks slightly finer – it came down to how much material I would lose in the cuts, and the minimum distance I needed the tambour to travel.

The process was quite involved, and it nearly came cropper at the very end. Resawing and dressing the material; keeping track of the matching sets of almost psychedelic red pine; setting up the vacuum press and achieving a good adhesion for the panels; tweaking the setup with test pieces; putting the panels through the drum sander to ensure a flat surface for bonding the vinyl backing and because the pine has such a contrast between the early wood and late wood, it was liable to dish out with a hand-held sander or delaminate if you so much as looked at it sideways...

All this went surprisingly well, but it was one of the final, (embarrassingly basic) operations where I nearly got beaten. I decided to cut the tambour sticks by making a jig with the track saw. I fixed the track to the jig and had an end stop to make the dozens of crosscuts. As it

happened, each cut wandered about 0.2mm out of square – this is small enough to be virtually invisible, but by the time I'd made 40 cuts or so, each one being the reference for the next, the first panel was running out of square by over 8mm. This happened late in the game and I only had enough material for the two tambours and two centre doors. Not for the first time with this cabinet, I closed the workshop door and went home.

The solution was to reset the jig even more carefully, and check the work periodically, correcting any wandering cuts. While feeling sick about whether I would be able to read the error enough to cut the second one better...basically, I just had to keep going.

I also made adjustments to the tenons and the handles. I had designed the handle resting in its closed position at

the rear of the cabinet, but with the cutting errors, and the way the track design and proportions came out, it was necessary to shift the handle to the leading stick, and in addition place a small 5mm bearing in place of the tenons on the leading piece – to mitigate it binding as the force of pulling the door made it hinge along the pliable vinyl backing.

The shelves

I salvaged two dozen 3/8" solid brass rods from the staircase of the house demolition. I would use them for all the shelf supports and door hinges. I wanted to have the shelving behind the tambours cantilevered – floating at the outermost corner. This meant devising a way to both suspend them on three brass rods, and also stiffen the solid timber shelves.

To make components that didn't interrupt the fine lines of the brass meant making connections that had a good amount of glue surface and also a mechanical fixing. I cut these circular connections out of blackwood with a combination of forstner bit, hole saw and rebate cutter in the trimmer.

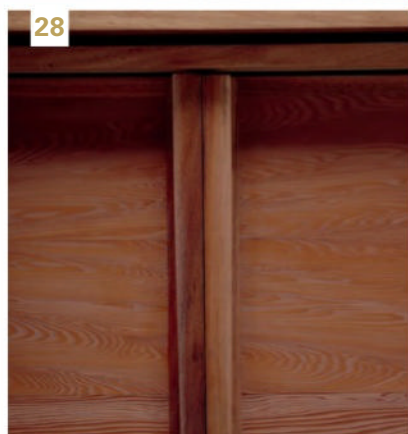
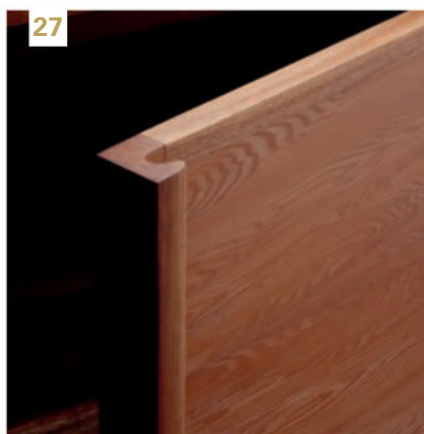
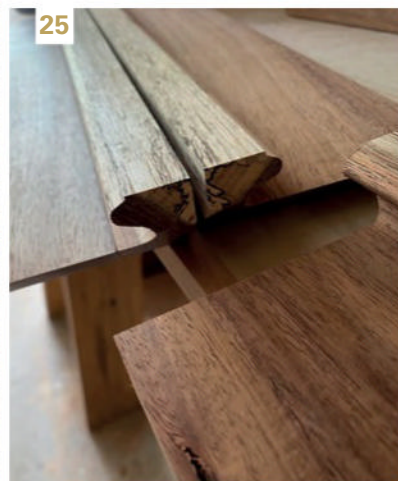
I also opted to dovetail some support ribs into the underside of each shelf. The ribs would have to meet the round connections snugly, so there was decent adhesion and then 3mm brass rod would pin the joint through the whole assembly.

This was a classic case of the whole thing being utterly flimsy until all the elements were glued in place. The way I fixed the brass shelf support rods top and bottom was to tap the ends of each rod and use brass machine screws and washers to hold them in tension through the carcass.

Overall, the build was enjoyable, but deeply challenging, and amounted to the cabinet behaving like a complex instrument. So many aspects had to be working together for it to succeed. And in



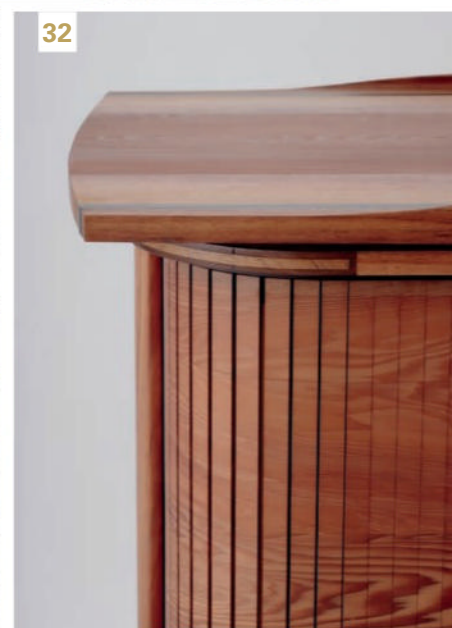
11. The Vic ash shelves were machined to size and rebated to receive the shelf supports.
12. Blackwood 'rib' supports were dovetailed into the underside of the shelves.
13. Drilling holes for 3mm brass pins in the shelf assembly.
14. The brass pins fix the shelf supports to the brass rods.
15. Assembling the shelves, the supports and brass rods.
16. Detail of the completed pinned shelving supports.
17. A 5mm bearing was fitted to the leading tambour sticks to prevent binding along the track.
18. Testing a brushbox tenon in the corrian track.
19. Tambour tracks were routed into the cabinet carcass base.
20. The corrian tracks have been fitted, and shelves (now stained) in place.
21. The doors pivot on shopmade sprung brass rod 'hinges' that have a small keyway for removal.
22. An internal view of the shelf fittings.



- 23. Spalted blackwood sections were profiled for the drawer handles.
- 24. The grain on the handles was matched and continues across the drawers.
- 25. Detail of the profiled front door pull.
- 26, 27, 28. The finished drawers and door pulls.
- 29. The ramin cabinet base frame assembled before shaping.
- 30. The cabinet supports have been rounded and the carcass base fitted.
- 31. The red pine tambours and door pulls midway through finishing.
- 32. The colours and grain of the finished cabinet are highlighted.
- 33. Awaiting delivery, the finished cabinet is the culmination of evolving design decisions and challenges overcome.

the time-honoured way of such big jobs – it saved a little bit of terror for the very last minute. I had to disassemble and reassemble it several times, to transport it from the shop to the photographer's, and then to the client's high-rise apartment. I was so careful and so tired. After the triumph of not damaging it in all its travels, I assembled it finally in position, packed up and went home, shattered and happy.

A couple of weeks later I received a message saying that one of the central doors had dropped and one of the tambours was binding. In fact it was worse – when I got there, the cabinet was behaving in a very strange way – things were out of square, but not consistently – it was like it was dimensionally melting and none of the readings I was taking made sense. I was convinced I was in for a nightmare of recutting and fitting and had finally packed up my horde of measuring tools – and was about to leave when I thought: 'I'll just put the level on the parquet floor and see what it's like.' Just measuring across the length of the cabinet base, it had 12mm hump in it. The whole thing had slumped in several directions. One big packer and it all went back to alignment, and I have never felt so relieved.



Making things hasn't come naturally to me. I've always had to work quite hard to grasp the necessary skills – and from early on I had to come to terms with making a lot of mistakes. For many years this amounted to frustration and humility, but I've come to learn that mistakes are the ever-reliable sign that I'm reaching my limits. So long as I keep making them, I'm still learning. The rest is persistence.

Studio photography of the finished piece by Pier Carthiew

Process photos: Daniel Spielman

Daniel Spielman's Credenza 2 was runner-up Australian Furniture category winner for Maker of the Year 2025.

Learn more about Daniel Spielman at www.danielspielmanjoinery.com and Instagram @daniel_spielman_studio



Moved by Wood

Paul Barton looks for species with a high shrinkage rate to achieve the flowing bowl forms that he turns, carves, textures and colours.



Call me crazy, but the logs that shrink, crack and open up quickly are the ones I'm after for some of my work. I have been developing large coloured, carved and textured bowls like the one shown here over many years.

Originally, I was drawn to the movement created as timber goes through the drying process, and this led me down a rabbit hole trying to

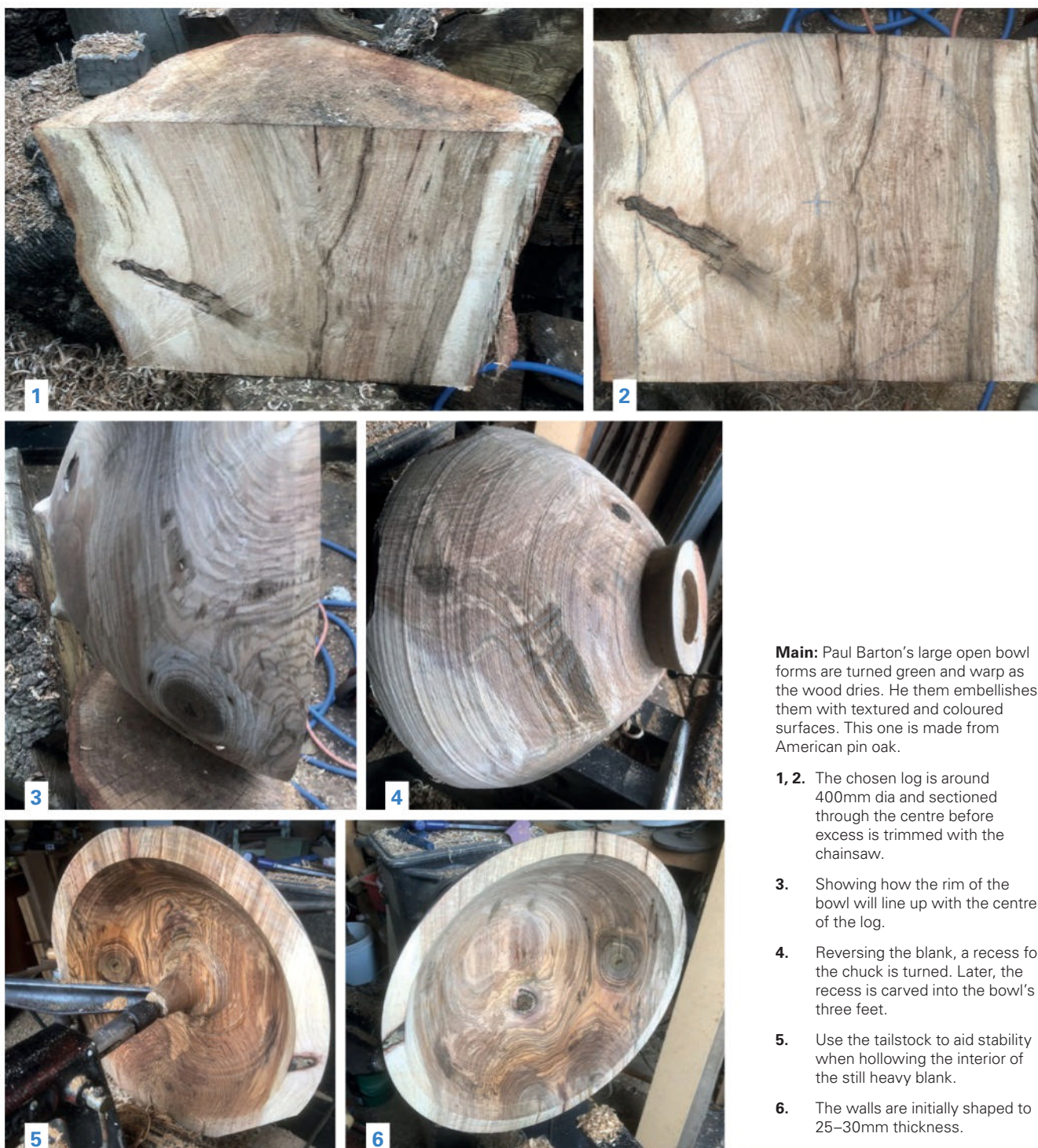
find timber that was more and more volatile. I found that timbers with high shrinkage rates often have the most dramatic movements when drying.

Shrinkage rates are usually only available for commercially grown species, which is a bit limited, so for me it came down to trial and error. Once again, it's the woods that crack dramatically when left in log form

that are usually the ones I use for these pieces.

A few of my go-to timbers

Fig (the edible one) is the most amazing I have found so far. It moves in the most incredible way. It's just hard to get here in Australia and large pieces are even harder to find. Peppercorn, stringybarks and the Northern hemisphere oaks also display really nice movement when turned green.



Main: Paul Barton's large open bowl forms are turned green and warp as the wood dries. He then embellishes them with textured and coloured surfaces. This one is made from American pin oak.

- 1, 2. The chosen log is around 400mm dia and sectioned through the centre before excess is trimmed with the chainsaw.
3. Showing how the rim of the bowl will line up with the centre of the log.
4. Reversing the blank, a recess for the chuck is turned. Later, the recess is carved into the bowl's three feet.
5. Use the tailstock to aid stability when hollowing the interior of the still heavy blank.
6. The walls are initially shaped to 25–30mm thickness.

I am using American pin oak for this piece. Quite common in Victoria, it is grown as street trees and in many suburban gardens. The log I have chosen is about 400mm diameter cut through the middle (**photos 1, 2**).

Turning a log into a blank

Usually I first remove as much material as possible with the chainsaw to reduce the weight. Some of my larger pieces

are 700–900mm in diameter and can weigh in excess of 150kg when they are ready to go on the lathe.

The blank is mounted on the lathe using a faceplate – I find this is the safest way. **Photo 3** shows the orientation of the bowl with the log. The rim of the bowl lines up with the centre of the sawn log because I find this provides the most movement.

Turning the bowl form

Once the blank is on the lathe the turning can begin. The outside of the bowl is shaped with my 1/2-inch and 1/4-inch bowl gouges. Most of the heavy cuts are done with the 1/2-inch and the finishing cuts with the 1/4-inch.

These bowls have three feet carved on the base. This will allow them to stand when finished no matter how much they have moved. **Photo 4**



7



8



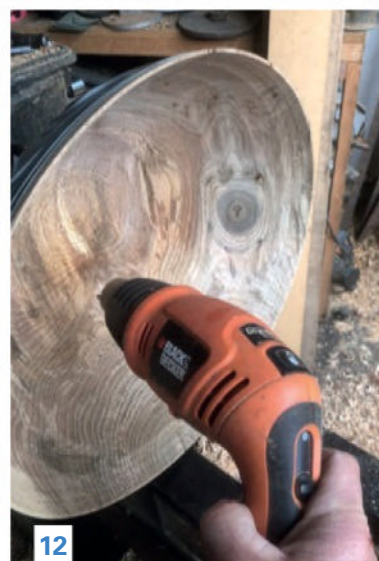
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11



12

7. A skew chisel works as a negative rake scraper for the final cuts.
8. Duct tape is used to hold any crack or defects in place while finishing off the interior.
9. A bowl gauge is set to 3mm and inside material removed in 50mm stages.
10. Finishing cuts on the interior with a scraping tool.
11. Sometimes the author drills a few holes to gauge wall thickness – these are later removed or modified during the carving process.
12. Using a heat gun can help prevent the sandpaper from clogging.
13. The interior has now been finish sanded.
14. The bowl is now reverse chucked to shape the feet.
15. First, round off the edges of the recess walls with a 1/4-inch bowl gauge.
16. To carve the feet, mark one-third segments.
17. The author uses a powercarver to shape the feet of the bowl.
18. Showing the completed carved feet.

shows the recess turned in the base ready for the chuck, this recess will be used later to carve the feet.

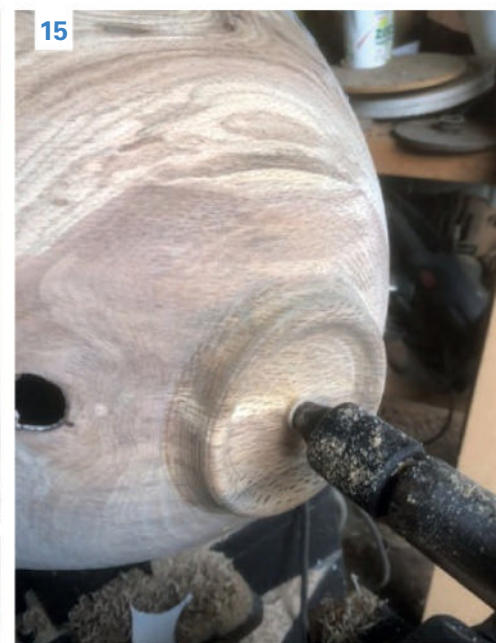
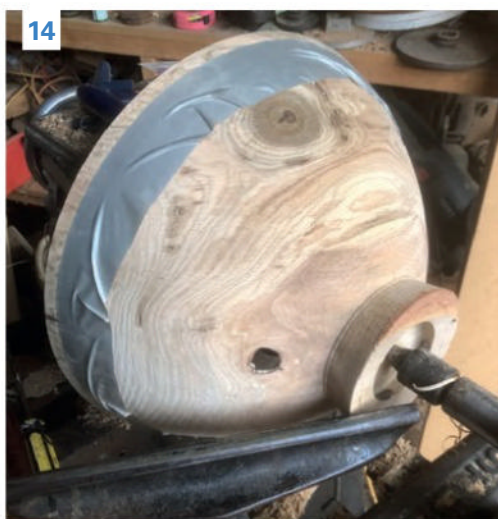
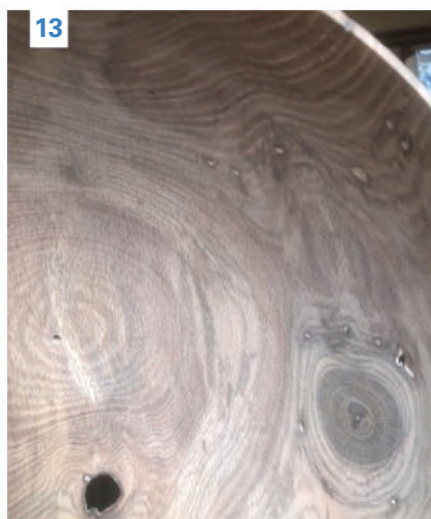
With the bowl now mounted in the chuck it is time to remove material from the inside. I will always bring the tailstock in when hollowing the interior to aid with stability when the weight is still high (**photo 5**).

The turning is really done in four stages Firstly the outside, then the inside which is initially hollowed to a wall thickness of approximately 25–30mm (**photo 6**). The outside is re-turned to remove any of the wobble that may have occurred while doing the first internal hollowing I use my 1/4-inch gauge to do the first finishing cuts and then come in with

my skew which I use as a negative rake scraper to do the final cuts **photo 7**.

Before the last stage of the turning is done, I will wrap the bowl in duct tape (**photo 8**). This helps hold any cracks or defects in place while finishing the inside.

All the inside work apart from the very bottom is done with the 1/4-inch bowl gauge. The inside is done in 50mm stages starting from the top. With the bowl gauge, I set my wall thickness at 3mm and remove material in 50mm steps (**photo 9**). This reduces vibration and allows me to get to the bottom without having to deal with the wood movement.



A lot of these pieces move while being turned because the walls are thin and the wood is wet. When the pressure within the log is released, they start to distort.

Once I get to bottom with the bowl gauge, I do a few finishing cuts with a scraper (**photo 10**). Often, I drill small holes down the side of the bowl to help me gauge wall thickness. These can be removed later on in the carving process (**photo 11**). Once this is done, the inside can be sanded. I often use a heat gun to dry the timber surface to help prevent the sandpaper clogging (**photos 12, 13**).

With the inside finished the bowl is reverse chucked so the base can be

shaped ready to carve the feet. For this I use a dolly shaped with a similar profile to the internal bowl which is held in the chuck. It is then as simple as jamming the bowl against the dolly with the tailstock (**photo 14**). I always put a little mark in the base of the bowl when I'm turning the recess to mark my centre as it makes it a lot easier when reversing the bowl.

Carving the feet

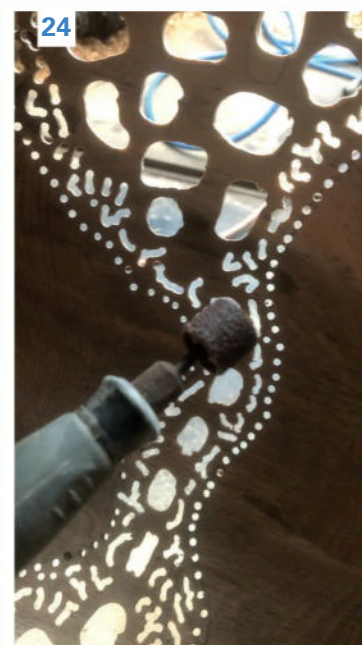
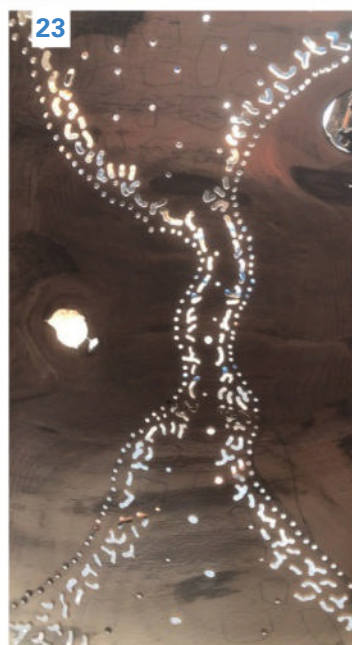
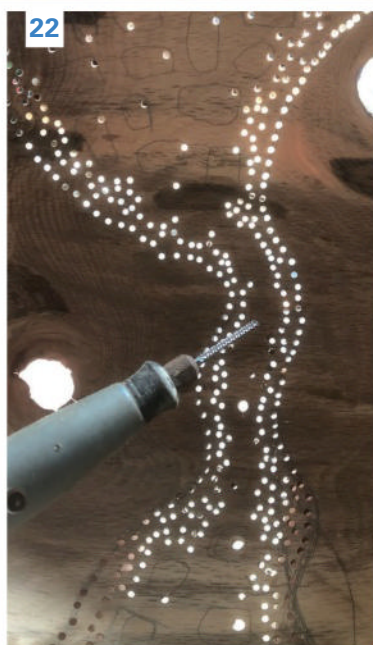
Once the bowl is reversed, round off the edges of the recess walls with a 1/4-inch bowl gauge (**photo 15**). The feet are now ready to be carved. I roughly mark one-third segments with a pencil (**photo 16**) and then use a powercarver (or hand tools) to remove material around the marks to create the feet (**photos 17, 18**). That's the turning

completed (**photos 19, 20**). The bowl can be set aside to dry – this usually only takes a couple of days. Once the bowl is dry, I then sand the feet.

The decorative markings

The next stage of the process is the decoration. I start by using a pencil to draw the internal area I want to carved. This allows me to visualise what the piece will potentially look like finished (**photo 21**).

With the design drawn it is now ready to carve with a high-speed rotary tool. Firstly, using an 1/8-inch drill bit, I drill holes along the border of the area to be carved and then randomly throughout the entire area that doesn't have the larger voids (**photo 22**). I usually drill a single hole in



each of the voids which will next help me remove the waste (**photo 23**).

To remove the waste from the voids a tungsten tile cutter is used. This allows me to start in the predrilled hole and simply run around the outline removing the waste as a single piece. With practice you can pretty much draw anything you like and simply cut it out.

After removing the voids, the interior surface of the bowl is cleaned up with a small drum sanding bit set up in the rotary tool (**photo 24**). Final shaping of any of the voids can also be done at this

stage with the drum sander. **Photo 25** shows the carving complete.

Texturing outer and inner surfaces

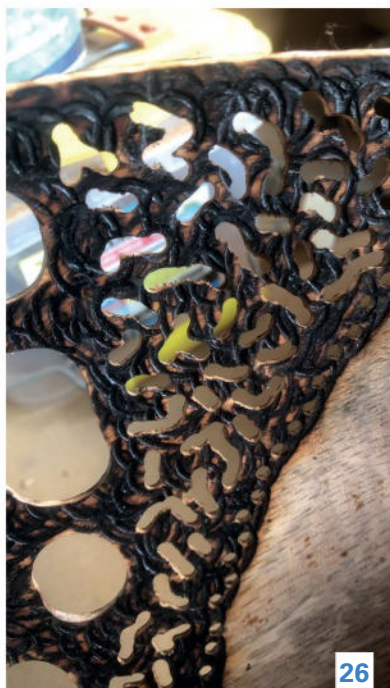
Texturing the outside of the bowl and the internal carved section is next and takes longer than the other processes – often I spread this out over a week or two. The texturing is done with a custom-built pyrography tool running a 2mm wire. I have several shapes but the one I use most is one that is just twisted into a couple of circles.

Starting at the rim of the bowl, this is as simple as pressing the hot wire against the bowl and moving around

the rim one mark after another until the whole outside of the bowl is covered. It's quite a long and tedious process, hence the one to two week time line.

The burning not only leaves the impression of the wire but also blackens the whole piece. Continued with this technique over the inside carved area starting from the top working your way down until you come to the other side (**photos 26, 27**).

It is worth noting if the wall thickness of the bowl is less than 3mm you will get slight burn through from the



19. The turning stage is now completed. Showing the outer view...
20. ...and the interior.
21. The decorative carving is marked out with a pencil.
22. Holes are first drilled along the border of the marked area and randomly throughout.
23. The holes are lengthened and shaped as desired. A tungsten tile cutter is used to remove the waste.
24. A small drum sander or a sanding bit in the rotary tool is used to clean up the finished carved surface.
25. Showing the completed carving from the outside.
26. Circular burn marks are created with a custom-built pyrography tool. Brushed-on black stain is used to blacken the areas that can't be burnt.
27. The inner and outer burning texture is now complete. You see how the bowl walls have moved during the drying process.
28. The unburnt areas have now been coloured using food dye.



outside to the inside and this is more prevalent in the sap wood. Also, all timbers behave differently, so there has been quite a lot of trial and error over the years.

Colouring the bowl

The final stage of the process is the colouring. The carved area is stained first because it is not possible to burn the internal areas that have been carved with the pyrography tool, I use a black mineral stain with a small brush to colour this bit.

Once this is dry the larger internal sections are coloured with food dye. Food dyes are my go-to option, there

is a larger range of colours compared to standard wood dyes and they are considerably cheaper. Most good cake decorating places will have a reasonable supply.

The food dye is just brushed on and the excess wiped off with a rag and then left to dry (**photo 28**). The entire piece is then sprayed with several coats of lacquer.

My favourite part of making these pieces is the time that elapses between finishing the turning and allowing the piece to dry. You never really know what you are going to get, a piece like this can take on a

life of its own once the wood has moved and dried.

Photos: Paul Barton



Paul Barton @paulbarton_ woodartist lives and works on the Bellarine Peninsula, Victoria. He has exhibited his work throughout Australia and was awarded the Tasmanian Premier's Award for Excellence in Craft in 2023. His philosophy is simple, respect the material you work with. He highlights the natural defects that exist in all trees to varying degrees which give his pieces a natural organic look. He turns wood as it is part of his life, and he does not see that ever changing.

Homecoming

Terry Martin tells how a trip to his hometown sparked an idea for an exhibition that reflects on place and memory.



As I edge toward my 80th birthday, I find myself looking back over the long grain of my life as a woodworker. The tally of my exhibitions tells one story, 115 in all since my first solo show in a small Brisbane gallery in 1990. But numbers do not measure meaning. Of all those exhibitions, the one I held this year in Swan Hill meant more than almost any other. It was not simply another show; it was a homecoming.

I spent the most formative years of my childhood in Swan Hill, on the banks of the Murray River in the Mallee region of north-west Victoria. It is a land of extremes. There are good years but there are also blazing summers, biting winters, dust storms that sweep in without warning, and long seasons of waiting for rain that may never come. The land can be harsh and unyielding, and it shapes those who grow up on it. Some of my family remain there still, rooted in the soil. The pressure to settle down and lead a quiet life was strong, but I left at sixteen, restless and curious, and for decades much of my time was spent in distant countries. But Swan Hill never quite loosened its hold.

A few years ago I returned to visit my family and was surprised to find a beautiful Regional Art Gallery beside the river. I stepped inside and saw an exhibition of Aboriginal woodwork. A seed was planted and once I was back in Brisbane I wrote to the gallery Director, Ian Tully, and asked whether he might consider hosting an exhibition of my work. His enthusiastic reply set the journey in motion.

In February 2026, my wife Yuriko and I packed 80 pieces in the back of our car and drove the 1,700 kilometres inland from Brisbane to Swan Hill. The summer heat was fierce and as we crossed the border into New South Wales, the green gave way to brown, the tree cover thinned, the horizons widened, and the roads grew rougher. Over two long days the landscape seemed to peel away the layers of my



Top: Terry Martin (centre) chats with local visitors to his exhibition at Swan Hill Gallery, Victoria.

Above: The road back to Swan Hill via the 'vast, shimmering' Hay Plains in New South Wales.

Main: Yeah...Nah..., jacaranda, 170mm dia



1. *Nature's Work*, driftwood, 520mm wide, 250mm high
2. *Angie's Tree*, red mallee burl, 230mm wide
3. *Uluru Bowl*, redgum burl, 255mm dia
4. *Heart of the Tree*, jacaranda, 410mm dia
5. *Celtic Roots*, jacaranda, 215mm dia
6. *Total Eclipse*, mango, 160mm high
7. *Starry Night*, blackheart sassafras, 2550mm dia

adult life. By the time we reached the vast, shimmering plains near Hay, I felt as though the intervening years had fallen from me. The country of my childhood was reassembling itself around me.

Arriving in Swan Hill, my body knew the roads before my mind did: here was the back road I rode along to school; there the old skin store where I sold rabbits I had trapped; beyond it the football ground where I played for the Swan Hill Thirds. Memories

didn't arrive in neat chronology but in flashes – dust on bare legs, the smell of

the river, frost that cracked beneath my feet. We visited my sister, shared meals with my niece Narelle in restaurants that would have been unimaginable in my boyhood and laughed with my great-grand niece – the fifth generation of my family in Swan Hill. The town had changed, and so had I, but the thread between us held.

I chose 50 pieces from those that I had brought with me and set the exhibition up over three days. When it opened in February, the emotion caught me by surprise. Friends had travelled from Brisbane and Melbourne, and my schoolmate and lifelong friend Colin stood beside me. My older sister Joan was surrounded by her children and extended family.

For much of his life my nephew Darren has





lived within the structured world of NDIS care that makes family gatherings difficult, but on that day he found himself in a rare moment of belonging. Looking out at them all, I realised that this exhibition was less about objects and more about people. I told the audience, 'I am not going to talk about my work because it can speak for itself. For me, today is about my family, my friends and about my hometown, Swan Hill.'

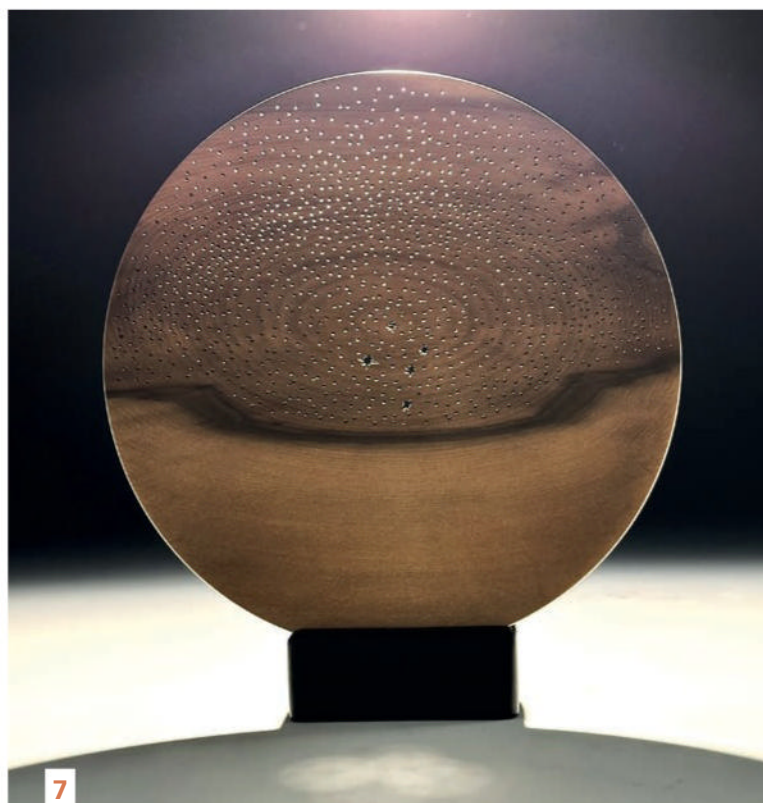
The work did speak, and it traced the arc of a journey that began long before I knew I would become a woodworker. One piece, *Nature's Work*, was driftwood I found on a beach in Papua New Guinea in 1967. I didn't shape it, the sea did: wormholes riddled it, salt and sand scoured it, the sun bleached it pale. I was still decades away from committing to wood as my life's work, but when I lifted that fragment from the sand I glimpsed something essential: the beauty of wood as a living record of time and weather. I have kept it ever since and for this exhibition, I finally mounted it on a stand. Its journey started far from Swan Hill, but it found its meaning there.



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Another pivotal work, *Uluru Bowl*, carried layers of memory. In 1992 I cut a redgum burl on my sister's farm near Tooleybuc, only 47 kilometres from Swan Hill. I took it to Uluru where I was Artist-in-Residence in 1993. While I was there I met a local Pitjantjatjara woman called Tiku Uluru, who was doing traditional bark painting inside while I worked outside under shade cloth. We watched each other work and chatted quietly until she asked if she could paint one of my bowls. I asked her to choose one and

she took the bowl I had just turned from the Tooleybuc wood.

I sat beside her as she worked and we talked about our lives. When it was finished, she handed it to me and said, 'You keep it!' Tiku had used the witchetty grub holes to represent digging with traditional sticks. She also painted coolamon bowls, nardoo seeds, a central fire and the shape of buttocks in the sand. On one side was her totem, the snake. The bowl embodies a dialogue between

cultures, landscapes, and histories – a reminder that every journey is layered, never solitary.

After I returned home I started to research the history of Aboriginal woodwork and that extended into the history of European woodwork in Australia. After I obtained a grant from the Australia Council, I travelled the country to do further research and the result was my first book, *Wood Dreaming*, published in 1995. At the start of the book I wrote, 'This book is dedicated to the first

8. *Non-Stop!*, Macassar ebony, 250mm high
9. *Frosty Morning Over the Murray*, Japanese maple, 320mm wide
10. *The Canthium Family with Adopted Hairy Oak Baby*, 2025, canthium and hairy oak, 40–170mm tall
11. *Holey Rim bowl*, jacaranda, 240mm dia
12. *Lightning Vessel*, jacaranda, 290mm high
13. *Mulberry Vessel*, mulberry, 220mm high
14. *Mango vessel with ebonised rim*, 205mm high

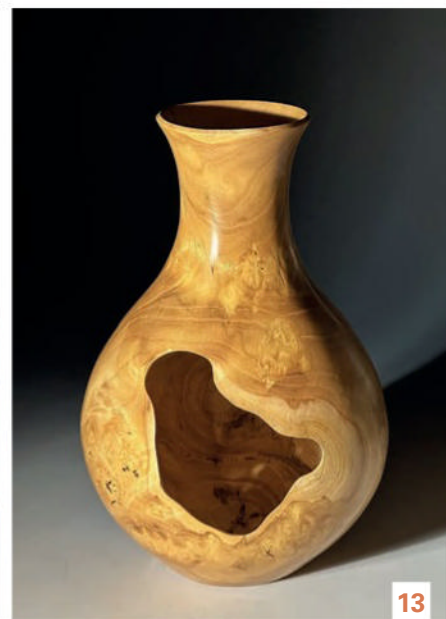




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Australian woodworkers. We all live in the shadow of their Dreaming.' All this grew out of her gentle offer to paint my work.

I included the piece called *Heart of the Tree* because it highlights my ideas about nature's work. In 2022 I turned it from jacaranda wood, and the walls are 4mm thin all the way to the bottom. The pattern pierced in the top is taken from a magnified microscopic image of the cell structure of jacaranda wood itself.

Other pieces referred more directly to Swan Hill. I made *Angie's Tree* from red mallee burl cut by my niece on the farm. *Celtic Roots* reflects the Irish ancestry of my family. *Frosty Morning Over the Murray* recalls how the air fairly crackles over the river in winter. *Total Eclipse* is how, in the cleanest air you can imagine, I saw the moon over Swan Hill. The colloquial rhythm of *Yeab...nah...* finds its echo in a burnt forest pierced by a single green shoot – harshness and hope together. *Starry Night* is the sparkling sky over the Murray – more stars than you can see in any city.

There were other pieces that celebrated simple form, but always with a nod to nature's unpredictability. *Lighting Vessel* is

a good example. When a jacaranda tree was struck by lightning it surged all the way through the sapwood to the ground. The tree survived and grew over the traumatic scar, leaving the clear pre-lightning wood in the centre of the trunk, while the burnt scar was overlaid with malformed growth.

I tried to show my pieces in thematic groups, so on one shelf I placed pieces that belong in the sky: *Total Eclipse*, *Starry Night* and *Melanoma Rising* (a nod to the skin cancers that almost everyone in Swan Hill seems to carry, including me).

I am in Brisbane again now and, looking back, I see more clearly that driving from Brisbane to Swan Hill with 80 pieces in the back of the car was more than a logistical exercise. It retraced my life's path from the boy who left at 16, to the old man returning after a lifetime spent away.

On the day after the opening, as I walked the local woodworking club through the exhibition, I noticed my voice shifting so I sounded more like a Swan Hill boy, and the journey felt complete. For decades I have exhibited in other countries, often needing to explain not only what I make, but who I am and where I

come from. In Swan Hill there was no need. They accepted me and my work and I felt like I belonged.

I have survived as a woodworker because of the support of my family, but my work has also been shaped by a lifetime of travel and, most importantly, tens of thousands of hours of experimentation in my workshop. This exhibition was not simply a milestone in a long career. It was a circle closing – a boyhood landscape meeting a lifetime's craft. In bringing my work back to Swan Hill, I realised that I had never really left.

Photos: Terry Martin



Terry Martin is a woodturner and author who lives in Brisbane. Learn more at www.terrymartinwoodartist.com/



Shades of Light

Graham Sands explains how to make the Japanese-inspired light pendant that was designed to suit the architecture and fittings of his mid-century home.

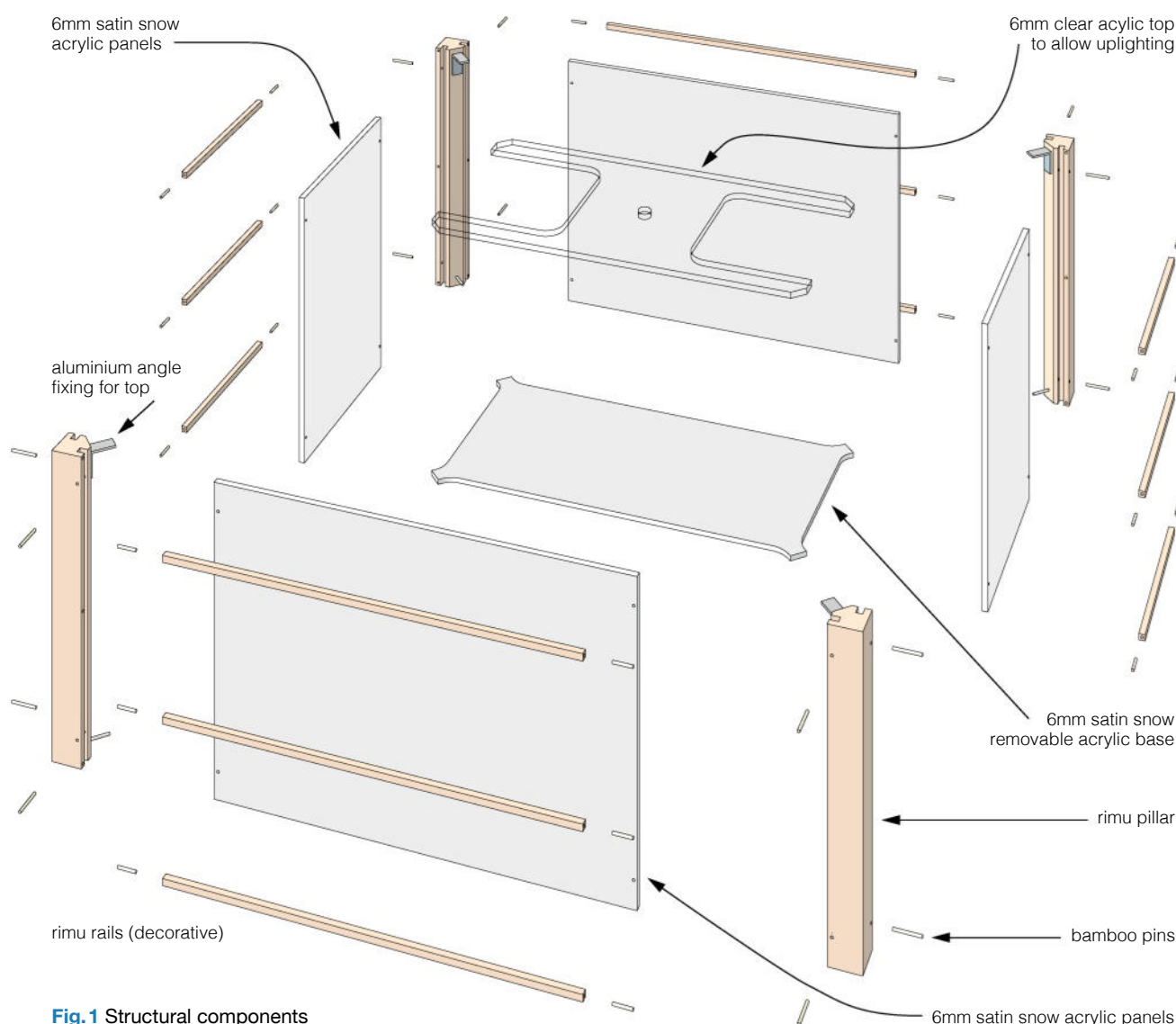


Fig.1 Structural components

My late partner Gabrielle's father Bill Carati designed and built the house shown here towards the end of the mid-century modern period, in the late 1960s. It fortuitously became available when we moved from Perth here to Titirangi in New Zealand in 2008, where Gabrielle was from.

Bill was influenced by Japanese architecture. He incorporated features such as cedar shoji screens, built-in furniture and split levels defining spaces within an open-plan in many of his houses, here in Titirangi and throughout Auckland. All the joinery, doors and floor are made from New Zealand native rimu and matai with Douglas fir exposed rafters and cedar window sashes.

The original 1960s light fittings had long-been unsympathetically replaced by previous owners. I've always appreciated tasteful and effective domestic lighting, often overlooked or disregarded due to lack of knowledge. Both Gabrielle and I admired the light fittings designed by Isamu Noguchi, George Nelson, Paul Henningsen and David Trubridge from New Zealand. We often used the Chochin style paper and bamboo lanterns back in Perth.

However, to fill this large and poorly lit space I wanted a pendant that would provide a substantial output of soft diffuse light. Also, I wanted it to be visually appropriate within the house.

For years I devised and considered methods to make a suitable, bright

pendant light without it being overpowering. Previously, as a professional photographer, I used light tables, which use opal acrylic as a diffuser to back-light transparencies. This gave me the idea to use it as a diffuser and prime structural element of a pendant light, making it easy to construct. I would use this instead of the *washi* paper found in traditional Japanese light fittings.

Construction

After some research I sourced satin snow acrylic which has a satin/matt finish, much more appropriate than the gloss of the opal. It was only available in 6mm which was ideal for structure and has a beautiful translucency.



1. The author drilling for bamboo pins in one of the corner rimu pillars with acrylic panel in place. Photo: Gabrielle Carati
2. A simple jig was used to dock the bamboo skewers used for pins.
3. Tapping in the pins which lock the acrylic panel to the rimu pillars.
4. Showing the corner junction construction.
5. Assembling the pendent light.
6. Fishing tackle wire leaders were fitted to the corners to suspend the light.
7. A view of the top panel fitted.
8. Showing the arrangement of ES bulbs that create a diffused light.

New Zealand native rimu (*Dacrydium cupressinum*) is a conifer harvested here extensively for use in the building industry and for furniture but has now become scarce in supply. It is now protected by law, however I have acquired a precious small amount over time, as I very much like its colour and grain pattern. It has a uniform texture, is durable, resilient and of course is the same wood used in the existing joinery of the house.

The main body of the pendant comprises four rimu corner pillars machined with grooves for the edges of the four acrylic side panels and pinned in place, that's it!

The 6 x 8mm grooves were routed in the internal faces of the 30 x 30mm rimu pillars and the internal corners were chamfered at 45°.

In keeping with the Japanese theme, I used 2.5mm diameter bamboo skewers (from the supermarket) cut

into lengths (with a Japanese saw) for pins to hold the acrylic in place, friction fit, no adhesive. The pins are a length such that they protrude, allowing disassembly, and as a design element.

The 6 x 6mm horizontal rimu rails are held in place at their ends with bamboo dowels. They are decorative only, to relate to the leading lines of the room and provide the Japanese lantern look. I seriously considered not including them for a more honest minimalist appearance.

The bottom satin snow acrylic diffuser rests on four projecting bamboo pins at the bottom of each corner pillar. This allows it to be easily removed for bulb changes and cleaning its upper surface from dead insects and the like. There is a 20mm gap all round for air circulation.

The top panel is fixed with aluminium angles to the pillars to provide rigidity

and attachment of the bulb assembly. It is clear acrylic to allow maximum, direct uplighting to the ceiling then reflection softly into the room. And it allows ventilation.

The pendant is suspended with four fishing tackle wire leaders to a rafter in the room. They are strong and so thin; barely visible they make the pendant look like it is floating on air!

Illumination

I shaped an aluminium bar to support four ES bulb holders for extra brightness and to avoid a hot-spot caused by a single bulb. This wiring is optional and must be made and checked by an electrician.

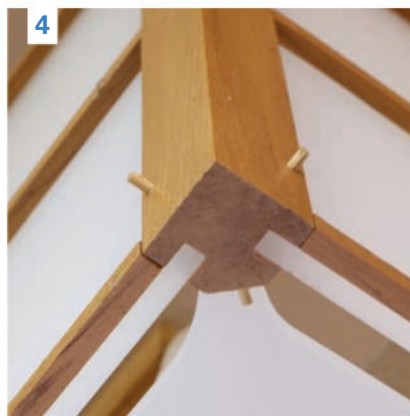
I am fastidious about the quality of light so bear with me here while venturing far from woodworking jargon.

- Colour Rendering Index (CRI) is the evenness of emission of colours throughout the spectrum, as a percentage quality compared to sunlight. The Sun, and old filament type bulbs are 100CRI. New LEDs are not! They vary a lot, a CRI of over 95 is acceptable, 98 better.
- Colour temperature is the warmth or coolness of light, it is measured in Kelvins (K). Daylight is between 5000K and 6500K. For an internal living environment, a warmer light of 3000K is more comfortable and pleasing to the eye.
- Brightness is measured in Lumens (lm)
- Wattage (w) is energy consumption
- ES is Edison screw

I compared four 6w 3000K 95CRI 600lm ES LED bulbs to four 20w 3000K 95CRI 2800lm. The 6w (equivalent of old 60 watt bulbs) was fine for the space, the 20 watt very bright. I have the option, to interchange them, or replace them with dimmable versions, now available.

Finishing off

A simple treatment only is needed to seal and protect the rimu components. I used a clear satin polyurethane.



Main image p.72: Koën Conway
Process photos and illustration:
Graham Sands



Graham Sands lives in Titirangi, New Zealand. He is illustrator for Australian Wood Review and creates the exploded and dimensioned diagrams

regularly seen in the magazine. He has also written articles for AWR several of which can be seen at www.woodreview.com.au



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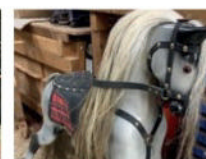
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Handmade for Hand Tools

A stand-alone tool tray is a functional and satisfying way of keeping your most-used carving tools for easy access on the bench – even more so if the joinery is cut by hand. Story by Charles Mak.



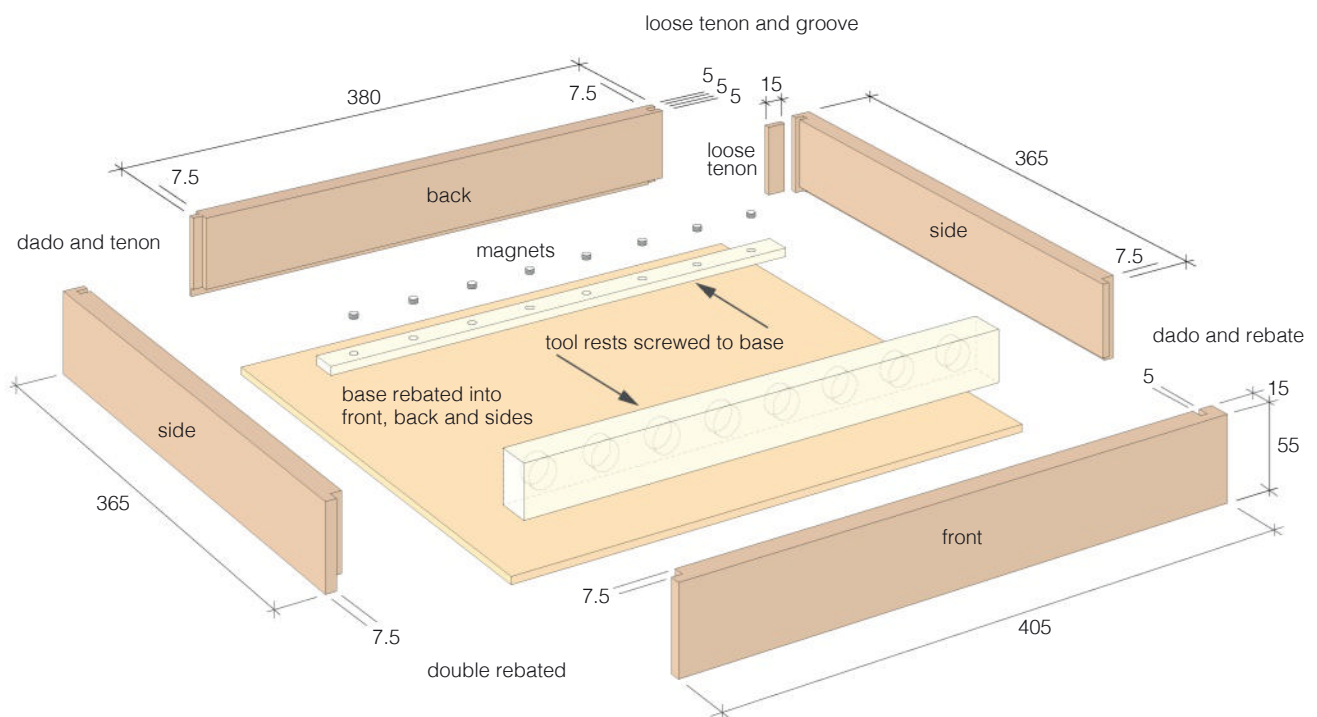


Fig.1 Components (mm)

I have used my combination plane – another version of a plough plane – to cut various decorative features in my projects, like, for example, on the sides of a tea tray I made for my daughter (**photo 1**). But, the combination plane, in a skilled hand, can efficiently make joints.

In this article, I will detail step-by-step how to cut by hand four different corner joints for a tool tray, mostly with a combination plane. The four corner joints are the double rebated joint, dado and rebate joint, loose tongue and glue joint, and the dado and tenon joint (**fig.1**). You can of course use other joinery planes such as a rebate plane or shoulder plane to make the joinery.

Laying out

As in any carcass build, begin by organising the parts in their proper orientation and marking them using the cabinetmaker's triangles or any marking system of your choice (**photo 2**). Complete the marking by laying out the four different joints on



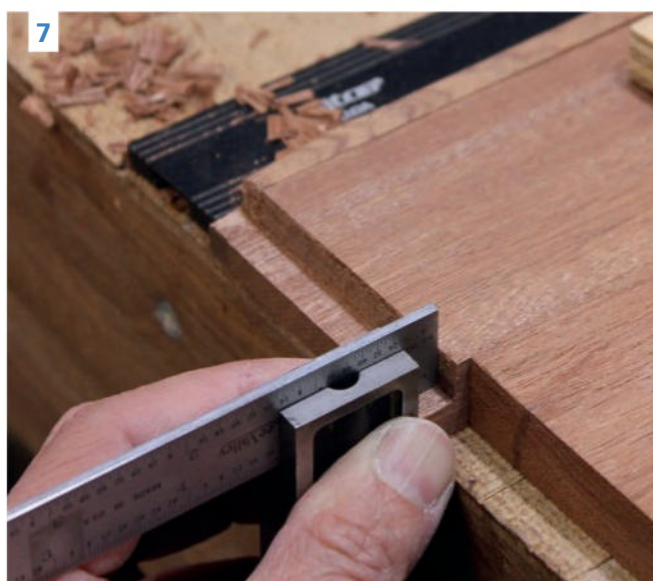
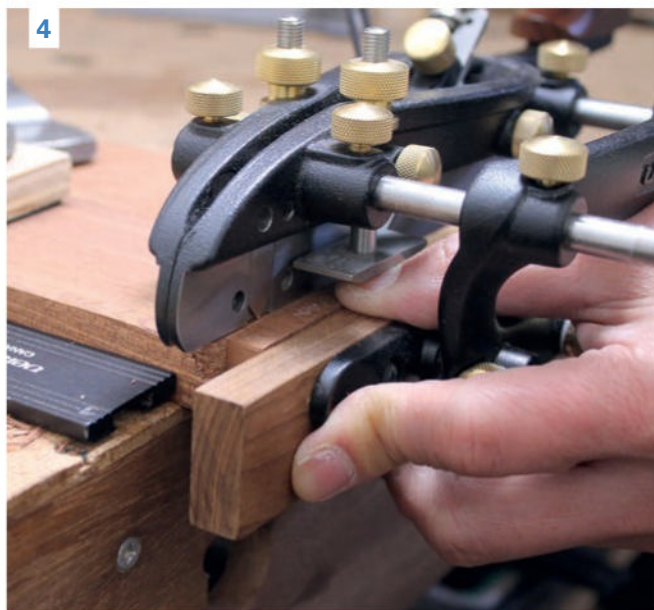
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Main: Practise your hand tool cut joinery skills to make this bench-top chisel tray.

1. Another tray variation by the author. Hand-cut decorative beads add elegance to the design.
2. Cabinetmaker's triangles keep track of all the parts in their proper order.
3. Marking the waste side of the cut prevents unnecessary cutting errors.



4. Start from the front end and pull the plane to scribe the lines with the spurs.
5. Move the plane back and make progressively longer cuts to full strokes.
6. To avoid tilting the plane, hold the handle with a soft grip and push it with the palm.
7. Check the rebate with a square for squareness.
8. Dry-assemble the mating pieces and check the fit.
9. Clamp a sacrificial strip to the work to prevent blow-out on the exit edge.
10. Scribe the cut lines for a rebate on the mating piece that matches the dado.
11. Plough a slot on the endgrain as deep as half the thickness of the mating piece.
12. Cut the dado and check for consistent depth.
13. Note the grain direction of the tongue, running along with the grain on the mating pieces.

the corners based on **fig.1, photo 3**.

Double rebated joint

Let's start with the double rebated or lapped joint, frequently used with small boxes. For this joint, as all the rebates are the same, the plane uses only one plane setting.

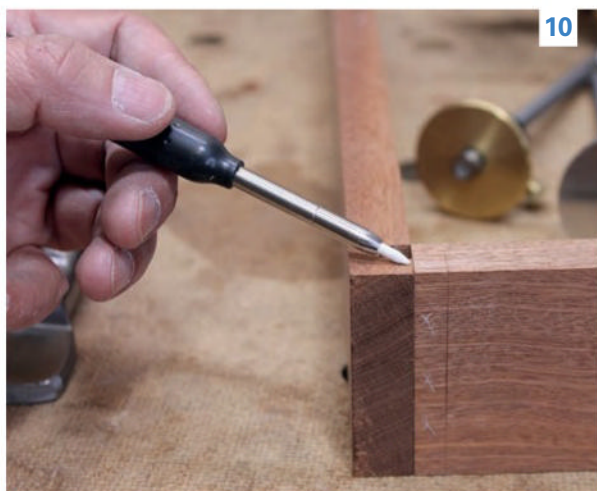
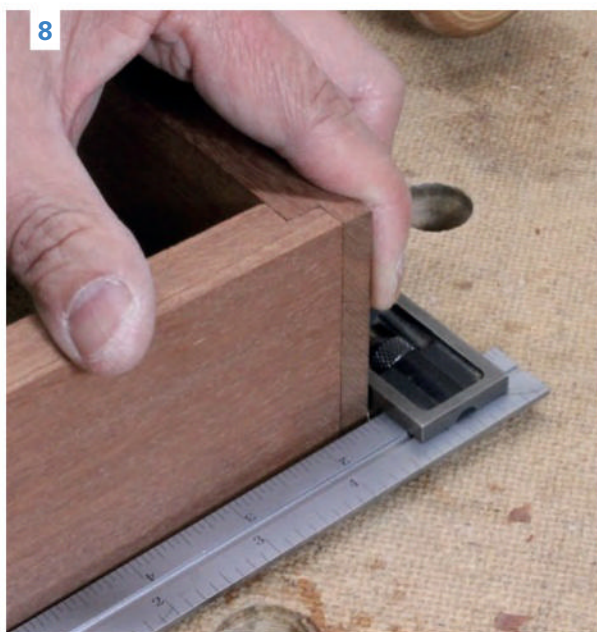
Referring to the instruction manual for the combo plane, I set up the plane as below:

1. Choose a cutter that is the same as the rebate width (7.5mm in this case) and set the depth of cut to 0.5mm
2. Set the spurs to the same as the depth of cut at 0.5mm
3. Set the fence so the blade cuts to the width of the cheek

4. Set the depth stop to the difference between the depth of the rebate (7.5mm) and depth of cut (0.5mm) (for this tray, the depth stop is, therefore, set at 7.5mm from the bottom of the skate).

To begin, place the plane near the far end of the stock to make a few scoring cuts with the spurs, which will avoid tear-out (**photo 4**). After scoring, make planing passes with the plane and continue shaving until the plane stops cutting wood (**photo 5**).

To prevent slanted cuts, press the fence against the stock while planing and hold the handle with a light grip to avoid tilting the plane (**photo 6**).



When done, dry fit and check the rebates for square (**photos 7, 8**).

Dado and rebate joint

Also known as a tongue and groove joint, the rack-resistant dado and rebate joint is suitable for light work. To mill a dado, install the blade (a 1/4" cutter in this project), and set the depth of cut and depth stop in the same manner as described in the last section for the double rebated joint. Set the fence to the thickness of the mating piece, or 5/8" here.

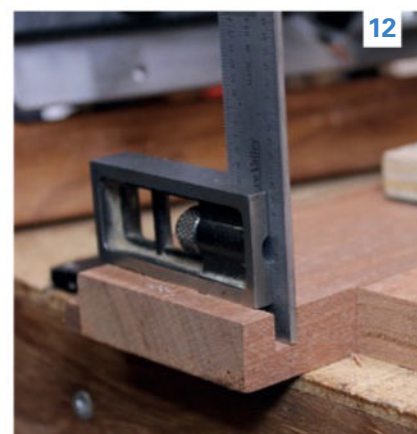
To start, set the plane and plough the dado across the grain (**photo 9**). To make the rebate, reset the plough plane's fence to cut a matching rebate for the dado (**photo 10**).

Loose tongue and groove joint

The third joint to cut, the loose tongue corner joint, is composed of a dado and a groove, held together with a tongue. First, set the fence at or close to the centre of the stock and plough a groove in the endgrain of one piece (**photo 11**). Next, cut the dado on the mating piece using the same plane setting (**photo 12**). Lastly, make a tongue out of a strip that fits snugly into the groove and dado (**photo 13**).

Dado and tenon joint

This last joint is like a mortise and tenon joint, but with a dado instead of a mortise. To make this joint, start by cutting the dado on one piece with





14. Lay out the tenon on the endgrain with a marking gauge and set the combination plane accordingly.
15. Remove the waste on one side and flip the work to cut the tenon on the other side.
16. After the glue-up, cut a panel for the tray base.
17. Glue magnets on the upper strip and drill blind holes on the bottom strip.
18. Centre the strips and screw them in place on the base board.

the combo plane. Then, scribe the tenon cut lines on the end grain of the mating piece and use the combo plane or a plough plane to make the tenon (**photos 14, 15**).

Bottom rebates

To house the bottom panel, make through rebates on the inside bottom edges of the side pieces and stopped rebates on the front and back pieces. Then, glue up the case and cut a ply board to the size of the rebated opening (**photo 16**).

The tool rest

For tool holding, make a strip with blind holes and a strip with magnets glued into recessed holes (**photo 17**).

Assembly and finishing

To finish off, break the edges, nail the ply bottom in place, and screw the strips to the bottom panel (from the back), and apply a finish (**photo 18**).

With its hand-cut joinery, this tool tray provides a good home for your tools while also being a testament to your unquestionable joinery plane skills!

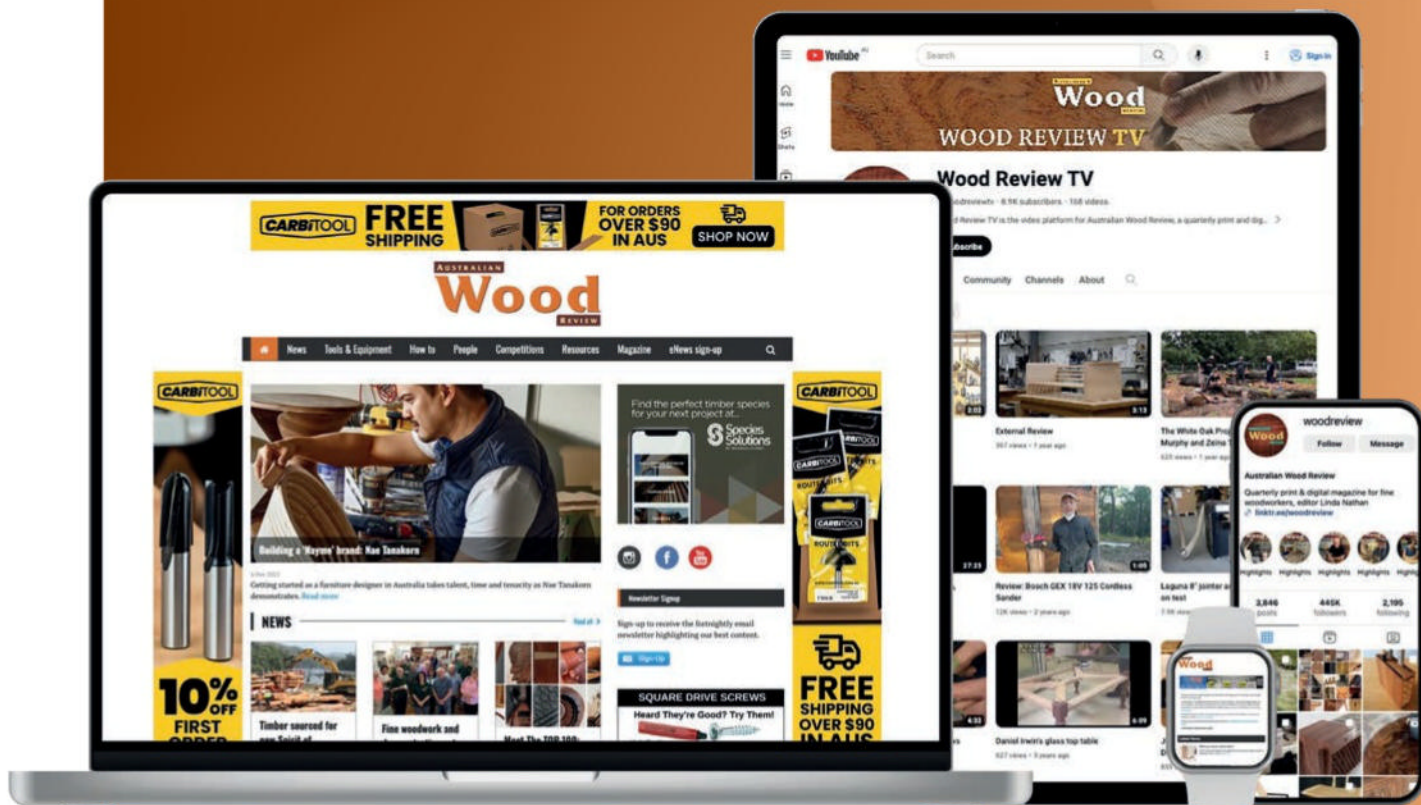
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Charles Mak lives in Alberta, Canada and enjoys writing articles and woodworking in his shop.

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